# Request for Proposals Works

## Design and Build

**(Single-Stage RFP without Initial Selection)**

## Procurement of:
## Design and Construction of Infrastructure & Superstructure Works including electrification with four Lots of the Istanbul North Rail Crossing Project (INRAIL)

**Employer:** Ministry of Transport and Infrastructure, Directorate General of Infrastructure Investments

**Project:** İstanbul North Rail Crossing Project (INRAIL)

**Contract title:** Design and Construction of Infrastructure & Superstructure Works including electricfication, with four Lots, under INRAIL Project

**Country:** Republic of Türkiye

**Loan No.:** 9943-TR

**RFP No:** AYGM-INRAIL-2025-YAP 01/1-2-3-4

**Issued on:** July 2026

# Table of Content

**PART 1 – Request for Proposal Procedures ..... 1**
Section I - Instructions to Proposers (ITP) ..... 2
Section II - Proposal Data Sheet (PDS) ..... 35
Section III. Evaluation and Qualification Criteria ..... 46
Section IV - Proposal Forms ..... **Hata! Yer işareti tanımlanmamış.**
Section V - Eligible Countries ..... 186
Section VI - Fraud and Corruption ..... 187

**PART 2 –Employer's Requirements ..... 189**
Section VII. Employer's Requirements ..... 190

**PART 3 – Conditions of Contract and Contract Forms ..... 386**
Section VIII - General Conditions (GC) ..... 387
Section IX - Particular Conditions (PC) ..... 388
Section X - Contract Forms ..... 460

# PART 1 – REQUEST FOR PROPOSAL PROCEDURES

# SECTION I - INSTRUCTIONS TO PROPOSERS (ITP)

# TABLE OF CONTENT

**A. General ..... 4**
1. Scope of Proposal ..... 4
2. Source of Funds ..... 5
3. Fraud and Corruption ..... 5
4. Eligible Proposers ..... 6
5. Eligible Materials, Equipment, and Services ..... 8

**B. Contents of RFP Document ..... 9**
6. Sections of RFP Document ..... 9
7. Clarification of RFP Document, Site Visit, Pre-Proposal Meeting ..... 9
8. Amendment of RFP Document ..... 11
9. Cost of Proposals ..... 11
10. Contacting the Employer ..... 11
11. Language of Proposals ..... 11

**C. Preparation of Proposals ..... 11**
12. Documents Comprising the Proposal ..... 11
13. Letter of Proposal, and Schedules ..... 13
14. Alternative Technical Proposals ..... 13
15. Proposal Prices ..... 13
16. Proposal Currencies ..... 15
17. Documents Establishing the Qualification of the Proposer ..... 15
18. Documents Establishing Conformity of the Works ..... 16
19. Securing the Proposal ..... 17
20. Period of Validity of Proposals ..... 18
21. Format and Signing of Proposal ..... 19

**D. Submission of Proposals ..... 19**
22. Submission, Sealing and Marking of Proposals ..... 19
23. Deadline for Submission of Proposals ..... 20
24. Late Proposals ..... 21
25. Withdrawal, Substitution, and Modification of Proposals ..... 21

**E. Opening of Technical Parts of Proposals ..... 21**
26. Opening of Technical Part by Employer ..... 21

**F. Evaluation of Proposals – General Provisions ..... 22**
27. Confidentiality ..... 22
28. Clarification of Proposals ..... 23
29. Deviations, Reservations, and Omissions ..... 23

**G. Evaluation of Technical Parts of Proposals ..... 23**
30. Determination of Responsiveness of Technical Parts ..... 23

31. Evaluation of Technical Proposals....24
32. Evaluation of Proposer's Qualification....24
33. Notification of evaluation of Technical Parts....25

**H. Opening of Financial Parts....25**
34. Public Opening of Financial Parts when BAFO or negotiations do not apply....25
35. Opening of Financial Parts when BAFO or negotiations apply....26

**I. Evaluation of Financial Part....27**
36. Nonmaterial Nonconformities....27
37. Arithmetic Correction....27
38. Conversion to Single Currency....28
39. Margin of Preference....28
40. Evaluation Process Financial Parts....28
41. Abnormally Low Proposals....29
42. Unbalanced or Front Loaded Proposals....29

**J. Evaluation of Combined Technical and Financial Part....29**
43. Evaluation of Combined Technical and Financial Proposals....29
44. Best and Final Offer (BAFO)....30
45. Most Advantageous Proposal (MAP)....30
46. Negotiations....30
47. Employer's Right to Accept Any Proposal, and to Reject Any or All Proposals....30
48. Standstill Period....31
49. Notification of Intention to Award....31

**K. Award of Contract....31**
50. Award Criteria....31
51. Notification of Award....31
52. Debriefing by the Employer....32
53. Signing of Contract....33
54. Performance Security....33
55. Procurement Related Complaint....34

# SECTION I - INSTRUCTIONS TO PROPOSERS

## A. GENERAL

**1. Scope of Proposal**

1.1 The Employer, as specified **in the PDS**, issues this Request for Proposals (RFP) Document for the Design and build of the Works as specified in Section VII, Employer's Requirements. The name, identification and number of lots (contracts) of this RFP are specified **in the PDS.**

1.2 Unless otherwise stated, throughout this RFP Document definitions and interpretations shall be as prescribed in the Section VIII, General Conditions.

1.3 Throughout this RFP Document:

(a) the term **"in writing"** means communicated in written form (e.g. by mail, e-mail, fax, including if specified **in the PDS**, distributed or received through the electronic-procurement system used by the Employer) with proof of receipt;

(b) if the context so requires, "**singular"** means **"plural"** and vice versa;

(c) **"Day"** means calendar day, unless otherwise specified as **"Business Day".** A Business Day is any day that is an official working day of the Borrower. It excludes the Borrower's official public holidays;

(d) **"Works"** refers to Works, subject of this request for proposals document, to be executed on design and build contracting arrangement;

(e) **"ES"** means environmental and social (including Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH));

(f) **"Sexual Exploitation and Abuse" "(SEA)"** means the following:

**Sexual Exploitation** is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;

**Sexual Abuse** is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;

(g) **"Sexual Harassment" "(SH)"** is defined as unwelcome sexual advances, requests for sexual favors, and other

verbal or physical conduct of a sexual nature by the Contractor's Personnel with other Contractor's or Employer's Personnel;

(h) **"Contractor's Personnel"** is as defined in Sub-Clause 1.1.16 of the General Conditions; and

(i) **"Employer's Personnel"** is as defined in Sub-Clause 1.1.32 of the General Conditions.

A non-exhaustive list of (i) behaviors which constitute SEA and (ii) behaviors which constitute SH is attached to the Code of Conduct form in Section IV.

**2. Source of Funds**

2.1 The Borrower or Recipient (hereinafter called "Borrower") indicated **in the PDS** has applied for or received financing (hereinafter called "funds") from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called "the Bank") in an amount specified **in the PDS** toward the project named **in the PDS**. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this RFP Document is issued.

2.2 Payments by the Bank will be made only at the request of the Borrower and upon approval by the Bank in accordance with the terms and conditions of the Loan (or other financing) Agreement between the Borrower and the Bank (hereinafter called the Loan Agreement), and will be subject in all respects to the terms and conditions of that Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of equipment, materials or any other goods, if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

**3. Fraud and Corruption**

3.1 The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Section VI.

3.2 In further pursuance of this policy, Proposers shall permit and shall cause their agents (where declared or not), subcontractors, sub-consultants, service providers, suppliers, and personnel, to permit the Bank to inspect all accounts, records and other documents relating to any initial selection process,

prequalification process, bid submission, proposal submission and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

**4. Eligible Proposers**

4.1 A Proposer may be a firm that is a private entity, a state-owned enterprise or institution subject to **ITP 4.6**—or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the RFP process and, in the event the JV is awarded the Contract, during contract execution. Unless specified **in the PDS**, there is no limit on the number of members in a JV.

4.2 A Proposer shall not have a conflict of interest. Any Proposer found to have a conflict of interest shall be disqualified. A Proposer may be considered to have a conflict of interest for the purpose of this RFP process, if the Proposer:

(a) directly or indirectly controls, is controlled by or is under common control with another Proposer; or

(b) receives or has received any direct or indirect subsidy from another Proposer; or

(c) has the same legal representative as another Proposer; or

(d) has a relationship with another Proposer, directly or through common third parties, that puts it in a position to influence the Proposal of another Proposer, or influence the decisions of the Employer regarding this RFP process; or

(e) any of its affiliates participates as a consultant in the preparation of the Employer's Requirements for the Works that are the subject of the Proposal; or

(f) or any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower as the Engineer for the Contract implementation; or

(g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified **in the PDS ITP 2.1** that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or

(h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the RFP Document or specifications of the Contract, and/or the Proposal evaluation process of such Contract; or (ii) would be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the RFP process and execution of the Contract.

4.3 A firm that is a Proposer (either individually or as a JV member) shall not participate in more than one Proposal, except for permitted alternative Proposals. This includes participation as a subcontractor in other Proposals. Such participation shall result in the disqualification of all Proposals in which the firm is involved. A firm that is not an individual Proposer or a JV member in a Proposal may participate as a subcontractor in more than one Proposal.

4.4 A Proposer may have the nationality of any country, subject to the restrictions pursuant to **ITP 4.8.** A Proposer shall be deemed to have the nationality of a country if the Proposer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed sub-contractors or sub-consultants for any part of the Contract including related Services.

4.5 A Proposer that has been sanctioned by the Bank, pursuant to the Bank's Anti-Corruption Guidelines, and in accordance with its prevailing sanctions policies and procedures as set forth in the World Bank Group's Sanctions Framework as described in Section VI paragraph 2.2 d., shall be ineligible to be initially selected for, prequalified for, bid for, submit proposal for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address specified **in the PDS**.

4.6 Proposers that are state-owned enterprises or institutions in the Employer's Country may be eligible to compete and be awarded a Contract(s) only if they can establish, in a manner acceptable to the Bank, that they (i) are legally and financially autonomous (ii)

operate under commercial law, and (iii) are not under supervision of the Employer.

4.7 A Proposer shall not be under suspension from submitting Proposals by the Employer as the result of the operation of a Bid Securing Declaration or Proposal-Securing Declaration.

4.8 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. When the procurement is implemented across jurisdictional boundaries (and more than one country is a Borrower, and is involved in the procurement), then exclusion of a firm or individual on the basis of **ITP 4.8 (a)** above by one country may be applied to that procurement across other countries involved, if the Bank and the Borrowers involved in the procurement agree.

4.9 A Proposer shall provide such documentary evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.

4.10 A firm that is under a sanction of debarment by the Borrower from being awarded a contract is eligible to participate in this procurement, unless the Bank, at the Borrower's request, is satisfied that the debarment; (a) relates to fraud or corruption, and (b) followed a judicial or administrative proceeding that afforded the firm adequate due process.

**5. Eligible Materials, Equipment, and Services**

5.1 The materials, equipment and services to be supplied under the Contract may have their origin in any country subject to the restrictions specified in Section V, Eligible Countries, and all expenditures under the Contract will not contravene such restrictions. At the Employer's request, Proposers may be required to provide evidence of the origin of materials, equipment and services.

# B. CONTENTS OF RFP DOCUMENT

**6. Sections of RFP Document**

6.1 The RFP Document consists of Parts 1, 2, and 3, which include all the sections indicated below, and should be read in conjunction with any Addenda issued in accordance with **ITP 8**:

**PART 1 Request for Proposal Procedures**

Section I - Instructions to Proposers (ITP)

Section II - Proposal Data Sheet (**PDS**)

Section III - Evaluation and Qualification Criteria

Section IV - Proposal Forms

Section V - Eligible Countries

Section VI - Fraud and Corruption

**PART 2 Employer's Requirements**

Section VII - Employer's Requirements

**PART 3 Conditions of Contract and Contract Forms**

Section VIII - General Conditions

Section IX - Particular Conditions

Section X - Contract Forms

6.2 The Specific Procurement Notice, Notice of Request for Proposals (RFP) issued by the Employer, is not part of this RFP Document.

6.3 Unless obtained directly from the Employer, the Employer is not responsible for the completeness of the document, responses to requests for clarification, the Minutes of the pre-Proposal meeting (if any), or Addenda to the RFP Document in accordance with **ITP 8**. In case of any contradiction, documents obtained directly from the Employer shall prevail.

6.4 The Proposer is expected to examine all instructions, forms, terms, and specifications in the RFP Document and to furnish with its Proposal all information or documentation as is required by the RFP Document.

**7. Clarification of RFP Document, Site Visit, Pre-Proposal Meeting**

7.1 A Proposer requiring any clarification of the RFP Document shall contact the Employer in writing at the Employer's address specified **in the PDS** or raise its enquiries during the pre-Proposal meeting if provided for in accordance with **ITP 7.4**. The Employer will respond to any request for clarification, provided that such request is received prior to the deadline for submission of Proposals within a period specified **in the PDS.** The Employer shall forward copies of its response to all Proposers who have

acquired the RFP Document in accordance with **ITP 6.3**, including a description of the inquiry but without identifying its source. If so specified **in the PDS**, the Employer shall also promptly publish its response at the web page identified **in the PDS**. Should the Employer deem it necessary to amend the RFP Document as a result of a request for clarification, it shall do so following the procedure under **ITP 8.**

7.2 The Proposer is advised to visit and examine the Site of the Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Proposal and entering into a contract. The costs of visiting the site shall be at the Proposer's own expense.

7.3 The Proposer and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Proposer, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

7.4 The Proposer's designated representative is invited to attend a pre-Proposal meeting and/or a site visit, if provided for **in the PDS**. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage. Nonattendance at the pre-Proposal meeting will not be a cause for disqualification of a Proposer.

7.5 The Proposer is requested to submit any questions in writing, to reach the Employer not later than one week before the meeting.

7.6 Minutes of the pre-Proposal meeting, including the text of the questions raised without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Proposers who have acquired the RFP Document in accordance with **ITP 6.3**. Any modification to the RFP Document that may become necessary as a result of the pre-Proposal meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to **ITP 8** and not through the minutes of the pre-Proposal meeting.

**8. Amendment of RFP Document**

8.1 At any time prior to the deadline for submission of Proposals, the Employer may amend the RFP Document by issuing addenda.

8.2 Any addendum issued shall be part of the RFP Document and shall be communicated in writing to all who have obtained the RFP Document from the Employer in accordance with **ITP 6.3.** The Employer shall also promptly publish the addendum on the Employer's web page in accordance with **ITP 7.1.**

8.3 To give prospective Proposers reasonable time in which to take an addendum into account in preparing their Proposals, the Employer may, at its discretion, extend the deadline for the submission of Proposals, pursuant to **ITP 23.2.**

**9. Cost of Proposals**

9.1 The Proposer shall bear all costs associated with the preparation and submission of its Proposal, and the Employer will in no case be responsible or liable for those costs.

**10. Contacting the Employer**

10.1 From the time of Proposal opening to the time of Contract award, if any Proposer wishes to contact the Employer on any matter related to the Proposal, it should do so in writing.

10.2 If a Proposer tries to directly influence the Employer or otherwise interfere in the Proposal evaluation process and the Contract award decision, its Proposal may be rejected.

**11. Language of Proposals**

11.1 Unless otherwise specified **in the PDS**, the Proposal prepared by the Proposer and all correspondence and documents related to the Proposal exchanged by the Proposer and the Employer shall be written in the English Language, or, **if the PDS** so provides, in either one of two languages specified there. Any printed literature furnished by the Proposer as part of its Proposal may be in a language not specified **in the PDS,** as long as such literature is accompanied by a translation of its pertinent passages into the language of the Proposal, in which case, for purposes of interpretation of the Proposal, the translation shall govern.

## C. PREPARATION OF PROPOSALS

**12. Documents Comprising the Proposal**

12.1 The Proposal shall comprise two Parts, namely the Technical Part and the Financial Part. These two Parts shall be submitted simultaneously in two separate sealed envelopes (single-stage, two-envelope RFP process). One envelope shall contain only information relating to the Technical Part and the other, only information relating to the Financial Part. These two envelopes shall be enclosed in a separate sealed outer envelope marked "Original Proposal".

12.2 The Technical Part submitted by the Proposer shall comprise the following:

(a) Letter of Proposal - Technical Part, prepared in accordance with **ITP 13**;

(b) Security: Proposal Security or Proposal-Securing declaration, in accordance with **ITP 19**;

(c) Alternative Proposal - Technical Part, if permissible in accordance with **ITP 14**;

(d) written confirmation authorizing the signatory of the Proposal to commit the Proposer, in accordance with **ITP 21.1**;

(e) documentary evidence that the Proposer continues to be eligible and qualified to perform the contract if its Proposal is accepted;

(f) method statement, equipment, personnel, and any other information as stiplulated in Section IV, Proposal Forms

(g) documentary evidence in accordance with **ITP 18** that the Works offered by the Proposer conform to the RFP Document;

(h) Details of any departures in their Technical Part from the RFP documents;

(i) in the case of a Technical Part submitted by a JV, JV agreement, or letter of intent to enter into a JV including a draft agreement, indicating at least the parts of the Works to be executed by the respective partners;

(j) list of subcontractors, in accordance with **ITP 18.3**;

(k) Local Labor Method Statement in accordance with ITP 18.2 (d) and Section IV, Bidding Forms; and any other document required **in the PDS**.

12.3 The Financial Part submitted by the Proposer shall comprise the following:

(a) **Letter of Proposal - Financial Part:** prepared in accordance with **ITP 13**;

(b) **Price Schedules:** completed prepared in accordance with **ITP 15** and **ITP 16**;

(c) **Alternative Proposal – Financial Part:** if permissible in accordance with **ITP 14**;

(d) **Financial Disclosure:** The Proposer shall furnish in the Letter of Proposal information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Proposal; and

(e) **Other:** any other document required **in the PDS**.

12.4 The Technical Part shall not include any financial information related to the Proposal price. Where material financial information related to the Proposal price is contained in the Technical Part, the Proposal shall be declared non-responsive.

12.5 The Proposer shall furnish in the Letter of Proposal-Technical Part three names of the potential DAAB members and attach their curriculum vitae. The list of potential DAAB members proposed by the Employer (Contract Data 21.1) and by the Proposer (Letter of Proposal) shall be subject to Bank's No-objection.

**13. Letter of Proposal, and Schedules**

13.1 The Proposer shall complete the Letter of Proposal – Technical Part and Letter of Proposal - Financial Part using the relevant forms furnished in Section IV, Proposal Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under **ITP 21.3**. All blank spaces shall be filled in with the information requested.

**14. Alternative Technical Proposals**

14.1 Alternative Proposal - Technical Part: the Proposer wishing to offer alternative technical Proposal shall (i) document that the proposed technical alternatives are to the benefit of the Employer, that they fulfill the principal objectives of the contract, and that they meet the basic performance and technical criteria specified in the RFP Documents; and (ii) further provide all information necessary for a complete technical evaluation of the alternative by the Employer, including as relevant drawings, design calculations, technical specifications, and proposed construction methodology and other relevant details.

14.2 Alternative Proposal - Financial Part: The Proposer submitting alternative technical Proposal shall provide all information necessary for a complete financial evaluation of the alternative by the Employer, including breakdown of prices relevant to the offered technical alternative and in the manner and detail called for in the Schedule of Rates and Prices (if any) incuded in Section IV – Proposal Forms**.**

14.3 Only the technical alternatives, if any, of the Proposer with the Most Advantageous Proposal conforming to the basic performance and technical criteria specified in the RFP Documents shall be considered by the Employer.

**15. Proposal Prices**

15.1 Unless otherwise **specified in the PDS,** Proposers shall quote for the entire Works on a "single responsibility" basis such that the total lump sum Proposal price, subject to any adjustments, in accordance with the Contract, covers all the Contractor's obligations mentioned in or to be reasonably inferred from the RFP Document in respect of the design, manufacture, including procurement and subcontracting (if any), delivery, construction

and completion of the Works. This includes all requirements under the Contractor's responsibilities for testing, pre-commissioning and commissioning (as applicable) of the Works and, where so required by the RFP Document, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as may be specified in the RFP Document, all in accordance with the requirements of the General Conditions.

15.2 Proposers shall give a breakdown of the prices in the manner and detail called for in the Schedule of Priced Activities and Sub-activities included in Section IV, Proposal Forms with further breakdown prices for sub activities, as appropriate. The total of the prices of the items in the Schedule of Priced Activities is the Proposer's offer to complete the works on a "single responsibility" basis. The cost of any items that the Proposer may have omitted is deemed to be included in the price of other items in the Schedule of Priced Activities and Sub-activities and will not be paid for separately by the Employer.

15.3 The prices shall be either fixed or adjustable as specified **in the PDS**.

15.4 In the case of **Fixed Price**, prices quoted by the Proposer shall be fixed during the Proposer's performance of the contract and not subject to variation on any account. A Proposal submitted with an adjustable price quotation will be treated as non-responsive and rejected.

15.5 In the case of **Adjustable Price**, prices quoted by the Proposer shall be subject to adjustment during performance of the contract to reflect changes in the cost elements such as labor, material, transport and Contractor's equipment in accordance with the procedures specified in the corresponding Schedule of Cost Indexation. A Proposal submitted with a fixed price quotation will not be rejected, but the price adjustment will be treated as zero. Proposers are required to indicate the source of labor and material indices in the corresponding Form in Section IV, Proposal Forms.

15.6 If so indicated in **ITP 1.1**, Proposals are being invited for individual lots (contracts) or for any combination of lots (packages). Proposers wishing to offer any price reduction (discount) for the award of more than one Contract shall specify in their Letter of Proposal the price reductions applicable to each package, or alternatively, to individual Contracts within the package, and the manner in which the price reductions will apply. **However, discounts for the award of more than one contract will not be considered for proposal evaluation purpose.**

15.7 Proposers wishing to offer any unconditional discount shall specify in their Letter of Proposal the offered discounts and the manner in which price discounts will apply.

15.8 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of Proposals, shall be included in the Proposal price submitted by the Proposer.

**16. Proposal Currencies**

16.1 The currency (ies) of the Proposal and the currency (ies) of payments shall be the same and shall be as specified **in the PDS**.

16.2 Proposers may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the Schedule of Priced Activities and Sub-activities Schedules and shown in the Table of Adjustment Data in the Appendix to the Proposal are reasonable, in which case a detailed breakdown of the foreign currency requirements shall be provided by Proposers.

**17. Documents Establishing the Qualification of the Proposer**

17.1 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract, the Proposer shall provide the required information including on Sexual Exploitation and Abuse (SEA) / SH disqualification status in the corresponding information sheets included in Section IV, Proposal Forms.

17.2 If a margin of preference applies in accordance with **ITP 39.1**, domestic Proposers, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with **ITP 39.1**.

**Subcontractors**

17.3 **Unless** otherwise stated **in the PDS,** the Employer does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Employer.

17.4 Proposers may propose subcontracting up to the percentage of total value of contracts or the volume of works as specified **in the BDS**. Subcontractors proposed by the Proposer shall be fully qualified for their parts of the Works.

17.5 For the purpose of assessment of qualifications of the Proposer, subcontractor's qualifications shall not be used by the Proposer to qualify for the Works unless their specialized parts of the Works are designated by the Employer **in the PDS** as can be met by subcontractors referred to hereafter as Specialized Subcontractors,

in which case, the specific experience of the Specialized Subcontractors proposed by the Proposer, as specified in Section III-A, Qualification, may be considered in the assessment of the qualifications of the Proposer. The general experience and financial resources of the Specialized Subcontractors shall not be added to those of the Proposer for purposes of qualification of the Proposer.

**18. Documents Establishing Conformity of the Works**

18.1 Pursuant to **ITP 12.2 (f),** the Proposer shall furnish, as part of its Proposal documents establishing the conformity to the RFP Documents of the Works that the Proposer proposes to design, and build under the Contract.

18.2 The documentary evidence of the conformity of the Works with the RFP documents may be in the form of literature, drawings and data, and shall include:

(a) the documents specified in Section IV (Proposal Forms) - Technical Proposal;

(b) detailed description of the essential technical and functional/performance characteristics of the proposed Works, in response to the Employer's Requirements; and

(c) adequate evidence demonstrating the substantial responsiveness of the Works to the Employer's Requirements. Proposers shall note that standards for workmanship, materials and equipment designated by the Employer in the RFP Document are intended to be descriptive (establishing standards of quality and performance) only and not restrictive. The Proposer may substitute alternative standards, in its technical proposal, provided that it demonstrates to the Employer's satisfaction that the substitutions are substantially equivalent or superior to the standards designated in the Performance / Functional requirements specified by the Employer.

(d) Unless otherwise specified **in the PDS**, the Proposer shall: (i) allocate not less than 30% of the total labour cost under the contract to the employment of local labour[1]; and (ii) submit the Local Labour Method Statement.

18.3 The Proposer shall be responsible for ensuring that any proposed subcontractor complies with the requirements of **ITP 4**, and that any Works to be provided by the subcontractor comply with the requirements of **ITP 5** and **ITP 18.1.** The Proposer shall submit its Code of Conduct that meets the requirements setout in Section IV-Proposal Forms.

[1] Local labour excludes Contractor's foreign personnel. Foreign personnel who are already working in the Borrower's country on another project/contract shall also not be treated as local labour.

**19. Securing the Proposal**

19.1 The Proposer shall furnish as part of its Proposal, either a Proposal-Securing Declaration or a Proposal Security as specified **in the PDS**, in original form and, in the case of a Proposal Security, in the amount and currency specified **in the PDS**.

19.2 A Proposal-Securing Declaration shall use the form included in Section IV, Proposal Forms.

19.3 If a Proposal Security is specified pursuant to **ITP 19.1**, the Proposal security shall be a demand guarantee in any of the following forms at the Proposer's option:

(a) an unconditional guarantee issued by a bank or a non-bank financial institution (such as an insurance, bonding or surety company);

(b) an irrevocable letter of credit;

(c) a cashier's or certified check; or

(d) another security indicated **in the PDS**,

from a reputable source from an eligible country. If an unconditional guarantee is issued by a non-bank financial institution located outside the Employer's Country the issuing non-bank financial institution shall have a correspondent financial institution located in the Employer's Country to make it enforceable unless the Employer has agreed in writing, prior to Proposal submission, that a correspondent financial institution is not required.

19.4 In the case of a bank guarantee, the Proposal Security shall be submitted either using the Proposal Security Form included in Section IV, Proposal Forms or in another substantially similar format approved by the Employer prior to Proposal submission. In either case, the form must include the complete name of the Proposer. The Proposal Security shall be valid for twenty-eight days (28) beyond the original date of expiry of the Proposal validity, or beyond any extended date if requested under **ITP 20.2.**

19.5 If a Proposal Security or a Proposal-Securing Declaration is specified pursuant to **ITP 19.1**, any Proposal not accompanied by a substantially responsive Proposal Security or Proposal-Securing Declaration shall be rejected by the Employer as non-responsive.

19.6 If a Proposal Security is specified in accordance with **ITP 19.1**, the Proposal Security of the Proposers shall be returned as promptly as possible once the successful Proposer has signed the Contract, furnished the required Performance Security, and if required **in the PDS**, the Environmental and Social (ES) Performance Security.

19.7 The Proposal Security may be forfeited:

(a) if a Proposer withdraws its Proposal prior to the expiry date of the Proposal validity specified by the Proposer on the Letter of Proposal or any extended date provided by the Proposer; or

(b) if the successful Proposer fails to:

(i) sign the Contract in accordance with **ITP 53**; or

(ii) furnish a Performance Security and if required **in the PDS**, the Environmental and Social (ES) Performance Security, in accordance with **ITP 54.**

19.8 The Proposal Security or the Proposal-Securing Declaration of a JV shall be in the name of the JV that submits the Proposal. If the JV has not been legally constituted into a legally enforceable JV at the time of submission of Proposals, the Proposal Security or the Proposal-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in **ITP 4.1.**

19.9 If a Proposal Security is not required **in the PDS**, and:

(a) if a Proposer withdraws its Proposal prior to the expiry date of the Proposal validity specified by the Proposer on the Letter of Proposal or any extended date provided by the Proposer ; or

(b) if the successful Proposer fails to:

(i) sign the Contract in accordance with **ITP 53;** or

(ii) furnish a performance security and if required **in the PDS**, the Environmental and Social(ES) Performance Security, in accordance with **ITP 54**,

the Employer may, if provided for **in the PDS**, declare the Proposer disqualified to be awarded a contract by the Employer for a period of time as stated **in the PDS**.

**20. Period of Validity of Proposals**

20.1 Proposals shall remain valid until the date specified **in the PDS** or any extended date if amended by the Employer in accordance with ITP 8. A Proposal that is not valid until the date specified **in the PDS,** or any extended date if amended by the Employer in accordance with ITP 8, shall be rejected by the Employer as nonresponsive. -

20.2 In exceptional circumstances, prior to the date of expiry of the Proposal validity, the Employer may request that the Proposers extend the date of validity until a specified date. The request and the responses to the request shall be made in writing. A Proposer may refuse the request without risking execution of the Proposal-Securing Declaration or forfeiting the Proposal Security. Except as provided in **ITP 20.3**, a Proposer agreeing to the request will not be

required or permitted to modify its Proposal, but will be required to ensure that the Proposal Security is extended for a correspondingly longer period, pursuant to **ITP 19.4**.

20.3 In the case of fixed price contracts, if the award is delayed by a period exceeding fifty-six (56) days beyond the date of expiry of the Proposal validity specified in accordance with ITP 20.1, the contract price will be adjusted as specified **in the PDS**. Proposal evaluation will be based on the Proposal prices wpruithout taking into consideration the above correction.

**21. Format and Signing of Proposal**

21.1 The original and all copies of the Proposal, each consisting of the documents listed in **ITP 12**, shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Proposer. The authorization must be in writing as specified **in the PDS**, and included in the Proposal pursuant to **ITP 12.2(d).** The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Proposal where entries or amendments have been made shall be signed or initialed by the person signing the Proposal.

21.2 In case the Proposer is a JV, the Proposal shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

21.3 The Proposal shall contain no interlineations, erasures, or overwriting, except to correct errors made by the Proposer, in which case such corrections shall be initialed by the person or persons signing the Proposal.

21.4 The Proposer shall furnish in the Proposal Submission Form (Section IV) information regarding commissions or gratuities, if any, paid or to be paid to agents relating to this procurement and to the execution of the Contract should the Proposer be successful.

## D. SUBMISSION OF PROPOSALS

**22. Submission, Sealing and Marking of Proposals**

22.1 Unless the **PDS** states that Proposals are to be submitted electronically the following procedures shall apply.

(a) The Proposer shall deliver the Proposal in two separate, sealed envelopes. One envelope containing the Technical Part and the other the Financial Part. These two envelopes shall be enclosed in a sealed outer envelope and clearly marked “Proposal - Original”.

(b) In addition, the Proposer shall prepare copies of the Proposal, in the number specified **in the PDS**. Copies of the

Technical Part shall be placed in a separate sealed envelope marked "Copies: Technical Part". Copies of the Financial Part shall be placed in a separate sealed envelope marked "Copies: Financial Part". The Proposer shall place both of these envelopes in a separate, sealed outer envelope marked "Proposal - Copies". In the event of any discrepancy between the original and the copies, the original shall prevail.

(c) If alternative Proposals are permitted in accordance with **ITP 14**, the alternative Proposals shall be submitted as follows: the original of the alternative Proposal Technical Part shall be placed in a sealed envelope marked "Alternative Proposal – Technical Part" and the Financial Part shall be placed in a sealed envelope marked "Alternative Proposal – Financial Part" and these two separate sealed envelopes then enclosed within a sealed outer envelope marked "Alternative Proposal – Original", the copies of the alternative Proposal will be placed in separate sealed envelopes marked "Alternative Proposal – Copies Of Technical Part", and "Alternative Proposal – Copies Of Financial Part" and enclosed in a separate sealed outer envelope marked "Alternative Proposal - Copies"

22.2 The inner and outer envelopes shall:

(a) bear the name and address of the Proposer;

(b) be addressed to the Employer, at the address given **in the PDS** for **ITP 23.1**; and

(c) bear the Contract(s) name, the Invitation for Proposals (RFP) title and number, as specified **in the PDS** for **ITP 1.1**, and the statement "Do Not Open Before [time and date]," to be completed with the time and date specified **in the PDS** for **ITP 19.1**.

22.3 If the outer envelope is not sealed and marked as required by **ITP 22.1** and **ITP 22.2,** the Employer will assume no responsibility for the Proposal's misplacement or premature opening.

**23. Deadline for Submission of Proposals**

23.1 Proposals must be received by the Employer at the address specified, and no later than the time and date specified, **in the PDS**. Proposers have the option of submitting their Proposals electronically if specified **in the PDS**.

23.2 The Employer may, at its discretion, extend the deadline for submission of Proposals by amending the RFP Documents in accordance with **ITP 8.3**, in which case all rights and obligations

of the Employer and Proposers will thereafter be subject to the deadline as extended.

**24. Late Proposals**

24.1 The Employer shall not consider any Proposal that arrives after the deadline for submission of Proposals, in accordance with **ITP 23.** Any Proposal received by the Employer after the deadline for submission of Proposals shall be declared late, rejected, and returned unopened to the Proposer.

**25. Withdrawal, Substitution, and Modification of Proposals**

25.1 A Proposer may withdraw, substitute, or modify its Proposal after it has been submitted, and before the deadline for submission of Proposals, by sending a written notice, duly signed by an authorized representative, including a copy of the authorization in accordance with **ITP 21.1,** (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Proposal must accompany the respective written notice. All notices must be:

(a) prepared and submitted in accordance with **ITP 21** and **ITP 22** (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked , ("Technical Part" and/or "Financial Part")" "Modification ("Technical Part" and/or "Financial Part");" and

(b) received by the Employer prior to the deadline prescribed for submission of Proposals, in accordance with **ITP 23**.

## E. OPENING OF TECHNICAL PARTS OF PROPOSALS

**26. Opening of Technical Part by Employer**

26.1 Except as in the cases specified in **ITP 24** and **ITP 25**, the Employer shall conduct the Technical part opening in public, in the presence of Proposers` designated representatives and anyone who chooses to attend, and at the address, date and time specified **in the PDS**. Any specific electronic Proposal opening procedures, if permitted, shall be as specified **in the PDS**.

26.2 First, the written notice of withdrawal in the envelopes marked "Withdrawal" shall be opened and read out and the envelope with the corresponding Proposal shall not be opened, but returned to the Proposer. No Proposal withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Proposal opening.

26.3 Next, envelopes marked "Substitution" shall be opened and read out and exchanged with the corresponding Technical Part being substituted, and the substituted Proposal shall not be opened, but returned to the Proposer. No Proposal substitution shall be permitted unless the corresponding substitution notice contains a

valid authorization to request the substitution and is read out at Proposal opening.

26.4 Next, envelopes marked "Modification" shall be opened and read out with the corresponding Proposal. No Proposal modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Proposal opening.

26.5 Next, all other envelopes marked "Technical Part" shall be opened one at a time. All envelopes marked "Financial Part" shall remain sealed and kept by the Employer in safe custody until they are opened at a later public opening, following the evaluation of the Technical Part of the Proposals. On opening the Technical Part envelopes, the Employer shall read out: the name of the Proposer and whether there is a modification; the presence or absence of a Proposal security or a Proposal-Securing Declaration; and other details as the Employer, at its discretion, may consider appropriate.

26.6 Only Technical Parts of Proposals and Alternative Proposal - Technical Parts that are opened and read out at Proposal opening shall be considered further. At the Proposal opening the Employer shall neither discuss the merits of any Proposal nor reject any Proposal (except for late Proposals, in accordance with **ITP 24.1**).

26.7 The Employer shall prepare a record of the Technical Parts of public opening that shall include, as a minimum: the name of the Proposer and whether there is a withdrawal, substitution, or modification. The Proposers' representatives who are present shall be requested to sign the record. The omission of a Proposer's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Proposers who submitted Proposals in time, and posted online when electronic procurement is permitted.

## F. EVALUATION OF PROPOSALS – GENERAL PROVISIONS

**27. Confidentiality**

27.1 Information relating to the evaluation of the Technical Part shall not be disclosed to Proposers or any other persons not officially concerned with the RFP process until the notification of evaluation of the Technical Part in accordance with **ITP 33**.

27.2 Information relating to the evaluation of the Financial Part and recommendation of contract award, shall not be disclosed to Proposers or any other persons not officially concerned with the RFP process until the Notification of Intention to Award the Contract is transmitted to all Proposers in accordance with **ITP 49**.

27.3 Any effort by a Proposer to influence the Employer in the evaluation of the Proposals may result in the rejection of its Proposal.

27.4 Notwithstanding **ITP 27.1 and ITP 27.2**, from the time of Proposal opening to the time of Contract award, if any Proposer wishes to contact the Employer on any matter related to the RFP process, it should do so in writing.

**28. Clarification of Proposals**

28.1 To assist in the examination, evaluation, and comparison of the Proposals, and qualification of the Proposers, the Employer may, at its discretion, ask any Proposer for a clarification of its Proposal. Any clarification submitted by a Proposer that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing.

28.2 If a Proposer does not provide clarifications of its Proposal by the date and time set in the Employer's request for clarification, its Proposal may be rejected.

**29. Deviations, Reservations, and Omissions**

29.1 During the evaluation of Proposals, the following definitions apply:

(a) "Deviation" is a departure from the requirements specified in the RFP document;

(b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the RFP document; and

(c) "Omission" is the failure to submit part or all of the information or documentation required in the RFP document.

## G. EVALUATION OF TECHNICAL PARTS OF PROPOSALS

**30. Determination of Responsiveness of Technical Parts**

30.1 The Employer will examine the Technical Parts, including any alternatives submitted by Proposers, to determine whether they are complete, have been properly signed, and are generally in order.

30.2 The Employer's determination of a Technical Part's substantial responsiveness is to be based on the contents of the Proposal itself. For purposes of this determination, a substantially responsive Proposal is one that materially conforms to the requirements of the RFP Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:

(a) if accepted, would:

(i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

(ii) limit in any substantial way, inconsistent with the RFP Document, the Employer's rights or the Proposer's obligations under the proposed Contract; or

(b) if rectified, would unfairly affect the competitive position of other Proposers presenting substantially responsive Proposals.

30.3 Provided that a Technical Part is substantially responsive, the Employer may waive any nonmaterial nonconformity in the Proposal.

30.4 Provided that a Proposal is substantially responsive, the Employer may request that the Proposer submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Proposal related to documentation requirements...

**31. Evaluation of Technical Proposals**

31.1 The Employer's evaluation of technical proposals will be carried out as specified in Section III, Evaluation and Qualification Criteria.

31.2 The scores and weightings to be given to Rated Criteria (including technical and non-price factors and sub factors) are specified **in the PDS**.

**32. Evaluation of Proposer's Qualification**

32.1 The Employer shall determine to its satisfaction whether the Proposers that have been assessed to have submitted substantially responsive Bids are eligible, and meet the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

32.2 Prior to Contract award, the Employer will verify that the successful Proposer (including each member of a JV) is not disqualified by the Bank due to noncompliance with contractual SEA/SH prevention and response obligations. The Employer will conduct the same verification for each subcontractor proposed by the successful Proposer. If any proposed subcontractor does not meet the requirement, the Employer will require the Proposer to propose a replacement subcontractor.

32.3 Only Proposals that are both substantially responsive to the RFP document and are qualified shall have their envelopes marked "FINANCIAL PART" opened at the second public opening.

**33. Notification of evaluation of Technical Parts**

33.1 Following the completion of the evaluation of the Technical Parts of Proposals, the Employer shall make the following notifications:

(a) Notify in writing those Proposers whose Proposals were considered substantially non-responsive to the requirements in the RFP, advising them of the following information:

(i) the grounds on which their Technical Part has been considered to be non-responsive;

(ii) their envelope marked "Financial Part" will be returned to them unopened after the completion of the Proposal evaluation process and the signing of the Contract;

(b) simultaneously, notify in writing those Proposers whose Proposals were considered substantially responsive to the requirements in the RFP, advising them that their Proposal has been evaluated as substantially responsive to the RFP; and

(c) notify all Proposers in accordance with the one of following two options:

(i) Option 1: when **BAFO or negotiations is not to be applied,** the date, time and location of the public opening of the envelopes marked 'Financial Part", or;

(ii) Option 2: when BAFO or negotiations apply as specified **in the PDS ITP 44** and **ITP 46** respectively, that: (i) the envelopes marked 'Financial Part' will not be opened in public, but in the presence of a Probity Assurance Provider (Probity Auditor) appointed by the Employer, and that (ii) the announcement of the names of the Proposers whose Financial Parts will be opened and the total Proposal prices will be deferred to the time that the Notification of Intention to Award the contract is issued.

## H. OPENING OF FINANCIAL PARTS

**34. Public Opening of Financial Parts when BAFO or negotiations do not apply**

34.1 When BAFO or negotiations do not apply as specified **in the PDS**, the Financial Parts will be opened in public by the Employer in the presence of Proposers, or their designated representatives, and anyone else who chooses to attend. The opening date shall be no less than ten (10) Business Days from the date of notification of the results of the technical evaluation, described in ITP 44.1.

However, if the Employer receives a complaint on the results of the technical evaluation within the ten (10) Business Days, the opening date shall be subject to ITP 55.1. Each envelope marked "Financial Part" shall be inspected to confirm that it has remained sealed and unopened. These envelopes shall then be opened by the Employer. The Employer shall read out the names of each Proposer, the technical score, the total Proposal prices, per lot (contract) if applicable, including any discounts, the presence or absence of a Proposal Security or Proposal-Securing Declaration, if required and any other details as the Employer may consider appropriate. Only discounts read out at the public opening shall be considered for evaluation. The Letter of Proposal - Financial Part and the Price Schedules are to be initialed by representatives of the Employer attending the public opening in the manner specified **in the PDS**.

34.2 The Employer shall prepare a record of the Financial Part of the Proposal opening that shall include, as a minimum:

(a) the name of the Proposers whose Financial Part was opened;

(b) the Proposal prices, per lot (contract) if applicable, including any discounts.

34.3 The Proposers whose envelopes marked "Financial Part" have been opened, or their representatives who are present, shall be requested to sign the record. The omission of a Proposer's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Proposers.

**35. Opening of Financial Parts when BAFO or negotiations apply**

35.1 When, **as specified in the PDS**, BAFO or negotiations apply the Financial Parts will not be opened in public, and will be opened in the presence of a Probity Assurance Provider appointed by the Employer.

35.2 At the opening each of the envelopes marked "Financial Part" shall be inspected to confirm that they have remained sealed and unopened. These envelopes shall then be opened by the Employer. The Employer shall record the names of each Proposer, and the total Proposal prices and any other details as the Employer may consider appropriate. The Letter of Proposal - Financial Part and the Price Schedules are to be initialed by representatives of the Employer attending the public opening and by the Probity Assurance Provider.

35.3 The Employer shall prepare a record of the opening of the Financial Part envelopes that shall include, as a minimum:

(a) the name of the Proposers whose Financial Part was opened;

(b) the Proposal prices including any discounts. And

(c) the Probity Assurance Provider's report of the opening of the Financial Part.

35.4 The Probity Assurance Provider shall sign the record. The contents of the envelopes marked 'Financial Part' and the record of the opening shall be kept in safe custody by the Employer and not disclosed to anyone until the time of the transmission of the Notification of Intention to Award the contract.

## I. EVALUATION OF FINANCIAL PART

**36. Nonmaterial Nonconformities**

36.1 Provided that a Proposal is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Proposal Price. To this effect, the Proposal Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component by adding the average price of the item or component quoted by substantially responsive Proposers. If the price of the item or component cannot be derived from the price of other substantially responsive Proposers, the Employer shall use its best estimate.

**37. Arithmetic Correction**

37.1 The Employer shall correct arithmetical errors on the following basis:

(a) **Schedule of Priced Sub-activities:** where there are errors between the total of the amounts given under the column for Sub-activity Price and the amount given under the total for the Sub-activity, the former shall prevail and the latter will be corrected accordingly;

(b) **Schedule of Priced Activities:** where there are errors between the total of the amounts given under the column for the Activity Price and the amount given under the total price of Activities, the former shall prevail and the latter will be corrected accordingly;

(c) where there are errors between the total of the amounts in the Schedule of **Priced Sub-activities** and the corresponding amount in the Schedule of **Priced Activities** , the former shall prevail and the latter will be corrected accordingly;

(d) **Grand Summary:** where there are errors between the total price of Activities in the Schedule of **Priced Activities** and

the amount given in **Grand Summary**, the former shall prevail and the latter will be corrected accordingly; and

(e) 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 subject to (a) to (d) above.

37.2 A Proposer shall be requested to accept the correction of arithmetical errors. Failure to accept the correction in accordance with **ITP 37.1** shall result in the rejection of the Proposal.

**38. Conversion to Single Currency**

38.1 For evaluation and comparison purposes, the currency (ies) of the Proposal shall be converted into a single currency as specified **in the PDS.**

**39. Margin of Preference**

39.1 Unless otherwise specified **in the PDS,** a margin of preference for domestic Proposers[2] shall not apply.

**40. Evaluation Process Financial Parts**

40.1 To evaluate each Proposal's Financial Part, the Employer shall consider the following:

(a) the Proposal price, excluding provisional sums and the provision, if any, for contingencies in the Schedule of Priced Activities, but including Daywork items, where priced competitively;

(b) price adjustment for correction of arithmetic errors in accordance with **ITP 37.1**;

(c) price adjustment due to discounts offered in accordance with **ITP 15.7**;

(d) price adjustment due to quantifiable nonmaterial nonconformities in accordance with **ITP 36.1**;

(e) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with **ITP 38.1**; and

(f) any additional evaluation factors indicated **in the PDS** and detailed in Section III, Evaluation and Qualification Criteria.

40.2 If price adjustment is allowed in accordance with **ITP 15.5**, the estimated effect of the price adjustment provisions of the

[2] An individual firm is considered a domestic Proposer for purposes of the margin of preference if it is registered in the country of the Employer, has more than 50 percent ownership by nationals of the country of the Employer, and if it does not subcontract more than 10 percent of the contract price, excluding provisional sums, to foreign contractors. JVs are considered as domestic Proposer and eligible for domestic preference only if the individual member firms are registered in the country of the Employer or have more than 50 percent ownership by nationals of the country of the Employer, and the JV shall be registered in the country of the Borrower. The JV shall not subcontract more than 10 percent of the contract price, excluding provisional sums, to foreign firms. JVs between foreign and national firms will not be eligible for domestic preference.

Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Proposal evaluation.

40.3 If this RFP allows Proposers to quote separate prices for different lots (contracts), each lot will be evaluated separately to determine the Most Advantageous Proposal using the methodology specified in Section III, Evaluation and Qualification Criteria. **Discounts that are conditional on the award of more than one lot, or slice shall not be considered for proposal evaluation.**

**41. Abnormally Low Proposals**

41.1 An Abnormally Low Proposal is one where the Proposal price, in combination with other elements of the Proposal, appears so low that it raises material concerns as to the capability of the Proposer to perform the Contract for the offered Proposal Price.

41.2 In the event of identification of a potentially Abnormally Low Proposal, the Employer shall seek written clarifications from the Proposer, including detailed price analyses of its Proposal price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the RFP Document.

41.3 After evaluation of the price analyses, in the event that the Employer determines that the Proposer has failed to demonstrate its capability to perform the Contract for the offered Proposal Price, the Employer shall reject the Proposal.

**42. Unbalanced or Front Loaded Proposals**

42.1 If the Proposal that is evaluated as the lowest evaluated cost is, in the Employer's opinion, seriously unbalanced or front loaded the Employer may require the Proposer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the Proposal prices with the scope of the Works, proposed methodology, schedule and any other requirements of the RFP Document.

42.2 After the evaluation of the information and detailed price analyses presented by the Proposer, the Employer may:

(a) accept the Proposal, or

(b) if appropriate, require that the total amount of the Performance Security be increased, at the expense of the Proposer, to a level not exceeding twenty percent (20%) of the Contract Price; or

(c) reject the Proposal.

## J. EVALUATION OF COMBINED TECHNICAL AND FINANCIAL PART

**43. Evaluation of Combined**

43.1 The Employer's evaluation of responsive Proposals will take into account technical factors, in addition to cost factors in accordance

**Technical and Financial Proposals**

with Section III Evaluation and Qualification Criteria. The weight to be assigned for the Technical factors and cost is specified **in the PDS**. The Employer will rank the proposals based on the evaluated proposal score (B).

**44. Best and Final Offer (BAFO)**

44.1 After completion of the combined technical and financial evaluation of proposals, if **specified in the PDS**, the Employer may invite those Proposers to submit their BAFOs. The procedure for submitting BAFOs will be **specified in the PDS**. BAFO is a final opportunity for Proposers to improve their Proposals without changing the specified business function and performance requirements in accordance with the RFP Document. Proposers are not obliged to submit a BAFO. Where BAFO is used there will be no negotiation after BAFO.

44.2 BAFO will apply a two envelope procurement process. The submission of BAFOs, opening of the Technical Parts and Financial Parts and the evaluation of Proposals will follow the procedures described for the Technical, Financial and Combined evaluation above, as appropriate.

**45. Most Advantageous Proposal (MAP)**

45.1 The Most Advantageous Proposal is the Proposal of the Proposer that meets the Qualification Criteria, and whose Proposal has been determined to be:

(a) substantially responsive to the RFP; and

(b) the best evaluated Proposal i.e. the highest scoring Proposal, in the combined technical and financial evaluation.

**46. Negotiations**

46.1 If specified **in the PDS**, the Employer may conduct negotiations following the evaluation of Proposals and before the final contract award. The procedure of the negotiations will be **specified in the PDS**.

46.2 Negotiations shall be held in the presence of Probity Assurance Provider appointed by the Employer.

46.3 Negotiations may address any aspect of the contract so long as they do not change the specified business function and performance requirements.

46.4 The Employer may negotiate first with the Proposer that has the Most Advantageous Proposal. If the negotiations are unsuccessful the Employer may negotiate with the Proposer that has the next best Most Advantageous Proposal, and so on down the list until a successful negotiated outcome is achieved.

**47. Employer's Right to Accept**

47.1 The Employer reserves the right to accept or reject any Proposal, and to annul the RFP process and reject all Proposals at any time

**Any Proposal, and to Reject Any or All Proposals**

prior to contract award, without thereby incurring any liability to Proposers. In case of annulment, all Proposals submitted and specifically, Proposal securities shall be promptly returned to the Proposers.

**48. Standstill Period**

48.1 The Contract shall not be awarded earlier than the expiry of the Standstill Period. The Standstill Period shall be ten (10) Business Days unless extended in accordance with **ITP 52**. The Standstill Period commences the day after the date the Employer has transmitted to each Proposer (that has not already been notified that it has been unsuccessful) the Notification of Intention to Award the Contract. Where only one Proposal is submitted, or if this contract is in response to an emergency situation recognized by the Bank, the Standstill Period shall not apply.

**49. Notification of Intention to Award**

49.1 The Employer shall send to each Proposer (that has not already been notified that it has been unsuccessful) the Notification of Intention to Award the Contract to the successful Proposer. The Notification of Intention to Award shall contain, at a minimum, the following information:

(a) the name and address of the Proposer submitting the successful Proposal;

(b) the Contract price of the successful Proposal;

(c) the total combined score of the successful Proposal;

(d) the names of all Proposers who submitted Proposals, and their Proposal prices as readout and as evaluated prices and technical score;

(e) a statement of the reason(s) the Proposal (of the unsuccessful Proposer to whom the notice is addressed) was unsuccessful;

(f) the expiry date of the Standstill Period; and

(g) instructions on how to request a debriefing or submit a complaint during the standstill period.

## K. AWARD OF CONTRACT

**50. Award Criteria**

50.1 Subject to **ITP 47.1**, the Employer shall award the Contract to the Proposer with the Most Advantageous Proposal, provided that the Proposer is determined to be eligible and qualified to perform the Contract satisfactorily.

**51. Notification of Award**

51.1 Prior to the date of expiry of the Proposal validity, and upon expiry of the Standstill Period, specified in **ITP 48.1** or any extension thereof, and upon satisfactorily addressing any complaint that has been filed within the Standstill Period, the Employer shall notify the

successful Proposer, in writing, that its Proposal has been accepted. The notification of award (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Contractor in consideration of the execution of the Contract (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").

51.2 Within ten (10) Business days from the transmission of the Letter of Acceptance, the Employer shall publish the Contract Award Notice which shall contain, at a minimum, the following information:

(a) name and address of the Employer;

(b) name and reference number of the contract being awarded, and the selection method used;

(c) names of all Proposers that submitted Proposals, and their Proposal prices as read out at Proposal opening, and as evaluated;

(d) name of Proposers whose Proposals were rejected and the reasons for their rejection;

(e) the name of the successful Proposer, the final total contract price, the contract duration and a summary of its scope; and

(f) successful Proposer's Beneficial Ownership Disclosure Form**.**

51.3 The Contract Award Notice shall be published on the Employer's website with free access if available, or in at least one newspaper of national circulation in the Employer's Country, or in the official gazette.

51.4 Until a formal contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

**52. Debriefing by the Employer**

52.1 On receipt of the Borrower's Notification of Intention to Award referred to in **ITP 49**, an unsuccessful Proposer has three (3) Business Days to make a written request to the Employer for a debriefing. The Employer shall provide a debriefing to all unsuccessful Proposers whose request is received within this deadline.

52.2 Where a request for debriefing is received within the deadline, the Employer shall provide a debriefing within five (5) Business Days, unless the Employer decides, for justifiable reasons, to provide the debriefing outside this timeframe. In that case, the standstill period shall automatically be extended until five (5) Business Days after such debriefing is provided. If more than one debriefing is so delayed, the standstill period shall not end earlier than five (5) Business Days after the last debriefing takes place. The Employer

shall promptly inform, by the quickest means available, all Proposers of the extended standstill period.

52.3 Where a request for debriefing is received by the Employer later than the three (3)-Business Day deadline, the Employer should provide the debriefing as soon as practicable, and normally no later than fifteen (15) Business Days from the date of publication of Public Notice of Award of contract. Requests for debriefing received outside the three (3)-day deadline shall not lead to extension of the standstill period.

52.4 Debriefings of unsuccessful Proposers may be done in writing or verbally. The Proposer shall bear their own costs of attending such a debriefing meeting.

**53. Signing of Contract**

53.1 The Employer shall send to the successful Proposer the Letter of Acceptance including the Contract Agreement, and a request to submit the Beneficial Ownership Disclosure Form providing additional information on its beneficial ownership. The Beneficial Ownership Disclosure Form shall be submitted within eight (8) Business Days of receiving this request.

53.2 The successful Proposer shall sign, date and return to the Employer, the Contract Agreement within twenty-eight (28) days of its receipt.

**54. Performance Security**

54.1 Within twenty-eight (28) days of the receipt of the Letter of Acceptance from the Employer, the successful Proposer shall furnish the Performance Security and if required **in the PDS**, the Environmental and Social (ES) Performance Security, in accordance with the General Conditions, subject to **ITP 42.2 (b),** using the Performance Security and ES Performance Security Forms included in Section X, Contract Forms, or another form acceptable to the Employer. If the performance security furnished by the successful Proposer is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Proposer to be acceptable to the Employer. A foreign institution providing a bond shall have a correspondent financial institution located in the Employer's Country, unless the Employer has agreed in writing that a correspondent financial institution is not required.

54.2 Failure of the successful Proposer to submit the above-mentioned Performance Security and if required **in the PDS**, the Environmental and Social (ES) Performance Security, or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Proposal security. In that event the Employer may award the Contract to the Proposer with the next Most Advantageous Proposal.

**55. Procurement Related Complaint**

55.1 The procedures for making a Procurement-related Complaint are as specified **in the PDS**.

# SECTION II - PROPOSAL DATA SHEET (PDS)

The following specific data for the proposed Works shall complement, supplement, or amend the provisions in the Instructions to Proposers (ITP). Whenever there is a conflict, the provisions herein shall prevail over those in ITP.

| ITP Reference | A. General |
|---|---|
| **ITP 1.1** | The reference number of the Request for Proposals is: AYGM-INRAIL-2025-YAP 01/1-2-3-4<br><br>The Employer is: Ministry of Transport and Infrastructure, Directorate General of Infrastructure Investments<br><br>The name of the RFP is: Design and Construction of Infrastructure & Superstructure Works including electricfication, with four Lots (Lot-1, Lot-2, Lot-3, Lot-4), under İstanbul North Rail Crossing Project<br><br>The number and identification of lots (contracts) comprising this RFP is:<br><br>Lot 1- Construction and Electrification Works for Çayırova – Sabiha Gökçen Airport – Kurtdoğmuş Corridor<br><br>Lot 2- Construction and Electrification Works for Kurtdoğmuş - Alibahadır Corridor<br><br>Lot 3- Construction and Electrification Works for Alibahadır - YSS Bridge - Mithatpaşa Corridor<br><br>Lot 4- Construction and Electrification Works for Mithatpaşa - İstanbul Airport - Çatalca Corridor<br><br>Proposer may bid for one or more lots. Evaluation of bids and contract award will be lot-wise. |
| **ITP 2.1** | The Borrower is: Republic of Türkiye - Ministry of Treasury and Finance where Employer is Ministry of Transport and Infrastructure - General Directorate of Infrastructure Investments (GDII) |
| **ITP 2.1** | Loan or Financing Agreement amount: Multiple financing agreements with international financial institutions, led by the World Bank, with a total estimated project cost of approximately US$ 8.1 billion, including financing from the World Bank, the Asian Infrastructure Investment Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, the Islamic Development Bank, and the OPEC Fund for International Development, as well as counterpart funding from the Government of Türkiye.<br><br>The name of the Project is: Istanbul North Rail Crossing Project (INRAIL) |

| | |
|---|---|
| **ITP 4.1** | Maximum number of members in the JV shall be: 4 (four) |
| **ITP 4.5** | A list of debarred firms and individuals is available on the Bank's external website: http://www.worldbank.org/debarr. |
| **B. RFP Document** | |
| **ITP 7.1** | For **Clarification of Proposal purposes** only, the Employer's address is:<br>Attention: **Serkan UÇAR**<br>Address: **Hakkı Turayliç Caddesi No:5**<br>Floor/ Room number*:* **Floor 6, Room 616**<br>City: **Ankara**<br>ZIP Code: **06500**<br>Country: **Türkiye**<br>Telephone: +90 312 203 17<br>Electronic mail address: irfan.kurnaz@uab.gov.tr<br>Requests for clarification should be received by the Employer no later than: **14 (fourteen) days** |
| **ITP 7.1** | Web page: https://aygm.uab.gov.tr/ihaleler |
| **ITP 7.4** | A Pre-Proposal meeting will take place at the following date, time and place:<br>Date: 01.09.2026<br>Time: 10:30<br>Place: The Pre-Proposal meeting shall be both physical as well as online meeting. The virtual meeting details will be shared at least 7 (seven) calendar days before the pre-proposal meeting date with prospective proposers who purchased the bidding document.<br>**A site visit will be organized in conjunction with the Pre-Proposal Meeting.**<br>Prospective Proposers are strongly advised to attend the site visit in order to familiarize themselves with the site conditions, access constraints, interfaces, and other factors that may affect the preparation of their Proposals.<br>Failure to attend the Pre-Proposal Meeting or the site visit shall not be a cause for disqualification; however, Proposers shall be deemed to have obtained all information necessary for the preparation of their Proposals. |
| **C. Preparation of Proposals** | |

| | |
|---|---|
| **ITP 11.1** | The language of the Proposal is: English<br>All correspondence exchange shall be in English language.<br>Language for translation of supporting documents and printed literature is English. |
| **ITP 12.2(i)** | And add the following texts at the end of para (i):<br>Joint Venture Arrangements shall have the following Provisions:<br>i. Joint Venture Agreement shall nominate a lead member who will lead and bind the joint venture agreement and will have the authority to conduct all business for and on behalf of any and all members of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution,<br>ii. Lead member shall have lead/ principal share in the joint venture,<br>iii. The Joint Venture Agreement should specify the scope and part of the contract to be carried out by each Joint Venture member. The assigned scope and parts of contract should correspond to the member's respective experience and capacity to implement them; and<br><br>The Joint Venture agreement includes the clause: "Joint and Several Liability: All members of the joint venture (JV) shall be jointly and severally liable to the Employer for the execution of the entire Contract. The JV leader shall have the authority to bind the JV. Neither the composition, the constitution, and the legal status nor the scope and parts of the Contract to be carried out by each member, as specified in the Joint Venture Agreement, shall be altered without the prior consent of the Employer. Such consent shall not relieve any altered JV from the joint and several liability to the Employer for the execution of the entire Contract." |
| **ITP 12.2(k)** | The Proposer shall submit as part of its Technical Part the following additional documents:<br>**Code of Conduct for Contractor's Personnel (ESHS)**<br>The Proposer shall submit its Code of Conduct that will apply to Contractor's Personnel (as defined in Sub-Clause 1.1.16 of the General Conditions), to ensure compliance with the Contractor's Environmental, Social, Health and Safety (ESHS) obligations under the Contract.<br>The Proposer shall use, for this purpose, the Code of Conduct form provided in Section IV. No substantial modifications shall be made to this form, except that the Proposer may introduce additional requirements, as necessary, to take into account specific Contract issues/risks.<br>In addition, the Proposer shall detail how the Code of Conduct will be implemented. This shall include how it will be introduced into the conditions of employment/engagement, what training will be provided, how compliance will be monitored and how the Contractor proposes to address any breaches.<br>The Contractor shall be required to implement the agreed Code of Conduct throughout the Contract period. |

| | |
|---|---|
| | **Management Strategies and Implementation Plans (MSIPs) to manage the ESHS risks and impacts**<br><br>The Proposer shall submit Management Strategies and Implementation Plans (MSIPs) describing its proposed approach to managing the key Environmental, Social, Health and Safety (ESHS) risks and impacts associated with the design and construction of the Works. The purpose of the MSIPs is to demonstrate, at proposal stage, that the Proposer has understood the Project's key ESHS risks and has the necessary technical approach, organization, staffing and implementation capacity to manage such risks in accordance with the Contract requirements.<br><br>The MSIPs shall be prepared by the Proposer in line with, at minimum, the World Bank Environmental and Social Framework (ESF), the Project's Environmental, Social, Health and Safety (ESHS) requirements identified in the "Environmental and Social Requirements" section under "Part 2 - Employer's Requirements", applicable national legislation, Good International Industry Practice (GIIP), and the Environmental and Social instruments disclosed and made publicly available through the official Project disclosure channel (the Employer's website): https://aygm.uab.gov.tr/istanbul-kuzey-demiryolu-gecisi-projesi.<br><br>Considering the Design and Build nature of the Contract, the MSIPs submitted at proposal stage shall be framework-level documents. They shall demonstrate the Proposer's understanding of the Project's ESHS risks and impacts, proposed management approach, ESHS organization and staffing, monitoring and reporting arrangements, and how ESHS requirements will be integrated into detailed design, construction planning, mobilization, subcontractor management and construction implementation. The MSIPs shall also explain the Proposer's methodology for identifying, assessing, avoiding, minimizing, mitigating, monitoring and reporting ESHS risks and impacts during both design and construction stages.<br><br>Besides,<br><br>The Proposer shall prepare the following documents based on information given under "Technical Proposal" in Section IV-Bidding Forms and submit them with his Proposal:<br><br>(i) Site Organization (Project and Construction Management Chart)<br><br>(ii) Method Statement<br><br>(iii) Mobilization Schedule<br><br>(iv) Construction Schedule<br><br>(v) Draft Project Quality Plan<br><br>All pages of the Proposal, including all supporting documents, shall be provided in a logical sequence and each page shall be numbered. To facilitate the Employer's evaluation process, the Proposer shall provide an Index/ Table of |

| | |
|---|---|
| | Contents that describes the contents of the Proposal and the relevant page numbers. |
| **ITP 12.3 (e)** | The Proposer shall submit with its Proposal the following additional documents:<br>The priced Price Schedules must additionally be submitted digitally on CD/USB Memory and enclosed in the envelope containing Financial Proposal. If material financial information related to the Proposal price is contained in the Technical Part, the Proposal shall be declared non-responsive. In case of conflict between the printed and digital copy, the printed copy shall prevail.<br>***Unit prices must be entered up to two decimal digits.*** |
| **ITP 14.1** | Alternative Proposals shall not be considered. |
| **ITP 15.1** | (a) Proposers shall propose for all components of the Works on a single responsibility basis: These include all requirements under the Contractor's responsibilities for testing and commissioning of the works executed including integrated testing and commissioning, the acquisition of all permits, approvals and bidding licenses, etc.; the operation, maintenance and such other items and services as may be specified in the Bidding Documents. |
| **ITP 15.3** | The prices quoted by the Proposer shall be subject to adjustment during the performance of the Contracts. |
| **ITP 15.8** | Existing text is deleted and replaced with the following revised text:<br>All duties, taxes (excluding VAT), and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of Proposals , shall be included in the Proposal Price submitted by the Proposer. Bid Evaluation will be based on the Proposal Price (excluding VAT) submitted by the Proposer. The VAT amount based on applicable rate of the Government prevailing at the time will be added by Employer and included in the contract price. |
| **ITP 16.1** | The currency(ies) of the Proposal and the payment currency(ies) shall be in accordance with Alternative A as described below:<br>**Alternative A (Proposers to quote entirely in local currency):**<br>(a) The prices shall be quoted by the Proposer in the Schedules of Priced Activities and Sub-activities entirely in **Turkish Lira** and further referred to as "the local currency". A Proposer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country (referred to as "the foreign currency requirements") shall indicate in the Appendix to Proposal - Table C, the percentage(s) of the Proposal Price (excluding Provisional Sums), needed by the Proposer |

| | |
|---|---|
| | for the payment of such foreign currency requirements, limited to no more than three foreign currencies.<br>(b) The rates of exchange to be used by the Proposer in arriving at the local currency equivalent and the percentage(s) mentioned in (a) above shall be specified by the Proposer in the Appendix to Proposal - Table C, and shall apply for all payments under the Contract so that no exchange risk will be borne by the successful Proposer. |
| **ITP 17.3** | At this time the Employer **does not *intend*** to execute certain specific parts of the Works by subcontractors selected in advance. |
| **ITP 17.4** | (a) Contractor's proposed subcontracting: Maximum percentage of subcontracting permitted is:<br>30% of the total contract amount.<br>(b) Proposers proposing to subcontract shall specify in Section IV- Proposal Forms, the activity(ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualifications. |
| **ITP 17.5** | The parts of the Works for which the Employer permits Proposers to propose Specialized Subcontractors are designated as follows:<br>a. Line Laying<br>b. Ballast Paving<br>c. Rail Welding<br>d. Cabling<br>e. Ground Improvement<br>f. Reinforced Concrete Works<br>g. Earthworks<br>h. Construction of Bridge |
| **ITP 18.2 (d)** | ITP 18.2 (d) **applies** |
| **ITP 19** | A Proposal Security **shall be** required.<br>The amount and currency of the Proposal Security shall be:<br>For Lot 1: USD 5,000,000 (Five Million US Dollar) or equivalent ,<br>For Lot 2: USD 2,800,000 (Two Million Eight Hundred Thousand US Dollar) or equivalent,<br>For Lot 3: USD 2,800,000 (Two Million Eight Hundred Thousand US Dollar) or equivalent,<br>For Lot 4: USD 5,000,000 (Five Million US Dollar) or equivalent<br>The exchange rate to be applied in conversion of the Proposal Security amount shall be the Selling Exchange rates officially published by the Central Bank of Turkey (Döviz Satış) at 03.30 p.m. (Turkey Time) on the applicable date |

| | |
|---|---|
| | (http://www.tcmb.gov.tr). The applicable date for the exchange rates shall be the date twenty-eight (28) days prior to the date of Proposal Opening except when the date falls on an official holiday including Saturdays and Sundays in which case the applicable date shall be the last working day before twenty-eight (28) days prior to the date of Proposal Opening.<br><br>Exchange rates can be obtained from http://www.tcmb.gov.tr.<br><br>Proposal Security is required for each lot as per amounts indicated against each lot. If a Proposer submits Proposals for multiple lots, a separate Proposal Security should be submitted for each lot. .<br><br>The Proposal Security shall only be in the form of an unconditional and irrevocable bank guarantee issued by a reputable Bank. The written letter confirming the validity of the Proposal Security from the issued Bank shall be provided.<br><br>An irrevocable letter of credit or a cashier's or certified check shall not be accepted as Proposal Security. |
| **ITP 19.3** | The Proposal Security shall only be in the form of an **unconditional and irrevocable bank guarantee** issued by a reputable Bank. The written letter confirming the validity of the Proposal Security from the issued Bank shall be provided.<br><br>An irrevocable letter of credit or a cashier's or certified check **shall not be accepted** as Proposal Security. |
| **ITP 19.3 (d)** | Other types of acceptable securities: ***N/A*** |
| **ITP 20.1** | The Proposal shall be valid until 06.02.2027 |
| **ITP 20.3** | Not Applicable. |
| **ITP 21.1** | The written confirmation of authorization to sign on behalf of the Proposer shall consist of:<br><br>a. The name and description of the documentation required to demonstrate the authority of the signatory to sign the Proposal such as a Power of Attorney; and<br>b. Copies of original documents indicating the Proposer's establishment, legal status, place of registration and headquarters<br>c. In the case of Proposals submitted by an existing or intended JV, an undertaking signed by all parties (i) stating that all parties shall be jointly and severally liable, and (ii) nominating a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution. |

| D. Submission of Proposals | |
|---|---|
| **ITP 22.1(b)** | In addition to the original of the Proposal, the number of copies is as follows:<br>The number of copies of the Technical Part is: 2 (two) hard copies and 1 (one) digital copy in pdf with searchable format in a flash disk (USB).<br>The number of copies of the Financial Part is: 2 (two) hard copies and 1 (one) digital copy in pdf with searchable format in a flash disk (USB).<br>Copies of the Technical Part shall be placed in a separate sealed envelope marked "Copies: Technical Part". Copies of the Financial Part shall be placed in a separate sealed envelope marked "Copies: Financial Part". The Proposer shall place both of these envelopes in a separate, sealed outer envelope marked "Proposal - Copies". In the event of any discrepancy between the original and the copies, the original shall prevail. |
| **ITP 23.1** | For **Proposal submission purposes** only, the Employer's address is :<br>Attention: **General Directorate of Infrastructure Investments - *Serkan UÇAR, Head of Railways Construction Department***<br>**irfan.kurnaz@uab.gov.tr , Telephone: +90 312 203 17 40**<br>Street Address: **Hakkı Turayliç Caddesi No:5/B, Emek**<br>Floor/Room number: **Floor 6, Room 616**<br>City: **Ankara**<br>ZIP Code: **06500**<br>Country: **Republic of Türkiye**<br>**The deadline for Proposal submission is:**<br>Date: ***14 October 2026***<br>Time: ***14:30 (Ankara Time)*** |
| **ITP 23.1** | Proposers shall not have the option of submitting their Proposals electronically. |
| **E. Opening of Technical Parts of Proposals** | |
| **ITP 26.1** | The Proposal opening shall take place at:<br>Street Address: **General Directorate of Infrastructure Investments Hakkı Turayliç Caddesi No:5/B, Emek**<br>Floor/Room number: **Floor Z, Conference Room** |

| | |
|---|---|
| | City: **Ankara**<br>Country: **Republic of Türkiye**<br>Date: 14 October 2026<br>Time: 14:45 (Ankara Time) |
| **G. Evaluation of Technical Parts of Proposals** | |
| **ITP 31.2** | The weighting to be given for Rated Criteria (including technical and non-price factors) is: 70%<br>The applicable technical factors and sub-factors and the corresponding scores out of 100% are given in Section III |
| **H. Opening of Financial Parts** | |
| **ITP 34.1** | The Letter of Proposal and Price Schedules shall be initialed by all representatives of the Employer conducting Proposal opening. ***Each Financial Proposal shall be numbered and any modification to the unit or total price shall be initialed by the Representative of the Employer***. |
| **I. Evaluation of Financial Part** | |
| **ITP 38.1** | The currency that shall be used for Proposal evaluation and comparison purposes to convert, at the **selling exchange rate**, all Proposal prices expressed in various currencies into a single currency is: **Turkish Lira**<br>The source of exchange rate shall be: **the Central Bank of Republic of Türkiye**<br>The date for the exchange rate shall be the deadline for submission of Proposals as specified in **ITP 23**, unless otherwise specified by the Employer.<br>The currency(ies) of the Proposal shall be converted into a single currency in accordance with the procedure under **Alternative A** that follows:<br>***Alternative A: Proposers quote entirely in local currency***<br>For comparison of Proposals, the Proposal Price, corrected pursuant to **ITP 37.1,** shall first be broken down into the respective amounts payable in various currencies by using the selling exchange rates specified by the Proposer in accordance with **ITP 16.1.**<br>In the second step, the Employer will convert the amounts in various currencies in which the Proposal Price is payable (excluding Provisional Sums but including Daywork where priced competitively) to the single currency identified above at the selling rates established for similar transactions by the authority specified and on the date stipulated above. |

| | |
|---|---|
| **ITP 39.1** | A margin of domestic preference shall not apply. |
| **ITP 40.1 (f)** | Evaluation factors are indicated in Section III Evalaution and Qualification Criteria. No additional evaluation factors shall be applied. |
| **J. Evaluation of Combined Technical and Financial Part** | |
| **ITP 43.1** | The weight to be given for cost is: %30 |
| **ITP 44.1** | BAFO does not apply |
| **ITP 46.1** | Negotiation does not apply |
| **ITP 49.1 (b)** | The following text is added:<br>The contract price shall include Value Added Tax (VAT) determined in accordance with the VAT rate prevailing at the time of Notification of Intention to Award. The breakdown of the contract price inclusive and exclusive of VAT shall also be provided. |
| **K. Award of Contract** | |
| **ITP 54.1 and 54.2** | The successful Proposer shall be required to submit an Environmental and Social (ES) Performance Security. |
| **ITP 55.1** | The procedures for making a Procurement-related Complaint are detailed in the "Procurement Regulations for IPF Borrowers (Annex III)." If a Proposer wishes to make a Procurement-related Complaint, the Proposer shall submit its complaint following these procedures, In Writing (by the quickest means available, such as by email or fax), to:<br>**For the attention**: *Serkan UÇAR*<br>**Title/position**: *Head of Railways Construction Department*<br>**Employer:** *General Directorate of Infrastructure Investments*<br>**Email address***: irfan.kurnaz@uab.gov.tr*<br>A copy of the complaint can be sent for the Bank's information and monitoring to: **pprocurementcomplaints@worldbank.org**<br>In summary, a Procurement-related Complaint may challenge any of the following:<br>**1.** the terms of this RFP document; |

| | |
|---|---|
| | **2.** the Employer's decision to exclude a Proposer from the procurement process prior to the award of contract; and<br>**3.** the Employer's decision to award the contract. |

# SECTION III. EVALUATION AND QUALIFICATION CRITERIA

## Contents

**A. Technical Part ..... 48**
1. Qualification ..... 48
2. Evaluation of Technical Part (ITP 31) ..... 60

**B. Financial Part ..... 68**
1. Margin of Preference ..... 68
2. Evaluation of Financial Part (ITP 40.1(f) ) ..... 68
3. Combined Evaluation ..... 68
4. Multiple Contracts (ITP 40.3) ..... 69

# Section III - Evaluation and Qualification Criteria *(Without Initial Selection)*

This section contains all the criteria that the Employer shall use to evaluate Proposals and qualify Proposers. No other factors, methods or criteria shall be used other than specified in this RFP document. The Proposer shall provide all the information requested in the forms included in Section IV, Proposal Forms.

Wherever a Proposer is required to state a monetary amount, Proposers should indicate the USD equivalent using the rate of exchange determined as follows:

- For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year are to be converted) was originally established.

- The monetary value of the past contract references will be calculated with the following approach:

**For contracts denominated in United States Dollars (USD):**

The contract price at contract signing date shall be updated to present value using the U.S. Bureau of Labor Statistics (BLS) Producer Price Index (PPI): Final Demand (Series ID: WPUFD4), based on the index value applicable 14 days prior to the bid submission deadline.

**For contracts denominated in other currencies:**

• The contract price shall first be converted into United States Dollars (USD) using the exchange rate applicable on the contract signing date.

• The amount converted into USD shall then be updated to present value using the U.S. Bureau of Labor Statistics (BLS) Producer Price Index (PPI): Final Demand (Series ID: WPUFD4), based on the index value applicable 14 days prior to the bid submission deadline.

The official source of the (exchange) rate is selling rate published on the website of the Central Bank Republic of Turkiye (http://www.tcmb.gov.tr). Any error in determining the exchange rates in the Proposal may be corrected by the Employer.

# A. Technical Part

## 1. Qualification

### 1.1 Updated Information

The Proposer's qualification shall be assessed in accordance with the Qualification table included in this section.

### 1.2 Subcontractors

Only the Specialized Subcontractors as approved by the Employer will be considered. The Proposer shall provide in Section IV, Proposal Forms the relevant details of all proposed subcontractors.

### 1.3 Financial Resources

Using the relevant Form No FIN 3.1 in Section IV, Proposal Forms, the Proposer must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet the overall cash flow requirements for this Contract and its current Works commitment.

### 1.4 Contractor's Representative and Key Personnel

The Proposer must demonstrate that it will have a suitably qualified Contractor's Representative and suitably qualified (and in adequate numbers) minimum Key Personnel, as listed below and described in the Employer's Requirements.

Note: If the Proposer submits proposals for multiple lots, it must propose separate teams of key personnel for each lot. Specifically, for each of the below listed key personnel positions different persons should be proposed for the multiple lots , such that the same person is not common in the multiple lots.

# Contractor's Representative and Key Personnel

| Item No | Position | No. of persons required for each position | Relevant Academic Qualifications | Minimum years of relevant experience in similar works and overall professional experience |
|---|---|---|---|---|
| 1 | Project Manager (Contractor's Representative) | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 10 years of relevant project management experience, including as Project Manager of two contracts for construction of railway systems (including metro, light rail, tram, funiculars, etc.), using FIDIC Yellow, or FIDIC Gold Book Conditions of Contract, and 15 years overall professional experience |
| 2 | Civil Works Deputy Project Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 8 years relevant project management experience, including as Deputy Project Manager/Senior role in two contracts for construction of railway systems, using FIDIC Yellow, or FIDIC Gold Book Conditions of Contract, and 12 years overall professional experience |
| 3 | Electro-mechanical Works Deputy Project Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Electrical or Electronics or Electrical & Electronics or Mechanical Engineering | 5 years relevant electro-mechanical construction experience and 10 years overall professional experience |
| 4 | Chief Resident Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant experience and 10 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| | | Lot 4 :1 | | |
| 5 | Topographical Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Survey or Topographical Engineering | 5 years relevant experience in Survey or Topographical Engineering and 10 years overall professional experience |
| 6 | Electrical Works Engineers | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Electrical or Electronics or Electrical & Electronics | 5 years relevant experience and 10 years overall professional experience |
| 7 | Mechanical Works Engineers | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Mechanical Engineering | 5 years relevant experience and 10 years overall professional experience |
| 8 | Architect | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Architecture | 5 years relevant architectural experience and 10 years overall professional experience |
| 9 | Geotechnical Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering MSc. in Geotechnical Engineering | 5 years relevant geotechnical engineering experience and 10 years overall professional experience |
| 10 | Environmental and Social Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1 | Bachelor's degree in environmental engineering, social sciences, or related discipline | 10 years relevant Environmental and Social experience in construction of large works, and 15 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| | | Lot 4 :1 | | |
| 11 | Environmental Specialists | Lot 1 :2<br>Lot 2 :2<br>Lot 3 :2<br>Lot 4 :2 | Bachelor's Degree in Environmental Engineering | 8 years relevant Environmental experience in construction of large works, and 12 years overall professional experience |
| 12 | Social Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :2<br>Lot 4 :2 | Bachelor's Degree in social sciences, sociology, anthropology, law, development studies, or related discipline; | 8 years relevant Social experience in construction of large works, and 12 years overall professional experience |
| 13 | Resettlement and Livelihood Restoration Specialists | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :2 | Bachelor's degree in Law, urban planning, economics, social sciences, or related field | 5 years relevant resettlement experience and 10 years overall professional experience |
| 14 | OHS Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in engineering | Valid OHS certification (from any country)<br>10 years relevant OHS experience in construction of large works contracts, SIF prevention protocols for tunnelling, and 15 years overall professional experience |
| 15 | OHS Engineer / Site Safety Engineer | Lot 1 :2<br>Lot 2 :2<br>Lot 3 :2<br>Lot 4 :2 | Bachelor's degree in engineering or technical discipline | 5 years relevant OHS/Site Safety experience and 10 years overall professional experience |
| 16 | OHS Documentation / Reporting Specialist | Lot 1 :1 | Bachelor's degree in occupational health and safety, | 5 years relevant OHS Documentation/Reporting experience and 10 years |

| | | | | |
|---|---|---|---|---|
| | | Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | engineering or a related technical discipline | overall professional experience |
| 17 | Community Liaison Officer | Lot 1 :2<br>Lot 2 :2<br>Lot 3 :2<br>Lot 4 :2 | Bachelor's degree in sociology, social sciences, communication, public relations, law, social work, psychology, anthropology, political science, international relations, or a related discipline | 5 years relevant community Liaison experience and 10 years overall professional experience |
| 18 | Biodiversity & Ecology Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :2<br>Lot 4 :1 | Bachelor's degree in biology, ecology, environmental engineering, environmental sciences, forestry, wildlife management, or a related discipline | 5 years relevant biodiversity & Ecology experience and 10 years overall professional experience |
| 19 | Archaeologist / Cultural Heritage Expert | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :2 | Bachelor's degree in archaeology or related discipline | 5 years relevant Archaeology/cultural heritage experience and 10 years overall professional experience |
| 20 | Gender and SEA/SH Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in social sciences, sociology, anthropology, law, development studies, or related discipline | 5 years relevant Gender and SEA/SH experience and 10 years overall professional experience |
| 21 | Legal Expert | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1 | Bachelor's degree in in law | 5 years relevant legal experience and 10 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| | | Lot 4 :1 | | |
| 22 | Valuation Expert | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in real estate valuation, economics, civil engineering, agricultural economics, law or related discipline | 5 years relevant valuation experience and 10 years overall professional experience |
| 23 | Labor Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in social science such in human resources, law, sociology, social sciences or related discipline | 5 years relevant Labor experience and 10 years overall professional experience |
| 24 | Design Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Engineering | 10 years relevant design management experience in railway infrastructure projects under Design & Build contracts and 15 years overall professional experience |
| 25 | Lead Structural Designer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 8 years relevant structural design experience in railway or large infrastructure projects and 12 years overall professional experience |
| 26 | Railway Alignment & Track Designer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant railway alignment and track design experience and 10 years overall professional experience |
| 27 | Hydraulic / Drainage Designer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1 | Bachelor's Degree in Civil or Environmental Engineering | 5 years relevant hydraulic/hydrology or drainage design experience in infrastructure projects and 10 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| | | Lot 4 :1 | | |
| 28 | Railway Safety Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Engineering | 8 years relevant railway safety management experience coordination and 12 years overall professional experience |
| 29 | QA/QC Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Engineering | 8 years relevant QA/QC management experience in large infrastructure projects and 12 years overall professional experience |
| 30 | System Integration Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Electrical and/or Electronics | 8 years relevant systems integration experience in railway projects and 12 years overall professional experience |
| 31 | BIM Expert | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Engineering, Architecture or related discipline | 5 years relevant BIM management and coordination experience in large infrastructure projects and 10 years overall professional experience |
| 32 | TBM Expert | Lot 1 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant TBM tunnelling experience in metro or railway tunnel projects and 10 years overall professional experience |
| 33 | NATM Tunnel Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3:1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant NATM tunnel construction/design experience and 10 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| 34 | Geologist | Lot 1 :1<br>Lot 2 :1<br>Lot 3:1<br>Lot 4 :1 | Bachelor's Degree in Geological Engineering | 5 years relevant geological investigation and tunnel geology experience and 10 years overall professional experience |
| 35 | Tunnel Monitoring Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3:1<br>Lot 4 :1 | Bachelor's Degree in Civil, Geological or Geotechnical Engineering | 5 years relevant tunnel monitoring experience and 10 years overall professional experience |
| 36 | Underground Station Design Engineer | Lot 1 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering or Architecture | 5 years relevant underground station design experience in railway/metro projects and 10 years overall professional experience |
| 37 | Rail-on-Bridge Structural Specialist | Lot 3 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant bridge structural engineering experience including railway bridge systems and 10 years overall professional experience |
| 38 | Wind / Structural Dynamics Engineer | Lot 3 :1 | Bachelor's Degree in Civil Engineering | 3 years relevant wind engineering and structural dynamics experience for long-span bridges and 10 years overall professional experience |
| 39 | Structural Health Monitoring Engineer | Lot 3 :1 | Bachelor's Degree in Civil Engineering | 3 years relevant structural health monitoring systems experience for bridges or major structures and 10 years overall professional experience |
| 40 | Marine Environmental Specialist | Lot 3 :1 | Bachelor's Degree in Environmental Engineering | 3 years relevant marine environmental management experience in coastal or marine infrastructure projects |

| | | | | |
|---|---|---|---|---|
| | | | | and 10 years overall professional experience |
| 41 | Specialized OCS Design Engineer for Long-Span Bridge Conditions | Lot 3 :1 | Bachelor's Degree in Electrical and/or Electronical Engineering | 3 years relevant OCS design experience for railway systems including bridge applications and 10 years overall professional experience |
| 42 | Cut-and-Cover Specialist | Lot 2 :1<br>Lot 3:1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 3 years relevant cut-and-cover tunnel construction/design experience and 10 years overall professional experience |
| 43 | Airport Interface Coordinator | Lot 4 :1 | Bachelor's Degree in Engineering, Aviation Management or related discipline | 3 years relevant coordination experience in airport operational environments and 10 years overall professional experience |

The Proposer shall provide details of the Contractor's Representative and Key Personnel and such other Key Personnel that the Proposer considers appropriate, together with their academic qualifications and work experience. The Proposer shall complete the relevant Forms in Section IV, Proposal Forms.

If any of the Key Personnel proposed by the Proposer is determined by the Employer not meeting the specified requirements, the Employer reserves the right to require the Proposer to replace such key personnel with the fully qualified and experienced key personnel prior to contract award, if awarded to the Proposer.

### 1.5 Equipment

The Proposer must demonstrate that it has access to the key equipment listed hereafter:

Lot-wise minimum equipment requirements are provided below:

Note: If the Proposer submits proposals for multiple lots, it must propose separate equipment for each lot. Specifically, for each of the below listed equipment different equipment should be proposed for the multiple lots , such that the same equipment is not common in the multiple lots.

LOT-1

| No. | Equipment Type and Characteristics | Minimum Number required |
|---|---|---|
| 1 | Tunnel Boring Machine (TBM) | 2 |
| 2 | Drill Jumbo for NATM Works | 2 |
| 3 | Shotcrete Robot | 2 |
| 4 | Excavator (min 35 Ton) | 8 |
| 5 | Articulated Dump Truck (min 30 Ton Payload) | 15 |
| 6 | Crawler Crane (min 100 Ton) | 2 |
| 7 | Concrete Batching Plant | 1 |
| 8 | Rail Track Laying Machine | 1 |
| 9 | Tamping Machine | 1 |

LOT-2

| No. | Equipment Type and Characteristics | Minimum Number required |
|---|---|---|
| 1 | Drill Jumbo for NATM Works | 3 |
| 2 | Shotcrete Robot | 3 |
| 3 | Excavator (min 35 Ton) | 10 |
| 4 | Articulated Dump Truck (min 30 Ton Payload) | 18 |
| 5 | Crawler Crane (min 100 Ton) | 3 |
| 6 | Cut-and-Cover Excavation Support Equipment | 2 |
| 7 | Concrete Batching Plant | 1 |
| 8 | Rail Track Laying Machine | 1 |
| 9 | Tamping Machine | 1 |

LOT-3

| No. | Equipment Type and Characteristics | Minimum Number required |
|---|---|---|
| 1 | Drill Jumbo for NATM Works | 2 |
| 2 | Excavator (min 35 Ton) | 8 |
| 3 | Articulated Dump Truck (min 30 Ton Payload) | 12 |
| 4 | Heavy Crawler Crane (min 250 Ton) | 2 |
| 5 | Structural Health Monitoring System | 1 |
| 6 | Specialized OCS Installation Equipment | 1 |
| 7 | Bridge Erection Equipment | 1 |
| 8 | Rail Track Laying Machine | 1 |
| 9 | Tamping Machine | 1 |

LOT-4

| No. | Equipment Type and Characteristics | Minimum Number required |
|---|---|---|
| 1 | Tunnel Boring Machine (TBM) | 2 |
| 2 | Drill Jumbo for NATM Works | 3 |
| 3 | Shotcrete Robot | 3 |
| 4 | Excavator (min 35 Ton) | 10 |
| 5 | Articulated Dump Truck (min 30 Ton Payload) | 18 |
| 6 | Heavy Crawler Crane (min 150 Ton) | 3 |
| 7 | Cut-and-Cover Excavation Support Equipment | 2 |
| 8 | Concrete Batching Plant | 1 |
| 9 | Rail Track Laying Machine | 1 |
| 10 | Tamping Machine | 1 |

If any of the key equipment proposed by the Proposer is determined by the Employer not meeting the specified characteristics, the Employer reserves the right

to require the Proposer to replace such key equipment with the key equipment that meets the specified characteristics prior to contract award, if awarded to the Proposer.

The Proposer shall provide its strategy for acquiring and maintaining the key equipment that may be needed to execute the Works in accordance with the Work Program.

The Proposer shall provide details in the relevant Form in Section IV.

# 2. Evaluation of Technical Part (ITP 31)

Assessment of adequacy of Technical Proposal with Requirements in accordance with ITP 31.1:

The Rated Criteria (including technical and non-price factors, and sub factors if any) to be evaluated and the scores to be given to each factor and sub factor are specified below.The same Rated Criteria will be applied to each of the Lots for assessing the adequacy of the Technical Proposal against the requirements of the respective Lot.

***Factor 1: Methodology & Work Approach (20 points)***

| *No* | *Subfactors* | *Maximum Points* |
|---|---|---|
| *1.1* | **Quality of Requirements Traceability & Performance Alignment**<br>1.1.1 Depth of mapping between work items and specification performance targets (2 points)<br>1.1.2 Measurability of acceptance criteria defined for each traceable item (2 points)<br>1.1.3 Robustness of gap and conflict identification and resolution logic requirements. (2 points) | *6* |
| *1.2* | **Integrated Interface Management & Collaborative Synergy Strategy**<br>1.2.1. Comprehensiveness of interface identification across civil-systems, construction-design, and contractor-contractor boundaries. (2 points)<br>1.2.2 Quality and active management of Interface Control Documents (ICDs) as living documents rather than static deliverables. (2 points)<br>1.2.3. Robustness of escalation protocols and resolution timelines. (1 point)<br>1.2.4. Frequency and structure of interface review meetings. (1 point) | *6* |
| *1.3* | **Construction Approach and Operational Methodology Adequacy**<br>1.3.1. Site-specificity of proposed construction sequences for TBM, NATM, and major structures relative to geotechnical conditions. (1 point)<br>1.3.2. Definition and risk basis of pre-production quality gates and hold/witness points. (1 point)<br>1.3.3. Integration of method statements with Inspection and Test Plans (ITPs). (1 point)<br>1.3.4.Clarity of acceptance criteria and verification mechanisms for each construction phase. (1 point) | *4* |
| *1.4* | **Systems Integration Logic & Commissioning Readiness Framework** | *4* |

| | | |
|---|---|---|
| | 1.4.1 Logical sequencing between civil works completion and systems integration testing phases. (1 point)<br>1.4.2. Clarity and measurability of go/no-go criteria for each commissioning stage. (1 point)<br>1.4.3.Alignment of the commissioning strategy with the overall construction programme. (1 point)<br>1.4.4. Quality of verification and validation procedures and test matrices. (1 point) | |

***Factor 2: Work Program & Mobilization & Logistics (10 points)***

| *No* | *Subfactors* | *Maximum Points* |
|---|---|---|
| *2.1* | **Schedule Robustness & Critical Path Optimization Strategy***:*<br>2.1.1. Realism of activity durations and sequencing relative to site and geotechnical/weather constraints. (1 point)<br>2.1.2. Treatment of interface dependencies and risk buffers within the critical path. (1 point)<br>2.1.3. Quality of recovery logic for anticipated delay scenarios. (1 point)<br>2.1.4. Degree to which the schedule reflects a genuine understanding of the project's critical path beyond format compliance. (1 point) | *4* |
| *2.2* | **Resource Mobilization & Cash-Flow Planning Quality***:*<br>2.2.1. Coherence between peak resource demand and mobilization timeline. (0,75 point)<br>2.2.2. Realism of cash-flow projections relative to payment schedule activities. (0,75 point)<br>2.2.3. Evidence of resource-cash flow alignment management on prior comparable projects. (0,50 point) | *2* |
| *2.3* | **Operational Readiness & Mobilization Strategy**<br>*2.3.1.* Specificity of timelines for plant, machinery, and personnel deployment. (0,75 point)<br>2.3.2. Credibility of permit and facility readiness assumptions. (0,75 point)<br>2.3.3. Evidence of the bidder's track record in achieving mobilization targets on comparable contracts. (0,50 point) | *2* |
| *2.4* | **Supply Chain Resilience & Site Logistics Optimization**<br>2.4.1. Identification and management approach for long-lead procurement items. (0,75 point)<br>2.4.2 Credibility of site access and materials flow plans. (0,75 point)<br>2.4.3. Degree to which the strategy accounts for supply chain risks specific to the project location and scope. (0,50 point) | *2* |

***Factor 3: Similar Work Experience (18 points)***

| *No* | *Subfactors* | *Maximum Points* |
|---|---|---|
| *3.1* | ***For Similar project ≥ 80% completion, demonstrating:***<br>3.1.1 The extent to which the referenced projects exceed the scale and technical complexity of the civil and tunnelling works of the INRAIL project (tunnel length, NATM/TBM methods, viaduct complexity, geohazards, terrain challenges). (3 points)<br>3.1.2 Diversity of geotechnical conditions managed across referenced projects. (3 points) | *6* |
| *3.2* | **Multi-System Railway Integration & Operational Reliability Success**<br>3.2.1. Evidence of multi-system integration delivery (trackwork, electrification, and signaling) on contracts of comparable scale and interface complexity. (2 points)<br>3.2.2. Commissioning outcomes and interface management performance on referenced projects, as evidenced through RAMS KPIs, FAT/SAT/SIT completion records, or client references. (1 point)<br>3.2.3. Experience with EU interoperability requirements, including engagement with Assessment Bodies (AsBo) (1 point)<br>3.2.4. Notified Bodies (NOBO) for subsystem certification. (1 point)<br>3.2.5. Experience managing delivery in live or operationally constrained railway environments. (1 point) | *6* |
| ***3.3*** | **Transport Integration & Coordination**<br><br>3.3.1. Experience in contracts involving interfaces between different types of transport infrastructure encompassing integration or coordination with terminal/stations or road networks (3 points).<br>3.3.2. Experience managing delivery within live or operationally constrained environments — including operational transport infrastructure — where works must be phased, sequenced, or isolated to avoid disruption to ongoing operations. (3 points) | *6* |

***Factor 4: Organization & Key Personnel (10 points)***

| *No* | *Subfactors* | *Maximum Points* |
|---|---|---|
| *4.1* | **Leadership Excellence in Technical Coordination & Delivery**<br>4.1.1. Evidence of multidisciplinary coordination leadership in the corridor-scale rail or infrastructure projects. (2 points)<br>4.1.2 Track record in managing civil-systems interfaces under time and geotechnical pressure. (1 point)<br>4.1.3 Credibility of the proposed decision-making role within the organizational structure. (1 point)<br>4.1.4 Quality and specificity of the substitution and succession plan for key leadership roles. (1 point) | *5* |
| *4.2* | **Specialized Expert Competence & Value-Added Human Capital**<br>4.2.1 Breadth of specialist expertise relevant to the project's technical complexity. (0,75 point)<br>4.2.2 Degree to which competencies complement and reinforce leadership roles. (0,75 point)<br>4.2.3 Robustness of substitution planning beyond the minimum required roster. (0,50 point) | *2* |
| *4.3* | **Organizational Efficiency & Decision-Making Framework**<br>4.3.1 Clarity and coherence of the reporting chain across civil, systems, design, and ESHS functions. (1 point)<br>4.3.2 Robustness of the RACI matrix in unambiguously assigning decision-making authority across key processes — design, construction, QA, and ESHS — without creating reporting bottlenecks. (1 point)<br>4.3.3 Capacity of the organizational structure to manage cross-lot coordination and multi-contractor interfaces. (0,5 point)<br>4.3.4 Quality of the shift and substitution plan in ensuring personnel continuity under attrition or absence scenarios. (0,5 point) | *3* |

***Factor 5: Quality Assurance (QA/QC) & OHS/Environment/ESHS (including Road Safety) (12 points)***

| *No* | *Subfactor* | *Maximum Score* |
|---|---|---|
| *5.1* | **Quality Management Excellence & Precision Delivery Standards**<br>5.1.1 Robustness of acceptance criteria and definition of hold/witness points. (2 points)<br>5.1.2 Effectiveness and clarity of the nonconformity and CAPA process. (1 point)<br>5.1.3 Degree to which the QA/QC plan is integrated with construction sequencing and ITP activities. (1 point) | *5* |

| | | |
|---|---|---|
| | 5.1.4 Evidence of QA/QC performance track record on comparable projects. (1 point) | |
| *5.2* | **Occupational Health & Safety Leadership & Risk Prevention**<br>5.2.1 Specificity of SIF prevention risk assessments for tunnelling and confined-space operations. (0,5 point)<br>5.2.2. Resourcing of OHS oversight (dedicated personnel and budget). (0,5 point)<br>5.2.3 Evidence of the bidder's LTIFR on comparable projects. (0,5 point)<br>5.2.4 Depth of worker OHS training and induction programme (0,5 point) | *2* |
| *5.3* | **Environmental management**<br>5.3.1. Specificity of monitoring indicators for noise, dust, vibration, and air quality. (0,4 point)<br>5.3.2. Clarity of corrective-action thresholds and escalation protocols. (0,4 point)<br>5.3.3. Robustness of SEA/SH protocols. (0,4 point)<br>5.3.4. Degree to which environmental commitments are resourced and integrated with construction phasing. (0,4 point)<br>5.3.5. Past implementation evidence. (0,4 point) | *2* |
| *5.4* | **Biodiversity & habitat continuity (IFC PS6 compliance)**<br>5.4.1. Specificity of habitat assessment and mitigation measures beyond IFC PS6 minimum compliance. (1 point)<br>5.4.2. Integration of biodiversity commitments with construction scheduling (e.g., seasonal restrictions, buffer zones). (1 point)<br>5.4.3 Evidence of comparable biodiversity management on infrastructure projects. (1 point) | *3* |

***Factor 6: Risk Management & Value Engineering / Innovation (12 points)***

| *No* | *Subfactors* | *Maximum Points* |
|---|---|---|
| *6.1* | **Proactive Risk Intelligence & Lifecycle Mitigation Logic**<br>6.1.1. Robustness of probability/impact quantification methodology. (1 point)<br>6.1.2. Clarity of risk ownership assignment tied to measurable triggers. (1 point)<br>6.1.3. Quality of the process for monitoring and updating the risk register throughout the programme. (0,5 point)<br>6.1.4.Degree to which the methodology goes beyond a static formatted document. (0,5 point) | *3* |
| *6.2* | **Performance-Driven Mitigation & Outcome Assurance Monitoring**<br>6.2.1 Specificity and credibility of preventive measures for top-ranked risks. (1 point)<br>6.2.2Quality of monitoring indicators and escalation protocols for each mitigation measure. (1 point) | *3* |

| | | |
|---|---|---|
| | 6.2.3.Evidence of outcome-driven mitigation on comparable projects. (1 point) | |
| *6.3* | **Supply chain resilience and business continuity**<br>6.3.1. Identification of critical single-source supply dependencies. (1 point)<br>6.3.2. Availability and qualification status of alternative suppliers for critical materials. (0,5 point)<br>6.3.3. Credibility of critical spares and contingency stocking plans for long-lead items. (0,5 point) | *2* |
| *6.4* | **Net Value of Engineering & Project Optimization Innovation**<br>6.4.1.Technical credibility of the claimed benefit and the clarity of the implementation pathway. (1 point)<br>6.4.2. Degree to which the proposal represents genuine innovation beyond standard practice. (1 point)<br>6.4.3.Evidence of successful value engineering implementation on comparable contracts. (1 point)<br>6.4.4. Verifiability and measurability of the claimed benefit (time, safety, durability, operations & maintenance improvements, and carbon reduction). (1 point) | *4* |

***Factor 7: Sustainable Procurement (10 points)***

| *No* | *Subfactors* | *Maximum Points* |
|---|---|---|
| *7.1* | **Circular Economy Strategy & Resource Life-Cycle Optimization**<br>7.1.1. Realism and verifiability of reuse/recycling target percentages. (2 points)<br>7.1.2. Robustness of verification and reporting protocols. (1 point)<br>7.1.3. Evidence of the bidder's track record in achieving comparable circular resource targets on prior projects (1 point) | *4* |
| *7.2.* | **Energy efficiency & carbon reduction**<br>7.2.1. Evidence that a construction site energy management plan has been prepared and is operational. (0,5 point)<br>7.2.2. Identification of low-carbon equipment and solutions proposed, with corresponding reduction estimates quantified (scope 1). (1 point)<br>7.2.3. Establishment of carbon reduction targets, a defined baseline against which those targets are measured, and a precise monitoring methodology (scope 2). (1 point)<br>7.2.4. Implementation of an energy/carbon reporting scheme ensuring continuous tracking and quantitative assessment of reductions against the baseline. (0,5 point) | *3* |
| *7.3* | **Waste management (including hazardous waste)**<br>7.3.1. Specificity of separate collection and tracking protocols for hazardous and non-hazardous waste streams. (1 point)<br>7.3.2. Credibility and auditability of the hazardous waste tracking system. (1 point) | *3* |

| | | |
|---|---|---|
| | 7.3.3 Evidence of waste management compliance performance on comparable projects. (1 point) | |

***Factor 8: Social Aspects & Local Economic Impact (8 points)***

| *No* | *Subfactors* | *Maximum Points* |
|---|---|---|
| *8.1* | **Social Standard Leadership & Workforce Welfare**<br>8.1.1 Depth and frequency of labor compliance monitoring. (1 point)<br>8.1.2 Resourcing (staff, budget) dedicated to labor standards enforcement. (1 point)<br>8.1.3 Effectiveness of subcontractor control mechanisms. (1 point)<br>8.1.4 Use of early-warning indicators and corrective actions. (1 point)<br>8.1.5 Evidence of workforce management performance on comparable labor-intensive contracts. (1 point) | *5* |
| *8.2* | **Local economy & inclusive employment/training**<br>8.2.1. Targets for engaging local subcontractors and suppliers. (1 point)<br>8.2.2 Targets for employment of women, youth, and persons with disabilities on-site. (1 point)<br>8.2.3. Credibility of the implementation plan and monitoring mechanisms. (0,5 point)<br>8.2.4. Reporting obligations and frequency of local employment reporting (0,5 point) | *3* |

***TECHINICAL PROPOSAL SCORING METHOLOGY***

| Score (of the total score for the factor/subfactor as applicable | Description | Remarks |
|---|---|---|
| 0 | Required feature is absent; no relevant information to demonstrate how the requirement is met | |
| 1 | Required feature present with deficiencies such as insufficient or information that lacks clarity | |
| 2 | Sufficient information to demonstrate how the requirement will be met | |
| 3 | Sufficient information to demonstrate that the requirement will be marginally exceeded | |
| 4 | Sufficient information that significantly exceed the requirement/proposal contributes to significant value addition | |

The score for each sub- factor (i) within a factor (j) will be combined with the scores of sub- factors in the same factor as a weighted sum to form the Factor Technical Score using the following formula:

$$S_j \equiv \sum_{i=1}^{k} t_{ji} * w_{ji}$$

where:

$t_{ji}$ = the technical score for sub- factor "i" in factor "j"

$w_{ji}$ = the weight of sub- factor "i" in factor "j",

$k$ = the number of scored sub-factors in factor "j"

and $\sum_{i=1}^{k} w_{ji} = 1$

(f) The Factor Technical Scores will be combined in a weighted sum to form the total Technical Proposal Score using the following formula:

$$T \equiv \sum_{j=1}^{n} S_j * W_j$$

where:

$S_j$ = the Factor Technical Score of factor "j"

$W_j$ = the weight of factor "j" as specified **in the PDS**

$n$ = the number of Factors

$$\text{and } \sum_{j=1}^{n} W_j = 1$$

# B. Financial Part

## 1. Margin of Preference

***Not applicable***

## 2. Evaluation of Financial Part (ITP 40.1(f) )

The following factors and methods will apply:

**(a) Time Schedule**

Time for completion of the Works from the Commencment Date shall be as specified in the Particular Conditions Part A-Contract Data Sub-clause 1.1.86. No credit will be given for earlier completion.

**(b) Life Cycle Costs**

*Life cycle costing shall not apply.*

**(c) Sustainable Procurement**

*Not applicable*

## 3. Combined Evaluation

The Employer will evaluate and compare the Proposals that have been determined to be substantially responsive.

An Evaluated Proposal Score (B) will be calculated for each responsive Proposal using the following formula, which permits a comprehensive assessment of the evaluated cost and the technical merits of each Proposal:

`

$$B = \frac{C_{low}}{C} * X * 100 + \frac{T}{T_{high}} * (1 - X) * 100$$

where

$C$ = Evaluated Proposal Cost

$C_{low}$ = the lowest of all Evaluated Proposal Cost among responsive Proposals

$T$ = the total Technical Score awarded to the Proposal

$T_{high}$ = the Technical Score achieved by the Proposal that was scored best among all responsive Proposals

$X$ = weight for Cost as specified **in the PDS**

The Proposal with the best evaluated Proposal Score (B) among responsive Proposals shall be the Most Advantageous Proposal provided the Proposer is qualified to perform the Contract.

## 4. Multiple Contracts (ITP 40.3)

In accordance with **ITP 1.1**, Proposals are invited for one or more than one lots, the contract will be awarded to the Proposer or Proposers with the Most Advanageous Proposal for the individual lots.

However, if a Proposer, with Proposals that are substantially responsive and with highest evaluated score for individual lots, is not qualified for the combination of the lots, then the award will be made based on the highest total score for combination of lots for which Proposers are qualified.

**Cross discounts for award of multiple lots will not be considered.**

Qualification Criteria for Multiple Contracts

The criteria for qualification are the aggregate (cumulative sum of) minimum requirement for respective lots as specified under items 3.1 (financial capability), 3.2 (average annual construction turnover), 4.2(a) (Specific Construction & Contract Management Experience) and 4.2(b) (Key Activities) of Section III. With respect to the specific experience under item 4.2(a), minimum requirements for combined contract(s) shall be the aggregate requirements for each lot for which the Proposer has bid, and the Proposer's referenced contracts for each lot shall be different.

# A. Qualification

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| **1. Eligibility** | | | | | | | |
| **1.1** | **Nationality** | Nationality in accordance with ITP 4.4 | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Forms ELI – 1.1 and 1.2, with attachments |
| **1.2** | **Conflict of Interest** | No conflicts of interest in accordance with ITP 4.2 | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Letter of Proposal |
| **1.3** | **Bank Eligibility** | Not having been declared ineligible by the Bank, as described in ITP 4.5. | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Letter of Proposal |
| **1.4** | **State- owned Enterprise or Institution of the Borrower country** | Meets conditions of ITP 4.6 | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Forms ELI – 1.1 and 1.2, with attachments |
| **1.5** | **United Nations resolution or Borrower's country law** | Not having been excluded as a result of prohibition in the Borrower's country laws or official regulations against commercial relations with the Proposer's country, or by an act of compliance with UN Security Council resolution, both in accordance with ITP 4.8 and Section V. | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Forms ELI – 1.1 and 1.2, with attachments |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| **2. Historical Contract Non-Performance** | | | | | | | |
| **2.1** | **History of Non-Performing Contracts** | Non-performance of a contract[1] did not occur as a result of contractor default since 1st January 2020. | Must meet requirement | Must meet requirements | Must meet requirement[2] | N/A | Form CON-2 |
| **2.2** | **Suspension Based on Execution of Bid/Proposal Securing Declaration by the Employer** | Not under suspension based on-execution of a Bid/Proposal Securing Declaration pursuant to ITP 4.7 and ITP 19.9 | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Letter of Proposal |
| **2.3** | **Pending Litigation** | Proposer's financial position and prospective long-term profitability still sound according to criteria established in 3.1 below and assuming that all pending litigation will be resolved against the Proposer | Must meet requirement | N/A | Must meet requirement | N/A | Form CON – 2 |
| **2.4** | **Litigation History** | No consistent history of court/arbitral award decisions | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Form CON – 2 |

1 Nonperformance, as decided by the Employer, shall include all contracts where (a) nonperformance 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. Nonperformance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Nonperformance 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 Proposer have been exhausted.

2 This requirement also applies to contracts executed by the Proposer as JV member.

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | against the Proposer[3] since 1st January 2020 | | | | | |
| 2.5 | **Declaration: Environmental and Social (ES) past performance** | Declare any civil work contracts that have been suspended or terminated and/or performance security called by an employer for reasons of breach of environmental, or social (including Sexual Exploitation, and Abuse) contractual obligations in the past five years.[4] | Must make the declaration. Where there are Specialized Subcontractor/s, the Specialized Subcontractor/s must also make the declaration. | N/A | Each must make the declaration. Where there are Specialized Subcontractor/s, the Specialized Subcontractor/s must also make the declaration. | N/A | Form CON-3 ES Performance Declaration |
| 2.6 | **Bank's SEA and/or SH Disqualification** | At the time of Contract Award, not subject to disqualification by the Bank for non-compliance with SEA/ SH obligations | Must meet requirement (including each subcontractor proposed by the Proposer) | N/A | Must meet requirement (including each subcontractor proposed by the Proposer) | N/A | Letter of Proposal, Form CON-4 |
| | | If the Proposer had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations, the Proposer | Must meet requirement (including each | N/A | Must meet requirement (including each | N/A | Letter of Proposal, Form CON-4 |

[3] The Proposer shall provide accurate information on the related Bid Form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last five years. A consistent history of awards against the Proposer or any member of a joint venture may result in failure of the Bid.

[4] The Employer may use this information to seek further information or clarifications in carrying out its due diligence.

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | shall either (i) provide evidence of an arbitral award on the disqualification made in its favour; or (ii) demonstrate that it has adequate capacity and commitment to comply with SEA/SH prevention and response obligations; or (iii) provide evidence that it has already demonstrated such capacity and commitment on another Bank financed works contract. | subcontractor proposed by the Proposer) | | subcontractor proposed by the Proposer) | | |
| **3. Financial Situation and Performance** | | | | | | | |
| **3.1** | **Financial Capabilities** | (i) The Proposer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as<br><br>For Lot 1: USD122,000,000 (one hundred twenty-two million USD)<br>For Lot 2: USD 68,000,000 (Sixty-Eight million USD | Must meet requirement | Must meet requirement | N/A | N/A | Form FIN – 3.1, with attachments |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | For Lot 3: USD 65,000,000 (sixty-five million USD)<br>For Lot 4: USD117,000,000 (one hundred seventeen USD) for the subject contract(s) net of the Proposer's other commitments | | | | | |
| | | (ii) The Proposers shall also demonstrate, to the satisfaction of the Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments. | Must meet requirement | Must meet requirement | N/A | N/A | |
| | | (iii) The audited balance sheets or, if not required by the laws of the Proposer's country, other financial statements acceptable to the Employer, for the **last *5* years** (2021, 2022, 2023, 2024 and 2025) shall be submitted and must demonstrate the current soundness of the Proposer's financial position and indicate its prospective long-term profitability. | Must meet requirement | N/A | Must meet requirement | N/A | |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| **3.2** | **Average Annual Construction Turnover** | Minimum average annual construction turnover of<br>For Lot 1: USD 732,000,000 (*Seven Hundred Thirty-Two million* USD)<br>For Lot 2: USD 410,000,000 (*Four hundred Ten million* USD)<br>For Lot 3: USD 390,000,000 (*Three Hundred Ninety million* USD)<br>For Lot 4: USD 704,000,000 (Seven *hundred Four million* USD), calculated as total certified payments received for contracts in progress and/or completed within the last *5* years (2021, 2022, 2023, 2024 and 2025), divided by *5* years. | Must meet requirement | Must meet requirement | Must meet *20* % (twenty) of the requirement | Must meet *50* % (fifty percent) of the requirement | Form FIN – 3.2 |
| **4. Experience** | | | | | | | |
| **4.1 (a)** | **General Construction Experience** | Experience of more than 15 (fifteen) years prior to the bid submission deadline under any type of construction contracts in the role of prime contractor, JV member, Subcontractor, or management contractor | Must meet requirement | N/A | Must meet requirement | N/A | Form EXP – 4.1 |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| **4.2 (a)** | **Specific Construction & Contract Management Experience** | (i) A minimum number of similar contract(s) specified below have been satisfactorily and substantially[5] completed as a prime contractor, joint venture member[6], management contractor or Subcontractor between **1st January 2011** and bid submission deadline.<br><br>Similar contracts are defined as contracts for the construction of linear transport projects involving:<br>**(a)** Infrastructure works — including, inter alia, earthworks, tunneling, bridges, and viaducts — carried out under contracts for light rail, metro, mainline railway, or highway projects; AND<br>**(b)** Railway superstructure works — including, inter alia, tracklaying, ballasting (or slab construction), rail welding, | Must meet requirement | Must meet requirement[7] | N/A | N/A | Form EXP 4.2(a) |

5 Substantial completion shall be based on 80% or more works completed under the contract.

6 For contracts under which the Proposer participated as a joint venture member or Subcontractor, only the Proposer shall be considered to meet this requirement.

7 In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | fastening installation, turnout assembly and electrification—carried out under contracts for light rail, metro, and/or mainline railway projects.<br><br>Both (a) and (b) must be demonstrated. They may be evidenced by the same contract or by separate contracts, provided that all contracts submitted fall within the value thresholds specified below. | | | | | |
| | | **For Lot 1:**<br>1 (one) contract of minimum value **USD 950,000,000 (Nine hundred Fifty million)** or equivalent; **OR** maximum of three contracts having total aggregate value of at least **USD950,000,000** or equivalent, provided that each contract is not less than **USD190,000,000** or equivalent. | Must meet requirement | Must meet requirement | N/A | N/A | |
| | | **For Lot 2:**<br>1 (one) contract of minimum value **USD 530,000,000 (Five** | Must meet requirement | Must meet requirement | N/A | N/A | |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | **hundred Thirty million)** or equivalent;<br>**OR** maximum of three contracts having total aggregate value of at least **USD 530,000,000** or equivalent, provided that each contract is not less than **USD 106,000,000** or equivalent. | | | | | |
| | | **For Lot 3:**<br>1 (one) contract of minimum value **USD 500,000,000 (Five hundred million)** or equivalent; **OR** maximum of three contracts having total aggregate value of at least **USD 500,000,000 (Five hundred million)** or equivalent, provided that each contract is not less than **USD 100,000,000** or equivalent. | Must meet requirement | Must meet requirement | N/A | N/A | |
| | | **For Lot 4:**<br>1 (one) contract of minimum value **USD 900,000,000 (Nine hundred million)** or equivalent; **OR** maximum of three contracts having total aggregate value of at least **USD 900,000,000** or equivalent, | Must meet requirement | Must meet requirement | N/A | N/A | |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | provided that each contract is not less than **USD180,000,000** or equivalent. | | | | | |
| **4.2 (b)** | | **For Lot 1**:<br><br>For the above and any other contracts substantially completed and under implementation as prime contractor, joint venture member, or Subcontractor between 1st January 2011 and Proposal submission deadline, a minimum construction experience[8] in the following key activities successfully completed[9]:<br><br>-Experience in the **design of railway systems** (including tunnels) with a route length of at least 20 km, under a single contract.<br><br>and | Must meet requirements | Must meet requirements | N/A | N/A | Form EXP – 4.2 (b) |

8 If the past contract references submitted under this clause have been completed as a joint venture, the work completion quantities attributable to each joint venture partner shall be calculated in proportion to their respective participation (shareholding) ratios.

9 Volume, number, or rate of production of any key activity can be demonstrated in one or more contracts combined if executed during same time period.

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | -Experience in the **construction of a 20 km (single-bore) TBM tunne**l for transportation purposes, under a single contract.<br>and<br><br>-Experience in the **construction of railway line** with a route length **of at least 20km** under a single contract.<br><br>**For Lot 2:**<br><br>For the above and any other contracts substantially completed and under implementation as prime contractor, joint venture member, or Subcontractor between 1st January 2011 and Proposal submission deadline, a minimum construction experience[10] in the following key activities successfully completed[11]: | | | | | |

[10] If the past contract references submitted under this clause have been completed as a joint venture, the work completion quantities attributable to each joint venture partner shall be calculated in proportion to their respective participation (shareholding) ratios.

[11] Volume, number, or rate of production of any key activity can be demonstrated in one or more contracts combined if executed during same time period.

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | -Experience in the **design of railway systems** (including tunnels) with a route length of at least 20 km, under a single contract.<br>and<br><br>- Experience in the construction of at least **5 km of NATM** tunnels for transportation purposes, under a single contract.<br>and<br><br>- Experience in the **construction of viaducts or bridges** with a total length of ≥ 2 km, under a single contract.<br>and<br><br>-Experience in the construction **of railway line** with a route length of at least **20 km** under a single contract.<br><br>**For Lot 3:**<br>For the above and any other contracts substantially completed and under | | | | | |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | implementation as prime contractor, joint venture member, or Subcontractor between 1st January 2011 and Proposal submission deadline, a minimum construction experience[12] in the following key activities successfully completed[13]:<br><br>-Experience in the **design of railway systems** (including tunnels) with a route length of at least 20 km, under a single contract.<br>and<br><br>- Experience in the construction of at least 3 km of **NATM** tunnels for transportation purposes, under a single contract.<br>and<br><br>- Experience in the construction of **viaducts or bridges** with a | | | | | |

12 If the past contract references submitted under this clause have been completed as a joint venture, the work completion quantities attributable to each joint venture partner shall be calculated in proportion to their respective participation (shareholding) ratios.

13 Volume, number, or rate of production of any key activity can be demonstrated in one or more contracts combined if executed during same time period.

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | total length of ≥ 5 km, under a single contract.<br>and<br><br>-Experience in the construction of railway line with a route length of at least 20 km., under a single contract.<br><br>-Additionally, for Lot 3, The Contractor shall demonstrate specific experience in works on cable-stayed and/or suspension bridges, involving at least one of the following:<br>**(a)** Installation or erection of a bridge deck or superstructure (road, rail, or combined) on a cable-stayed and/or suspension bridge, including staged or incremental loading procedures;<br>**(b)** Cable adjustment, re-tensioning, replacement, or monitoring on a cable-stayed and/or suspension bridge under live or construction loading conditions;<br>**(c)** Structural load testing of a cable-stayed and/or suspension bridge, including real-time | | | | | |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | monitoring of cable forces and/or deck geometry.<br><br>**For Lot 4:**<br><br>For the above and any other contracts substantially completed and under implementation as prime contractor, joint venture member, or Subcontractor between 1st January 2011 and Proposal submission deadline, a minimum construction experience[14] in the following key activities successfully completed[15]:<br><br>-Experience in the **design of railway systems** (including tunnels) with a route length of at least 20 km, under a single contract.<br>and | | | | | |

[14] If the past contract references submitted under this clause have been completed as a joint venture, the work completion quantities attributable to each joint venture partner shall be calculated in proportion to their respective participation (shareholding) ratios.

[15] Volume, number, or rate of production of any key activity can be demonstrated in one or more contracts combined if executed during same time period.

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | -Experience in the construction of a **10 km (single-bore) TBM** tunnel for transportation purposes, under a single contract.<br>and<br><br>- Experience in the construction of **viaducts or bridges** with a total length of ≥ 2 km, under a single contract.<br>and<br><br>-Experience in the construction of a railway line (including tunnel) with a route length of at least **25 km,** under a single contract. | | | | | |
| **4.2 (c)** | **Specific Experience in managing ES aspects** | For the contracts in 4.2 (a) above and/or any other contracts substantially completed and under implementation as prime contractor, joint venture member, or Subcontractor between **1st January 2011** and Proposal submission deadline, experience in managing the following ES risks and impacts and any | Must meet requirements | Must meet requirement | : N/A | *N/A* | Form EXP – 4.2 (c) |

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | | Documentation |
|---|---|---|---|---|---|---|---|
| No. | Subject | Requirement | Single Entity | Joint Venture (existing or intended) | | | Submission Requirements |
| | | | | All Members Combined | Each Member | One Member | |
| | | additional sustainable procurement aspects:<br>**For each Lot:**<br>Implementing environmental and social management plan in at least one similar contract, which should be supported by the employer's letter confirming satisfactory completion. | | | | | |

# SECTION IV - PROPOSAL FORMS

# Table of Forms

**Proposal Forms** ..... Hata! Yer işareti tanımlanmamış.
Letter of Proposal - Technical Part ..... **Hata! Yer işareti tanımlanmamış.**
Letter of Proposal - Financial Part ..... **Hata! Yer işareti tanımlanmamış.**
Appendix to Proposal ..... **Hata! Yer işareti tanımlanmamış.**
Schedule of Cost Indexation ..... **Hata! Yer işareti tanımlanmamış.**
Table of Adjustment Data ..... **Hata! Yer işareti tanımlanmamış.**
Table A. Local Currency ..... **Hata! Yer işareti tanımlanmamış.**
Table B. Foreign Currency (FC) ..... **Hata! Yer işareti tanımlanmamış.**
Table C. Summary of Payment Currencies ..... **Hata! Yer işareti tanımlanmamış.**
Schedule of Priced Activities and Sub-activities ..... 102
Sample Schedule of Priced Activities Table ..... **Hata! Yer işareti tanımlanmamış.**
Sample Schedule of Priced Sub-activities Table ..... **Hata! Yer işareti tanımlanmamış.**
Daywork Schedule ..... **Hata! Yer işareti tanımlanmamış.**
Schedule of Daywork Rates: 1. Labor ..... **Hata! Yer işareti tanımlanmamış.**
Schedule of Daywork Rates: 2. Materials ..... **Hata! Yer işareti tanımlanmamış.**
Schedule of Daywork Rates: 3. Contractor's Equipment **Hata! Yer işareti tanımlanmamış.**
Daywork Summary ..... **Hata! Yer işareti tanımlanmamış.**
Specified Provisional Sums ..... **Hata! Yer işareti tanımlanmamış.**
Grand Summary ..... **Hata! Yer işareti tanımlanmamış.**
Schedule of Payments ..... 140
Schedule of Performance Guarantees and Performance Damages ..... 141

**Technical Proposal Forms** ..... **142**
Design Proposal ..... 143
Construction Management Strategy ..... 144
Method Statement for key construction activities ..... 145
Sustainable Procurement Proposal ..... 146
Code of Conduct for Contractor's Personnel (ES) Form ..... 147
Work Program ..... 151
Contract Personnel Organization Chart ..... 152
Risk assessment and Proposed Management Plan ..... 153
Contractor's Equipment ..... 154
Subcontractors ..... 155

**Personnel** ..... **156**
Key Personnel qualifications and resource schedule ..... 156
Resume and Declaration ..... 157
Contractor's Representative and Key Personnel ..... 157
Local Labour Method Statement ..... 159

**Qualification Forms ..... 160**
Proposer Information Sheet ..... 164
Party to JV Information Sheet ..... 166
Historical Contract Non-Performance, Pending Litigation and Litigation History ..... 167
Environmental and Social Performance Declaration ..... 169
Financial Situation and Performance ..... 173
Average Annual Construction Turnover ..... 175
Financial Resources ..... 176
General Construction Experience ..... 178
Specific Construction and Contract Management Experience ..... 179
Construction Experience in Key Activities ..... 181
Specific Experience in Managing ES Aspects ..... 183
Others ..... 184

**Form of Proposal Security – Demand Guarantee ..... 185**

**Form of Proposal-Securing Declaration .....** Hata! Yer işareti tanımlanmamış.

# Proposal Forms

## Letter of Proposal - Technical Part

*INSTRUCTIONS TO PROPOSERS*

*INSTRUCTIONS TO PROPOSERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT*

*Place this Letter of Proposal in the first envelope "TECHNICAL PART".*

*The Proposer must prepare the Letter of Proposal on stationery with its letterhead clearly showing the Proposer's complete name and business address.*

*Note: All italicized text in black font is to help Proposers in preparing this form and Proposers shall delete it from the final document.*

**Date of this Proposal submission**: *[insert date (as day, month and year) of Proposal submission]*

**RFP No.:** *[insert number of RFP process]*

**Request for Proposal No.**: *[insert identification]*

**Alternative No.**: *[insert identification No if this is a Proposal for an alternative]*

To: *[Employer insert: **name and address of Employer**]*

Dear Sir or Madam:

We, the undersigned Proposer, hereby submit our Proposal, in two parts, namely:

(a) the Technical Part, and

(b) The Financial Part.

Having examined the RFP Documents, including any Addenda issued in accordance **with ITP 8,** we, the undersigned, offer to execute the Works to _____, in full conformity with the said RFP Documents, and any Addenda.

We undertake, if our Proposal is accepted, to commence the Works and achieve Completion within the respective times stated in the RFP Documents.

We hereby certify that we, including any subcontractors for any part of the contract, meet the eligibility requirements and have no conflict of interest in accordance with **ITP 4.**

**Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment (SH):** [*select the appropriate option from (i) to (v) below and delete the others*].

We *[where JV, insert:* "including any of our JV members"*]*, and any of our subcontractors:

(i) [have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.]

(ii) [are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.]

(iii) [had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations. An arbitral award on the disqualification case has been made in our favor.]

(iv) [had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations for a period of two years. We have subsequently provided and demonstrated that we have adequate capacity and commitment to comply with SEA and SH prevention and response obligations.]

(v) [had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations for a period of two years. We have attached documents demonstrating that we have adequate capacity and commitment to comply with SEA and SH prevention and response obligations.]

We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's Country laws or official regulations or pursuant to a decision of the United Nations Security Council;

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption.

State-owned enterprise or institution: *[select the appropriate option and delete the other] [We are not a state-owned enterprise or institution] / [We are a state-owned enterprise or institution but meet the requirements of **ITP 4.6**]*;

**Potential DAAB Members:** We hereby propose the following three persons, whose curriculum vitae are attached, as potential DAAB members:

| Name | Address |
|---|---|
| 1. ……..... | |
| 2. …….. | |
| 3. …… | |

We agree to abide by this Proposal, which, in accordance with **ITP 12** and **ITP 13**, consists of this letter (Technical Part) and enclosures, until [ insert day, month and year in accordance with PDS 20.1] , and it shall remain binding upon us and may be accepted by you at any time on or before this date.

Until the formal final Contract is prepared and executed between us, this Proposal, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us.

_____

**Name of the Proposer**: **[insert complete name of the Proposer]*

_____

**Name of the person duly authorized to sign the Proposal on behalf of the Proposer**:
*** [insert complete name of person duly authorized to sign the Proposal]*

_____

**Title of the person signing the Proposal**: *[insert complete title of the person signing the Proposal]*

_____

**Signature of the person named above**: *[insert signature of person whose name and capacity are shown above]*

_____

**Date signed** *[insert date of signing]* **day of** *[insert month], [insert year]*

*: In the case of the Proposal submitted by a Joint Venture specify the name of the Joint Venture as Proposer.

**: Person signing the Proposal shall have the power of attorney given by the Proposer. The power of attorney shall be attached with the Proposal Schedules.

ENCLOSURE(S):

# Letter of Proposal - Financial Part

*INSTRUCTIONS TO PROPOSERS*

*INSTRUCTIONS TO PROPOSERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT*

*Place this Letter of Proposal in the second envelope "FINANCIAL PART".*

*The Proposer must prepare the Letter of Proposal on stationery with its letterhead clearly showing the Proposer's complete name and business address.*

*Note: All italicized text in black font is to help Proposers in preparing this form and Proposers shall delete it from the final document.*

**Date of this Proposal submission**: *[insert date (as day, month and year) of Proposal submission]*

**RFP No.:** *[insert number of RFP process]*

**Request for Proposal No.**: *[insert identification]*

**Alternative No.**: *[insert identification No if this is a Proposal for an alternative]*

To: *[Employer insert:* ***name and address of Employer****]*

Dear Sir or Madam:

We, the undersigned Proposer, hereby submit the second part of our Proposal, the Financial Part

Having examined the RFP Documents, the Addenda issued in accordance with **ITP 8,** we, the undersigned, offer to _____, in full conformity with the said RFP Documents, and any Addenda for the total Proposal Price, excluding any discounts offered as follows:

*[Insert one of the options below as appropriate]*

Option 1, in case of one lot: Total price: *[insert the total price of the Proposal in words and figures, indicating the various amounts and the respective currencies]*;

Or

Option 2, in case of multiple lots: (a) Total price of each lot *[insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies]*; and (b) Total price of all lots (sum of all lots) *[insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies]*;

The discounts offered and the methodology for their application is:

(i) The discounts offered are: *[Specify in detail each discount offered]*

(ii) The exact method of calculations to determine the net price after application of discounts is shown below: *[Specify in detail the method that shall be used to apply the discounts]*;

If our Proposal is accepted, we undertake to provide an advance payment security, and a Performance Security *[and an Environmental and Social (ES) Performance Security. **Delete if not applicable**]* in the forms, in the amounts, and within the times specified in the RFP Documents.

We agree to abide by this Proposal, which, in accordance with **ITP 12** and **ITP 13**, consists of this letter (Letter of Proposal – Financial part) and the enclosures listed below, until [ insert day, month and year in accordance with PDS 20.1], and it shall remain binding upon us and may be accepted by you at any time on or before this date.

**Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the RFP process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*.

| Name of Recipient | Address | Reason | Amount |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

(If none has been paid or is to be paid, indicate "none.")

Until the formal final Contract is prepared and executed between us, this Proposal, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us.

_____

**Name of the Proposer**:**[insert complete name of the Proposer]*

_____

**Name of the person duly authorized to sign the Proposal on behalf of the Proposer**: ** *[insert complete name of person duly authorized to sign the Proposal]*

_____

**Title of the person signing the Proposal**: *[insert complete title of the person signing the Proposal]*

_____

**Signature of the person named above**: *[insert signature of person whose name and capacity are shown above]*

_____

**Date signed** *[insert date of signing]* **day of** *[insert month]*, *[insert year]*

*: In the case of the Proposal submitted by a Joint Venture specify the name of the Joint Venture as Proposer.

**: Person signing the Proposal shall have the power of attorney given by the Proposer. The power of attorney shall be attached with the Proposal Schedules.

ENCLOSURE(S):

# Appendix to Proposal

# Schedule of Cost Indexation

If in accordance with GC 13.7, prices shall be adjustable, the following method shall be used to calculate the price adjustment:

Prices payable to the Contractor, in accordance with the Contract, shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components, in accordance with the following formula:

**Pn = a + b1 * (K1n/K1o) + b2 * (K2n/K2o) + b3 * (K3n/K3o) + b4 * (K4n/K4o) + b5 * (K5n/K5o) + b6 * (K6n/K6o) + b7 * (K7n/K7o) + b8 * (K8n/K8o) + b9 * (K9n/K9o) + b10 * (K10n/K10o)**

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

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

**"b1", "b2", "b3", "b4", "b5", "b6", "b7", "b8", "b9" and "b10" "**are coefficients representing the estimated proportion of each cost element related to the execution of the Works as stated in the relevant table of adjustment data; such tabulated cost elements may be indicative of resources such as labour, equipment, and materials and these coefficients are:

**"K1n", "K2n ", "K3n", "K4n", "K5n", "K6n", "K7n" "K8n", "K9n ", and "K10n":** are the current cost indices or reference prices for period "n", expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the date 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

**"K1o", "K2o ", "K3o", "K4o", "K5o", "K6o", "K7o" "K8o", "K9o ", and "K10o":** are the base cost indices or reference prices, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the Base Date.

The cost indices or reference prices stated in the Table of Adjustment Data shall be used. If their source is in doubt, it shall be determined by the Engineer. For this purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table).

If the currency in which the Contract price is expressed is different from the currency of the country of origin of the indices, a correction factor will be applied to avoid incorrect adjustments of the Contract price. The correction factor shall be: $Z_0 / Z_1$, where,

$Z_0$ = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Base date, and

$Z_1$ = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Date of Adjustment.

# Table of Adjustment Data

*[In Tables A, B, and C, below, the Proposer shall (a) indicate its amount of local currency payment, (b) indicate its proposed source and base values of indices for the different foreign currency elements of cost, (c) derive its proposed weightings for local and foreign currency payment, and (d) list the exchange rates used in the currency conversion. In the case of very large and/or complex works contracts, it may be necessary to specify several families of price adjustment formulae corresponding to the different works involved.]*

# Table A. Local Currency

| Index code* | Index description* | Source of index* | Base value and date* | Proposer's related currency amount | Proposer's proposed weighting |
|---|---|---|---|---|---|
| a | Nonadjustable | - | - | - | A: 0.10 |
| A01 | Labor Cost Index | TUIK1* | | | b1: 0.08-0.10 |
| A02 | Other non-metallic mineral products Index | TUIK2* | | | b2: 0.10-0.14 |
| A03 | Iron and steel product Index | TUIK3* | | | b3: 0.22-0.26 |
| A04 | Basic precious metals and other non-ferrous metals | TUIK4* | | | b4: 0.04-0.06 |
| A05 | Solid or liquid fuels | TUIK5* | | | b5: 0.10-0.14 |
| A06 | Wood and cork Index | TUIK6* | | | b6: 0.01-0.03 |
| A07 | Electrical equipment | TUIK7* | | | b7: 0.03-0.06 |
| A08 | Computers and electronic and optical products | TUIK8* | | | b8: 0.07-0.09 |
| A09 | Other material Index | TUIK9* | | | b9: 0.04-0.06 |
| A10 | Mechanical Equipment | TUIK10* | | | b10: 0.13-0.17 |
| | | | **Total** | | **1.00** |

* ***TUIK1****: The number in the "General" column of the Consumer Price Index (2003=100) Table of Index Numbers by Expenditure Groups published monthly by the Turkish Statistical Institute*

***TUIK2:*** *Number in column 23.9 "Other Non-Metallic Mineral Products" of the Domestic Producer Price Index*

***TUIK3:*** *Number in column 24 "Base Metals" of Domestic Producer Price Index*

***TUIK4****: Number in column 24.4 "Basic Precious Metals and Other Non-iron Metals" of Domestic Producer Price Index*

***TUIK5:*** *Number in column 19.2 "Solid or Liquid Fuels" of Domestic Producer Price Index*
***TUIK6:*** *Number in column 16 "Wood and Cork Products (Except Furniture)" of Domestic Producer Price Index*

***TUIK7:*** *Number in column 27.1 "Electric Motors, Generators, Transformers and Electricity Distribution and Control Apparatus" of Domestic Producer Price Index*

***TUIK8:*** *Number in column 26.2 "Computers and Peripheral Equipment" of Domestic Producer Price Index*

***TUIK9:*** *For other work items included in the scope of the construction work subject to the tender, the Domestic Producer Price Index, 2003=100, CPA 2008, published monthly by the Turkish Statistical Institute, the Domestic PPI "General" index in the historical series table according to sections, sections and groups*

***TUIK10:*** *Number in column 28 "Machinery and equipment n.e.c." of Domestic Producer Price Index*

*"Base value and date" is the Index value twenty-eight (28) days before the Bid Submission Date, to be provided by the Bidder.*

*The Bidder will be required to specify weightings within the range such that the total weightings = 1.00.*

# Table B. Foreign Currency (FC)

**State type:** ..... *[If the Proposer is allowed to receive payment in foreign currencies this table shall be used. If Proposer wishes to quote in more than one foreign currency (up to three currencies permitted) then this table should be repeated for each foreign currency.]*

| Index code | Index description | Source of index | Base value and date | Bidder's related source currency in type/amount | Equivalent in FC1 | Bidder's proposed weighting |
|---|---|---|---|---|---|---|
| a | Nonadjustable | — | — | — | | A: 0.10 |
| K1 | Labor Cost Index | | | | | b1: 0.08-0.10 |
| K2 | Other non-metallic mineral products Index | | | | | b2: 0.10-0.14 |
| K3 | Iron and steel product Index | | | | | b3: 0.22-0.26 |
| K4 | Basic precious metals and other non-ferrous metals | | | | | b4: 0.04-0.06 |
| K5 | Solid or liquid fuels | | | | | b5: 0.10-0.14 |
| K6 | Wood and cork Index | | | | | b6: 0.01-0.03 |
| K7 | Electrical equipment | | | | | b7: 0.03-0.06 |
| K8 | Computers and electronic and optical products | | | | | b8: 0.07-0.09 |
| K9 | Other material Index | | | | | b9: 0.04-0.06 |
| K10 | Mechanical Equipment | | | | | b10: 0.13-0.17 |
| | | | | **Total** | | **1.00** |

The Bidder shall complete the above table for indices as applicable.

"Base value and date" is the Index value twenty-eight (28) days before the Bid Submission Date, to be provided by the Bidder.

The Bidder will be required to specify weightings within the range such that the total weightings = 1.00.

Table C. Summary of Payment Currencies

**Table: Alternative A**

**For** ..... *[insert name of Section of the Works]*

| **Name of payment currency** | **A**<br>**Amount of currency** | **B**<br>**Rate of exchange (local currency per unit of foreign)** | **C**<br>**Local currency equivalent**<br>**C = A x B** | **D**<br>**Percentage of Total Proposal Price (TPP)**<br>**100xC / TPP** |
|---|---|---|---|---|
| **Local currency Turkish Lira** | | **1.00** | | |
| **Foreign currency #1** _____ | | | | |
| **Foreign currency #2** _____ | | | | |
| **Foreign currency #** _____ | | | | |
| **Total Proposal Price** | | | | **100.00** |
| **Provisional sums expressed in local currency** | ** to be entered by the Bidder in accordance with the lots for which bids are submitted* | | *to be entered by the Bidder in accordance with the lots for which bids are submitted*<br>*TL 736,000,000.00 for Lot 1*<br>*TL 433,000,000.00 for Lot 2* | |

| | | | | |
|---|---|---|---|---|
| | | | *TL 403,000,000.00 for Lot 3*<br>*TL 702,000,000.00 for Lot 4* | |
| | | | | |
| **TOTAL PROPOSAL PRICE (including provisional sumin in TL)** | | | | |

# Schedule of Priced Activities and Sub-activities (LOT 1)

*[To be completed by the Proposer]*

The total of the prices of the activities in the Schedule of Priced Activities is the Proposer's offer to complete the works on a "single responsibility" basis.

The price of any activity or sub-activity that the Proposer may have omitted is deemed to be included in the price of other activities or sub-activities in the Schedule of Priced Activities and Sub-activities and will not be paid for separately by the Employer.

The Lump Sum Price for each Activity and sub-activity indicated below shall be completed in full by the Proposer. The Proposers' quoted lump sum prices are binding and form part of the Contract upon award. For each of the activities, the Proposer has the option to add up to 3(three) more sub-activities to the existing sub-activities indicated below. The sub-activities submitted at the Bid stage shall form the basis for lump sum payment under the Contract. Any addition to, or deviation from, the sub-activities list as submitted at the Bid stage, shall not constitute grounds for a variation claim during contract implementation.

**Basis of Lump Sum Prices:** All lump sum prices quoted in this Schedule are based on the Proposer's own independent assessment of all conditions relevant to the execution of the Works, including but not limited to ground and geotechnical conditions, site conditions, existing infrastructure, regulatory requirements, and all other technical, logistical, and administrative factors. Any reference documents provided by the Employer — including geotechnical, survey, or other technical reports — are furnished for informational purposes only and do not constitute a contractual representation of actual conditions. Reference documents furnished by the Employer include, without limitation, Annex C — Geotechnical Data Report (GDR).

The Proposer assumes full design, quantity, and execution risk for all activities and sub-activities priced in this Schedule. No adjustment to any lump sum price shall be made on account of conditions or circumstances differing from those described in any Employer-furnished reference document.

Each lump sum price shall be deemed to include all costs necessary to complete the relevant activity or sub-activities in full conformity with the Contract and the Employer's Requirements, and in compliance with all applicable laws and regulations. Such costs include, without limitation, all materials, labour, plant, temporary works, permits, third-party costs, board or body establishment and operation costs, and all other incidental costs and obligations arising from or in connection with the Works.

| ACTIVITY 0 - MOBILIZATION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **0.1** | Mobilization Works | L.S. | |
| **TOTAL ACTIVITY 0** | | | |

| ACTIVITY 1 - DESIGN COMPLETION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **1.1** | Preliminary / Concept Design — All Disciplines (submission and approval) | L.S. | |
| **1.2** | Detailed Design — Civil & Structural Works (submission and approval) | L.S. | |
| **1.3** | Detailed Design — Track / Superstructure Works (submission and approval) | L.S. | |
| **1.4** | Detailed Design — Electrification & Systems Works (submission and approval) | L.S. | |
| **1.5** | Detailed Design — Tunnel Electromechanical Works (submission and approval) | L.S. | |
| **1.6** | Detailed Design — Station Works: Sabiha Gökçen Station (submission and approval) | L.S. | |
| **1.7** | As-Built Documentation — All Disciplines (submission and acceptance) | L.S. | |
| **TOTAL ACTIVITY 1** | | | |

| ACTIVITY 2 - RELOCATION OF EXISTING INFRASTRUCTURE | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **2.1** | Relocation of existing infrastructure and utilities — all locations within Lot 1 | L.S. | |
| **TOTAL ACTIVITY 2** | | | |

| ACTIVITY 3 - ALIGNMENT INFRASTRUCTURE AND SLOPE STABILIZATION (Lot 1 open alignment works between major structures, all as required by the approved detailed design and Employer's Requirements) | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |

| | | | | |
|---|---|---|---|---|
| **3.1** | Between<br>Project Start - Viaduct-A Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.2** | Between<br>Viaduct-A End - Connection-1 End | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.3** | Between<br>Project Start - Viaduct-B Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.4** | Between<br>Viaduct-B End - Connection-2 End | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.5** | Between<br>Project Start - Tunnel 1A-1 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.6** | Between<br>Tunnel 1D-2 End - Lot-1 Project End | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **TOTAL ACTIVITY 3** | | | | |

| **ACTIVITY 4 - SOIL IMPROVEMENT WORKS** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **4.1** | All soil improvement works — all locations within Lot 1 complete (method, depth, and extent as determined by the Contractor's approved detailed design) | L.S. | |
| **TOTAL ACTIVITY 4** | | | |

| **ACTIVITY 5 - STRUCTURAL WORKS: MINOR STRUCTURES (CULVERTS, UNDERPASSES, OVERPASSES AND CUT-AND-COVER TUNNLES ETC.)** |
|---|

| Item No | Deliverable | Unit | Lump Sum Price (₺) |
|---|---|---|---|
| **5.1** | Culvert Construction Works | L.S. | |
| **5.2** | Underpass Construction Works | L.S. | |
| **5.3** | Overpass Construction Works | L.S. | |
| **5.4** | Cut and Cover Tunnels Construction Works | L.S. | |
| **TOTAL ACTIVITY 5** | | | |

| **ACTIVITY 6 - STRUCTURAL WORKS: CROSSING OBLIGATIONS (ENGINEERING STRUCTURES - BRIDGES AND VIADUCTS)** | | | | |
|---|---|---|---|---|
| **Item No** | **Deliverable** | | **Unit** | **Lump Sum Price (₺)** |
| **6.1** | Viaduct-A | Viaduct construction works | L.S. | |
| **6.2** | Viaduct-B | Viaduct construction works | L.S. | |
| **TOTAL ACTIVITY 6** | | | | |

| **ACTIVITY 7 - STRUCTURAL WORKS: TUNNELS** | | | | |
|---|---|---|---|---|
| **Item No** | **Deliverable** | | **Unit** | **Lump Sum Price (₺)** |
| **7.1** | TBM Tunnel – 1A-1, 1A-3, 1B-2, 1C-2, 1D-2 | TBM Twin-Bore Tunnel — complete (portal to portal, all drives, per Employer's Requirements) | L.S. | |
| **7.2** | NATM Tunnel 1A-2 | Type-2A NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.3** | NATM Tunnel 1B-1 | Type-2B NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.4** | NATM Tunnel 1B-3 | Type-4 NATM Single Line Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |

| | | | | |
|---|---|---|---|---|
| **7.5** | NATM Tunnel - P | Type-3 NATM Platform Tunnel, Type-7 Connection Tunnel, Type-9 Link Connection Tunnel Construction (Complete, all support classes, per Employer's Requirements ) | L.S. | |
| **7.6** | NATM Tunnel 1B-4 | Type-4 NATM Single Line Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.7** | NATM Tunnel 1C-1 | Type-2B NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.8** | NATM Tunnel 1D-1 | Type-2A NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **TOTAL ACTIVITY 7** | | | | |

| **ACTIVITY 8 - STATION WORKS: SABİHA GÖKÇEN STATION** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **8.1** | Station civil and structural construction — Sabiha Gökçen Station | L.S. | |
| **8.2** | Station architectural finishing works | L.S. | |
| **8.3** | Station electromechanical works (lifts, escalators, HVAC, MEP, public areas) | L.S. | |
| **TOTAL ACTIVITY 8** | | | |

| **ACTIVITY 9 - SUPERSTRUCTURE (TRACK) WORKS SUBSTANTIAL COMPLETION** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |

| | | | |
|---|---|---|---|
| **9.1** | Existing track removal works — all locations within Lot 1 | L.S. | |
| **9.2** | Ballasted track construction — complete (all locations, per approved detailed design) | L.S. | |
| **9.3** | Ballastless (slab) track construction — complete (all locations, per approved detailed design) | L.S. | |
| **9.4** | Railway turnout supply and installation — all locations within Lot 1 | L.S. | |
| **9.5** | Rail expansion joints — all locations within Lot 1 | L.S. | |
| **9.6** | Track maintenance works (during construction period) | L.S. | |
| **9.7** | Perimeter fencing — complete, all locations within Lot 1 | L.S. | |
| **TOTAL ACTIVITY 9** | | | |

| **ACTIVITY 10 - SYSTEMS INSTALLATION SUBSTANTIAL COMPLETION** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **10.1** | Electrification Foundation and infrastructure works —all locations within Lot 1 | L.S. | |
| **10.2** | Catenary system and conductors — complete | L.S. | |
| **10.3** | Sectioning, insulation, substation and sectioning post works — complete | L.S. | |
| **10.4** | Switchyard and electrical distribution works — complete | L.S. | |
| **10.5** | Protection, metering, earthing and safety systems — complete | L.S. | |
| **10.6** | SCADA and telecommunication works — complete | L.S. | |
| **10.7** | Environmental and dismantling works — complete | L.S. | |
| **10.8** | All tunnel electromechanical works — Lot 1 complete (ventilation, fire detection, lighting, emergency, evacuation and all associated systems, per Employer's Requirements and approved detailed design) | L.S. | |
| **TOTAL ACTIVITY 10** | | | |

| **ACTIVITY 11 - TESTING AND COMMISSIONING** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **11.1** | Pre-commissioning checks and static testing — all systems | L.S. | |

| | | | |
|---|---|---|---|
| **11.2** | Dynamic testing and trial running (track geometry, ride quality, systems integration) | L.S. | |
| **11.3** | Electrification and power systems commissioning and acceptance tests | L.S. | |
| **11.4** | Tunnel electromechanical systems commissioning and acceptance tests | L.S. | |
| **11.5** | Station systems commissioning and acceptance — Sabiha Gökçen Station | L.S. | |
| **11.6** | Safety demonstration, regulatory acceptance and authority approvals — all applicable Turkish national authorities and TCDD operational acceptance | L.S. | |
| **11.7** | Notified Body (NoBo) engagement, EC Verification process and issuance of EC Verification Certificates — all subsystems, per approved Certification Plan | L.S. | |
| **11.8** | Assessment Body (AsBo) engagement, CSM-RA Safety Assessment and issuance of Safety Assessment Report — condition precedent to Taking-Over Certificate | L.S. | |
| **TOTAL ACTIVITY 11** | | | |

| **ACTIVITY 12 - FINAL ACCEPTANCE** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **12.1** | Completion of all outstanding snagging / punch-list items post Taking-Over | L.S. | |
| **12.2** | Submission and acceptance of complete As-Built documentation — all disciplines | L.S. | |
| **12.3** | Defects Notification Period obligations (maintenance, remediation, inspections) | L.S. | |
| **TOTAL ACTIVITY 12** | | | |

| **ACTIVITY 13 - DAAB** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **13.1** | Establishment and operation of the Dispute Avoidance and Adjudication Board (DAAB) in accordance with PCC Clause 21 | L.S. | |
| **TOTAL ACTIVITY 13** | | | |

**PROVISIONAL SUM**

| **Item No.** | **Description** | **Unit** | **Amount (₺)** |
|---|---|---|---|
| P.1 | Provisional Sums | L.S. | 736,000,000.00 |

| | | | |
|---|---|---|---|
| P.2 | Provisional Sums for livelihood support | L.S. | 800,000,000.00 |
| **TOTAL PROVISIONAL SUM** | | | |

**LOT 1 — SUMMARY PRICE TABLE**

| **ACTIVITY** | **Description** | **Lump Sum Price (₺)** |
|---|---|---|
| **0** | Mobilization | |
| **1** | Design Completion | |
| **2** | Relocation of Existing Infrastructure | |
| **3** | Alignment Infrastructure and Slope Stabilization | |
| **4** | Soil improvement works | |
| **5** | Structural works: Minor structures (culverts, underpasses, overpasses, Cut-and-Cover Tunnels…. Etc.) | |
| **6** | Structural works: Crossing obligations (Engineering Structures Bridges and Viaducts) | |
| **7** | Structural works: Tunnels | |
| **8** | Station works Sabiha Gökçen Station | |
| **9** | Superstructure (Track) Works Substantial Completion | |
| **10** | Systems Installation Substantial Completion | |
| **11** | Testing and Commissioning | |
| **12** | Final Acceptance | |
| **13** | Establishment and operation of the DAAB | |
| **P.1** | Provisional Sum | |
| **P.2** | Provisional Sum for Livelihood support | |
| **TOTAL CONTRACT PRICE - LOT 1** | | |

# Schedule of Priced Activities and Sub-activities (LOT 2)

The total of the prices of the activities in the Schedule of Priced Activities is the Proposer's offer to complete the works on a "single responsibility" basis.

The price of any activity or sub-activity that the Proposer may have omitted is deemed to be included in the price of other activities or sub-activities in the Schedule of Priced Activities and Sub-activities and will not be paid for separately by the Employer.

The Lump Sum Price for each Activity and sub-activity indicated below shall be completed in full by the Proposer. The Proposers' quoted lump sum prices are binding and form part of the Contract upon award. For each of the activities, the Proposer has the option to add up to 3(three) more sub-Activities to the existing sub-Activities indicated below. The sub-activities submitted at the Bid stage shall form the basis for lump sum payment. Any addition to, or deviation from, the sub-activities list submitted at Bid stage, shall not constitute grounds for a variation claim during contract implementation.

**Basis of Lump Sum Prices:** All lump sum prices quoted in this Schedule are based on the Proposer's own independent assessment of all conditions relevant to the execution of the Works, including but not limited to ground and geotechnical conditions, site conditions, existing infrastructure, regulatory requirements, and all other technical, logistical, and administrative factors. Any reference documents provided by the Employer — including geotechnical, survey, or other technical reports — are furnished for informational purposes only and do not constitute a contractual representation of actual conditions. Reference documents furnished by the Employer include, without limitation, Annex C — Geotechnical Data Report (GDR).

The Proposer assumes full design, quantity, and execution risk for all activities and sub-activities priced in this Schedule. No adjustment to any lump sum price shall be made on account of conditions or circumstances differing from those described in any Employer-furnished reference document.

Each lump sum price shall be deemed to include all costs necessary to complete the relevant Activities or sub-activities in full conformity with the Contract and the Employer's Requirements, and in compliance with all applicable laws and regulations. Such costs include, without limitation, all materials, labour, plant, temporary works, permits, third-party costs, board or body establishment and operation costs, and all other incidental costs and obligations arising from or in connection with the Works.

| ACTIVITY 0 - MOBILIZATION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **0.1** | Mobilization Works | L.S. | |
| **TOTAL ACTIVITY 0** | | | |

| ACTIVITY 1 - DESIGN COMPLETION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **1.1** | Preliminary / Concept Design — All Disciplines (submission and approval) | L.S. | |
| **1.2** | Detailed Design — Civil & Structural Works (submission and approval) | L.S. | |
| **1.3** | Detailed Design — Track / Superstructure Works (submission and approval) | L.S. | |
| **1.4** | Detailed Design — Electrification & Systems Works (submission and approval) | L.S. | |
| **1.5** | Detailed Design — Tunnel Electromechanical Works (submission and approval) | L.S. | |
| **1.6** | As-Built Documentation — All Disciplines (submission and acceptance) | L.S. | |
| **TOTAL ACTIVITY 1** | | | |

| ACTIVITY 2 - RELOCATION OF EXISTING INFRASTRUCTURE | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **2.1** | Relocation of existing infrastructure and utilities — all locations within Lot 2 | L.S. | |
| **TOTAL ACTIVITY 2** | | | |

| ACTIVITY 3 - ALIGNMENT INFRASTRUCTURE AND SLOPE STABILIZATION (Lot 2 open alignment works between major structures, all as required by the approved detailed design and Employer's Requirements) | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |

| | | | | |
|---|---|---|---|---|
| **3.1** | Between Lot-2 Start - Bridge 1 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.2** | Between Bridge 1 End - Bridge 2 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.3** | Between Bridge 2 End - Bridge 3 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.4** | Between Bridge 3 End - Tunnel 2 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.5** | Between Tunnel 2 End - Tunnel 3 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.6** | Between Tunnel 3 End - Tunnel 4 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.7** | Between Tunnel 4 End - Tunnel 5 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.8** | Between Tunnel 5 End - Bridge 4 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.9** | Between Bridge 4 End - Tunnel 6 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.10** | Between Tunnel 6 End - Bridge 5 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.11** | Between Bridge 5 End - Bridge 6 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.12** | Between Bridge 6 End - Bridge 7 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.13** | Between Bridge 7 End - Bridge 8 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |

| | | | | |
|---|---|---|---|---|
| **3.14** | Between Bridge 8 End - Tunnel 7 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.15** | Between Tunnel 7 End - Bridge 9 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.16** | Between Bridge 9 End - Tunnel 8 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.17** | Between Tunnel 8 End - Tunnel 9 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.18** | Between Tunnel 9 End - Tunnel 10 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.19** | Between Tunnel 10 End - Bridge 10 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.20** | Between Bridge 10 End - Bridge 11 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.21** | Between Bridge 11 End - Bridge 12 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.22** | Between Bridge 12 End - Lot-2 End | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **TOTAL ACTIVITY 3** | | | | |

| **ACTIVITY 4 - SOIL IMPROVEMENT WORKS** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **4.1** | All soil improvement works — all locations within Lot 2 complete (method, depth, and extent as determined by the Contractor's approved detailed design) | L.S. | |
| **TOTAL ACTIVITY 4** | | | |

| **ACTIVITY 5 - STRUCTURAL WORKS: MINOR STRUCTURES (CULVERTS, UNDERPASSES, OVERPASSES AND CUT-AND-COVER TUNNLES ETC.)** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **5.1** | Culvert Construction Works | L.S. | |
| **5.2** | Underpass Construction Works | L.S. | |
| **5.3** | Overpass Construction Works | L.S. | |
| **5.4** | Cut and Cover Tunnels Construction Works | L.S. | |
| **TOTAL ACTIVITY 5** | | | |

| **ACTIVITY 6 - STRUCTURAL WORKS: CROSSING OBLIGATIONS (ENGINEERING STRUCTURES - BRIDGES AND VIADUCTS)** | | | | |
|---|---|---|---|---|
| **Item No** | **Deliverable** | | **Unit** | **Lump Sum Price (৳)** |
| **6.1** | Bridge 1 | Bridge construction works | L.S. | |
| **6.2** | Bridge 2 | Bridge construction works | L.S. | |
| **6.3** | Bridge 3 | Bridge construction works | L.S. | |
| **6.4** | Bridge 4 | Bridge construction works | L.S. | |
| **6.5** | Bridge 5 | Bridge construction works | L.S. | |
| **6.6** | Bridge 6 | Bridge construction works | L.S. | |
| **6.7** | Bridge 7 | Bridge construction works | L.S. | |
| **6.8** | Bridge 8 | Bridge construction works | L.S. | |
| **6.9** | Bridge 9 | Bridge construction works | L.S. | |
| **6.10** | Bridge 10 | Bridge construction works | L.S. | |
| **6.11** | Bridge 11 | Bridge construction works | L.S. | |
| **6.12** | Bridge 12 | Bridge construction works | L.S. | |
| **TOTAL ACTIVITY 6** | | | | |

| ACTIVITY 7 - STRUCTURAL WORKS: TUNNELS | | | | |
|---|---|---|---|---|
| **Item No** | **Deliverable** | | **Unit** | **Lump Sum Price (৳)** |
| **7.1** | Tunnel 2 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.2** | Tunnel 3 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.3** | Tunnel 4 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.4** | Tunnel 5 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.5** | Tunnel 6 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.6** | Tunnel 7 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.7** | Tunnel 8 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.8** | Tunnel 9 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.9** | Tunnel 10 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.10** | Escape Tunnels | Type-11 Escape Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **TOTAL ACTIVITY 7** | | | | |

| ACTIVITY 8 - SUPERSTRUCTURE (TRACK) WORKS SUBSTANTIAL COMPLETION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **8.1** | Existing track removal works — all locations within Lot 2 | L.S. | |
| **8.2** | Ballasted track construction — complete (all locations, per approved detailed design) | L.S. | |
| **8.3** | Ballastless (slab) track construction — complete (all locations, per approved detailed design) | L.S. | |
| **8.4** | Railway turnout supply and installation — all locations within Lot 2 | L.S. | |
| **8.5** | Rail expansion joints — all locations within Lot 2 | L.S. | |
| **8.6** | Track maintenance works (during construction period) | L.S. | |
| **8.7** | Perimeter fencing — complete, all locations within Lot 2 | L.S. | |
| **TOTAL ACTIVITY 8** | | | |

| ACTIVITY 9 - SYSTEMS INSTALLATION SUBSTANTIAL COMPLETION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **9.1** | Electrification Foundation and infrastructure works —all locations within Lot 2 | L.S. | |
| **9.2** | Catenary system and conductors — complete | L.S. | |
| **9.3** | Sectioning, insulation, substation and sectioning post works — complete | L.S. | |
| **9.4** | Switchyard and electrical distribution works — complete | L.S. | |
| **9.5** | Protection, metering, earthing and safety systems — complete | L.S. | |
| **9.6** | SCADA and telecommunication works — complete | L.S. | |
| **9.7** | Environmental and dismantling works — complete | L.S. | |
| **9.8** | All tunnel electromechanical works — Lot 2 complete (ventilation, fire detection, lighting, emergency, evacuation and all associated systems, per Employer's Requirements and approved detailed design) | L.S. | |
| **TOTAL ACTIVITY 9** | | | |

| ACTIVITY 10 - TESTING AND COMMISSIONING |
|---|

| Item No | Deliverable | Unit | Lump Sum Price (₺) |
|---|---|---|---|
| **10.1** | Pre-commissioning checks and static testing — all systems | L.S. | |
| **10.2** | Dynamic testing and trial running (track geometry, ride quality, systems integration) | L.S. | |
| **10.3** | Electrification and power systems commissioning and acceptance tests | L.S. | |
| **10.4** | Tunnel electromechanical systems commissioning and acceptance tests | L.S. | |
| **10.5** | Safety demonstration, regulatory acceptance and authority approvals — all applicable Turkish national authorities and TCDD operational acceptance | L.S. | |
| **10.6** | Notified Body (NoBo) engagement, EC Verification process and issuance of EC Verification Certificates — all subsystems, per approved Certification Plan | L.S. | |
| **10.7** | Assessment Body (AsBo) engagement, CSM-RA Safety Assessment and issuance of Safety Assessment Report — condition precedent to Taking-Over Certificate | L.S. | |
| **TOTAL ACTIVITY 10** | | | |

| **ACTIVITY 11 - FINAL ACCEPTANCE** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **11.1** | Completion of all outstanding snagging / punch-list items post Taking-Over | L.S. | |
| **11.2** | Submission and acceptance of complete As-Built documentation — all disciplines | L.S. | |
| **11.3** | Defects Notification Period obligations (maintenance, remediation, inspections) | L.S. | |
| **TOTAL ACTIVITY 11** | | | |

| **ACTIVITY 12 - DAAB** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **12.1** | Establishment and operation of the Dispute Avoidance and Adjudication Board (DAAB) in accordance with PCC Clause 21 | L.S. | |
| **TOTAL ACTIVITY 12** | | | |

## PROVISIONAL SUM

| Item No. | Description | Unit | Amount (৳) |
|---|---|---|---|
| P.1 | Provisional Sums | L.S. | 433,000,000.00 |
| P.2 | Provisional Sums for livelihood support | L.S. | 450,000,000.00 |
| **TOTAL PROVISIONAL SUM** | | | |

## LOT 2 — SUMMARY PRICE TABLE

| ACTIVITY | Description | Lump Sum Price (৳) |
|---|---|---|
| **0** | Mobilization | |
| **1** | Design Completion | |
| **2** | Relocation of Existing Infrastructure | |
| **3** | Alignment Infrastructure and Slope Stabilization | |
| **4** | Soil improvement works | |
| **5** | Structural works: Minor structures (culverts, underpasses, oveses, Cut-and-Cover Tunnels…. Etc.) | |
| **6** | Structural works: Crossing obligations (Engineering Structures Bridges and Viaducts) | |
| **7** | Structural works: Tunnels | |
| **8** | Superstructure (Track) Works Substantial Completion | |
| **9** | Systems Installation Substantial Completion | |
| **10** | Testing and Commissioning | |
| **11** | Final Acceptance | |
| **12** | Establishment and operation of the DAAB | |
| **P.1** | Provisional Sum | |
| **P.2** | Provisional Sum for Livelihood support | |
| **TOTAL CONTRACT PRICE - LOT 2** | | |

# Schedule of Priced Activities and Sub-activities (LOT 3)

The total of the prices of the activities in the Schedule of Priced Activities is the Proposer's offer to complete the works on a "single responsibility" basis.

The price of any activity or sub-activity that the Proposer may have omitted is deemed to be included in the price of other activities or sub-activities in the Schedule of Priced Activities and Sub-activities and will not be paid for separately by the Employer.

The Lump Sum Price for each activity and sub-activity indicated below shall be completed in full by the Proposer. The Proposers' quoted lump sum prices are binding and form part of the Contract upon award. For each of the activities, the Proposer has the option to add up to 3(three) more sub-activities to the existing sub-activities indicated below. The sub-activities submitted at the Bid stage shall form the basis for lump sum payment. Any addition to, or deviation from, the sub-activities list submitted at Bid stage, shall not constitute grounds for a variation claim during contract implementation.

**Basis of Lump Sum Prices:** All lump sum prices quoted in this Schedule are based on the Proposer's own independent assessment of all conditions relevant to the execution of the Works, including but not limited to ground and geotechnical conditions, site conditions, existing infrastructure, regulatory requirements, and all other technical, logistical, and administrative factors. Any reference documents provided by the Employer — including geotechnical, survey, or other technical reports — are furnished for informational purposes only and do not constitute a contractual representation of actual conditions. Reference documents furnished by the Employer include, without limitation, Annex C — Geotechnical Data Report (GDR).

The Proposer assumes full design, quantity, and execution risk for all activities and sub-activities priced in this Schedule. No adjustment to any lump sum price shall be made on account of conditions or circumstances differing from those described in any Employer-furnished reference document.

Each lump sum price shall be deemed to include all costs necessary to complete the relevant activity or sub-activity in full conformity with the Contract and the Employer's Requirements, and in compliance with all applicable laws and regulations. Such costs include, without limitation, all materials, labour, plant, temporary works, permits, third-party costs, board or body establishment and operation costs, and all other incidental costs and obligations arising from or in connection with the Works.

| ACTIVITY 0 - MOBILIZATION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **0.1** | Mobilization Works | L.S. | |
| **TOTAL ACTIVITY 0** | | | |

| ACTIVITY 1 - DESIGN COMPLETION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **1.1** | Preliminary / Concept Design — All Disciplines (submission and approval) | L.S. | |
| **1.2** | Detailed Design — Civil & Structural Works (submission and approval) | L.S. | |
| **1.3** | Detailed Design — Track / Superstructure Works (submission and approval) | L.S. | |
| **1.4** | Detailed Design — Electrification & Systems Works (submission and approval) | L.S. | |
| **1.5** | Detailed Design — Tunnel Electromechanical Works (submission and approval) | L.S. | |
| **1.6** | As-Built Documentation — All Disciplines (submission and acceptance) | L.S. | |
| **TOTAL ACTIVITY 1** | | | |

| ACTIVITY 2 - RELOCATION OF EXISTING INFRASTRUCTURE | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **2.1** | Relocation of existing infrastructure and utilities — all locations within Lot 3 | L.S. | |
| **TOTAL ACTIVITY 2** | | | |

| ACTIVITY 3 - ALIGNMENT INFRASTRUCTURE AND SLOPE STABILIZATION (Lot 3 open alignment works between major structures, all as required by the approved detailed design and Employer's Requirements) | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |

| | | | | |
|---|---|---|---|---|
| **3.1** | Between<br>Lot-3 Start - Bridge 13 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.2** | Between<br>Bridge 13 End - Bridge 14 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.3** | Between<br>Bridge 14 End - Bridge 15 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.4** | Between<br>Bridge 15 End - Bridge 16 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.5** | Between<br>Bridge 16 End - Bridge 17 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.6** | Between<br>Bridge 17 End - Tunnel 11 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.7** | Between<br>Tunnel 11 End - Bridge 18 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.8** | Between<br>Bridge 18 End - Tunnel 12 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.9** | Between<br>Tunnel 13 End - Bridge 19 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.10** | Between<br>Bridge 19 End - Bridge 20 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.11** | Between<br>Bridge 20 End - Bridge 21 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.12** | Between<br>Bridge 21 End - Tunnel 14 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.13** | Between<br>Tunnel 14 End - Bridge 22 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |

| | | | | |
|---|---|---|---|---|
| **3.14** | Between<br>Bridge 22 End - Tunnel 15 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.15** | Between<br>Tunnel 15 End - Tunnel 16 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.16** | Between<br>Tunnel 16 End - Bridge 23 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.17** | Between<br>Bridge 23 End - Bridge 24 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.18** | Between<br>Bridge 24 End - Bridge 25 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.19** | Between<br>Bridge 25 End - Bridge 26 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.20** | Between<br>Bridge 26 End - Bridge 27 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.21** | Between<br>Bridge 27 End - Tunnel 17 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.22** | Between<br>Tunnel 17 End - Tunnel 18 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.23** | Between<br>Tunnel 18 End - Bridge 28 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.24** | Between<br>Bridge 28 End - Bridge 29 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.25** | Between<br>Bridge 29 End - Bridge 30 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.26** | Between<br>Bridge 30 End - Bridge 31 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |

| | | | | |
|---|---|---|---|---|
| **3.27** | Between<br>Bridge 31 End - Lot 3 End | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **TOTAL ACTIVITY 3** | | | | |

| **ACTIVITY 4 - SOIL IMPROVEMENT WORKS** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **4.1** | All soil improvement works — all locations within Lot 3 complete (method, depth, and extent as determined by the Contractor's approved detailed design) | L.S. | |
| **TOTAL ACTIVITY 4** | | | |

| **ACTIVITY 5 - STRUCTURAL WORKS: MINOR STRUCTURES (CULVERTS, UNDERPASSES, OVERPASSES AND CUT-AND-COVER TUNNLES ETC.)** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **5.1** | Culvert Construction Works | L.S. | |
| **5.2** | Underpass Construction Works | L.S. | |
| **5.3** | Overpass Construction Works | L.S. | |
| **5.4** | Cut and Cover Tunnels Construction Works | L.S. | |
| **TOTAL ACTIVITY 5** | | | |

| **ACTIVITY 6 - STRUCTURAL WORKS: CROSSING OBLIGATIONS (ENGINEERING STRUCTURES - BRIDGES AND VIADUCTS)** | | | | |
|---|---|---|---|---|
| **Item No** | **Deliverable** | | **Unit** | **Lump Sum Price (৳)** |
| **6.1** | Bridge 13 | Bridge construction works | L.S. | |
| **6.2** | Bridge 14 | Bridge construction works | L.S. | |
| **6.3** | Bridge 15 | Bridge construction works | L.S. | |
| **6.4** | Bridge 16 | Bridge construction works | L.S. | |
| **6.5** | Bridge 17 | Bridge construction works | L.S. | |
| **6.6** | Bridge 18 | Bridge construction works | L.S. | |

| | | | | |
|---|---|---|---|---|
| **6.7** | Bridge 19 | Bridge construction works | L.S. | |
| **6.8** | Bridge 20 | Bridge construction works | L.S. | |
| **6.9** | Bridge 21 | Bridge construction works | L.S. | |
| **6.10** | Bridge 22 | Bridge construction works | L.S. | |
| **6.11** | Bridge 23 | Bridge construction works | L.S. | |
| **6.12** | Bridge 24 | Bridge construction works | L.S. | |
| **6.13** | Bridge 25 | Bridge construction works | L.S. | |
| **6.14** | Bridge 26 | Bridge construction works | L.S. | |
| **6.15** | Bridge 27 | Bridge construction works | L.S. | |
| **6.16** | Bridge 28 | Bridge construction works | L.S. | |
| **6.17** | Bridge 29 | Bridge construction works | L.S. | |
| **6.18** | Bridge 30 | Bridge construction works | L.S. | |
| **6.19** | Bridge 31 | Bridge construction works | L.S. | |
| **TOTAL ACTIVITY 6** | | | | |

| **ACTIVITY 7 - STRUCTURAL WORKS: TUNNELS** | | | | |
|---|---|---|---|---|
| **Item No** | **Deliverable** | | **Unit** | **Lump Sum Price (₺)** |
| **7.1** | Tunnel 11 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.2** | Tunnel 12 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.3** | Tunnel 13 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.4** | Tunnel 14 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.5** | Tunnel 15 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |

| | | | | |
|---|---|---|---|---|
| **7.6** | Tunnel 16 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.7** | Tunnel 17 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.8** | Tunnel 18 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.9** | Escape Tunnels | Construction of Type-11 Escape Tunnel (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **TOTAL ACTIVITY 7** | | | | |

| **ACTIVITY 8 - SUPERSTRUCTURE (TRACK) WORKS SUBSTANTIAL COMPLETION** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **8.1** | Existing track removal works — all locations within Lot 3 | L.S. | |
| **8.2** | Ballasted track construction — complete (all locations, per approved detailed design) | L.S. | |
| **8.3** | Ballastless (slab) track construction — complete (all locations, per approved detailed design) | L.S. | |
| **8.4** | Railway turnout supply and installation — all locations within Lot 3 | L.S. | |
| **8.5** | Rail expansion joints — all locations within Lot 3 | L.S. | |
| **8.6** | Track maintenance works (during construction period) | L.S. | |
| **8.7** | Perimeter fencing — complete, all locations within Lot 3 | L.S. | |
| **TOTAL ACTIVITY 8** | | | |

| **ACTIVITY 9 - SYSTEMS INSTALLATION SUBSTANTIAL COMPLETION** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **9.1** | Electrification Foundation and infrastructure works —all locations within Lot 3 | L.S. | |
| **9.2** | Catenary system and conductors — complete | L.S. | |

| | | | |
|---|---|---|---|
| **9.3** | Sectioning, insulation, substation and sectioning post works — complete | L.S. | |
| **9.4** | Switchyard and electrical distribution works — complete | L.S. | |
| **9.5** | Protection, metering, earthing and safety systems — complete | L.S. | |
| **9.6** | SCADA and telecommunication works — complete | L.S. | |
| **9.7** | Environmental and dismantling works — complete | L.S. | |
| **9.8** | All tunnel electromechanical works — Lot 3 complete (ventilation, fire detection, lighting, emergency, evacuation and all associated systems, per Employer's Requirements and approved detailed design) | L.S. | |
| **TOTAL ACTIVITY 9** | | | |

| **ACTIVITY 10 - TESTING AND COMMISSIONING** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **10.1** | Pre-commissioning checks and static testing — all systems | L.S. | |
| **10.2** | Dynamic testing and trial running (track geometry, ride quality, systems integration) | L.S. | |
| **10.3** | Electrification and power systems commissioning and acceptance tests | L.S. | |
| **10.4** | Tunnel electromechanical systems commissioning and acceptance tests | L.S. | |
| **10.5** | Safety demonstration, regulatory acceptance and authority approvals — all applicable Turkish national authorities and TCDD operational acceptance | L.S. | |
| **10.6** | Notified Body (NoBo) engagement, EC Verification process and issuance of EC Verification Certificates — all subsystems, per approved Certification Plan | L.S. | |
| **10.7** | Assessment Body (AsBo) engagement, CSM-RA Safety Assessment and issuance of Safety Assessment Report — condition precedent to Taking-Over Certificate | L.S. | |
| **TOTAL ACTIVITY 10** | | | |

| **ACTIVITY 11 - FINAL ACCEPTANCE** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **11.1** | Completion of all outstanding snagging / punch-list items post Taking-Over | L.S. | |
| **11.2** | Submission and acceptance of complete As-Built documentation — all disciplines | L.S. | |

| | | | |
|---|---|---|---|
| **11.3** | Defects Notification Period obligations (maintenance, remediation, inspections) | L.S. | |
| **TOTAL ACTIVITY 11** | | | |

| **ACTIVITY 12 - DAAB** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **12.1** | Establishment and operation of the Dispute Avoidance and Adjudication Board (DAAB) in accordance with PCC Clause 21 | L.S. | |
| **TOTAL ACTIVITY 12** | | | |

## PROVISIONAL SUM

| **Item No.** | **Description** | **Unit** | **Amount (৳)** |
|---|---|---|---|
| P.1 | Provisional Sums | L.S. | 403,000,000.00 |
| P.2 | Provisional Sums for livelihood support | L.S. | 450,000,000.00 |
| **TOTAL PROVISIONAL SUM** | | | |

## LOT 3 — SUMMARY PRICE TABLE

| **ACTIVITY** | **Description** | **Lump Sum Price (৳)** |
|---|---|---|
| **0** | Mobilization | |
| **1** | Design Completion | |
| **2** | Relocation of Existing Infrastructure | |
| **3** | Alignment Infrastructure and Slope Stabilization | |
| **4** | Soil improvement works | |
| **5** | Structural works: Minor structures (culverts, underpasses, overpasses, Cut-and-Cover Tunnels…. Etc.) | |
| **6** | Structural works: Crossing obligations (Engineering Structures Bridges and Viaducts) | |
| **7** | Structural works: Tunnels | |
| **8** | Superstructure (Track) Works Substantial Completion | |
| **9** | Systems Installation Substantial Completion | |

| | | |
|---|---|---|
| **10** | Testing and Commissioning | |
| **11** | Final Acceptance | |
| **12** | Establishment and operation of the DAAB | |
| **P.1** | Provisional Sum | |
| **P.2** | Provisional Sum for Livelihood support | |
| **TOTAL CONTRACT PRICE - LOT 3** | | |

# Schedule of Priced Activities and Sub-activities (LOT 4)

The total of the prices of the activities in the Schedule of Priced Activities is the Proposer's offer to complete the works on a "single responsibility" basis.

The price of any activity or sub-activity that the Proposer may have omitted is deemed to be included in the price of other activities or sub-activities in the Schedule of Priced Activities and Sub-activities and will not be paid for separately by the Employer.

The Lump Sum Price for each activity and sub-activity indicated below shall be completed in full by the Proposer. The Proposers' quoted lump sum prices are binding and form part of the Contract upon award. For each of the activities, the Proposer has the option to add up to 3(three) more sub-activities to the existing sub-activities indicated below. The sub-activities submitted at the Bid stage shall form the basis for lump sum payment. Any addition to, or deviation from, the sub-activities list submitted at Bid stage, shall not constitute grounds for a variation claim during contract implementation.

**Basis of Lump Sum Prices:** All lump sum prices quoted in this Schedule are based on the Proposer's own independent assessment of all conditions relevant to the execution of the Works, including but not limited to ground and geotechnical conditions, site conditions, existing infrastructure, regulatory requirements, and all other technical, logistical, and administrative factors. Any reference documents provided by the Employer — including geotechnical, survey, or other technical reports — are furnished for informational purposes only and do not constitute a contractual representation of actual conditions. Reference documents furnished by the Employer include, without limitation, Annex C — Geotechnical Data Report (GDR).

The Proposer assumes full design, quantity, and execution risk for all activities and sub-activities priced in this Schedule. No adjustment to any lump sum price shall be made on account of conditions or circumstances differing from those described in any Employer-furnished reference document.

Each lump sum price shall be deemed to include all costs necessary to complete the relevant activity or sub-activity in full conformity with the Contract and the Employer's Requirements, and in compliance with all applicable laws and regulations. Such costs include, without limitation, all materials, labour, plant, temporary works, permits, third-party costs, board or body establishment and operation costs, and all other incidental costs and obligations arising from or in connection with the Works.

| ACTIVITY 0 - MOBILIZATION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **0.1** | Mobilization Works | L.S. | |
| **TOTAL ACTIVITY 0** | | | |

| ACTIVITY 1 - DESIGN COMPLETION | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **1.1** | Preliminary / Concept Design — All Disciplines (submission and approval) | L.S. | |
| **1.2** | Detailed Design — Civil & Structural Works (submission and approval) | L.S. | |
| **1.3** | Detailed Design — Track / Superstructure Works (submission and approval) | L.S. | |
| **1.4** | Detailed Design — Electrification & Systems Works (submission and approval) | L.S. | |
| **1.5** | Detailed Design — Tunnel Electromechanical Works (submission and approval) | L.S. | |
| **1.6** | Detailed Design — Station Works: İstanbul Airport Station (submission and approval) | L.S. | |
| **1.7** | As-Built Documentation — All Disciplines (submission and acceptance) | L.S. | |
| **TOTAL ACTIVITY 1** | | | |

| ACTIVITY 2 - RELOCATION OF EXISTING INFRASTRUCTURE | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **2.1** | Relocation of existing infrastructure and utilities — all locations within Lot 4 | L.S. | |
| **TOTAL ACTIVITY 2** | | | |

| ACTIVITY 3 - ALIGNMENT INFRASTRUCTURE AND SLOPE STABILIZATION (Lot 4 open alignment works between major structures, all as required by the approved detailed design and Employer's Requirements) | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |

| | | | | |
|---|---|---|---|---|
| **3.1** | Between<br>Lot 4 Start - Bridge 32 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.2** | Between<br>Bridge 32 End - Bridge 33 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.3** | Between<br>Bridge 33 End - Tunnel 19 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.4** | Between<br>Tunnel 20-F End - Tunnel 21 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.5** | Between<br>Tunnel 21 End - Bridge 34 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.6** | Between<br>Bridge 34 End - Tunnel 22 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.7** | Between<br>Tunnel 22 End - Bridge 35 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.8** | Between<br>Bridge 35 End - Tunnel 23 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.9** | Between<br>Tunnel 23 End - Bridge 36 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.10** | Between<br>Bridge 36 End - Tunnel 24 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |

| | | | | |
|---|---|---|---|---|
| **3.11** | Between<br>Tunnel 24 End -Tunnel 25 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.12** | Between<br>Tunnel 25 End - Bridge 37 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.13** | Between<br>Bridge 37 End - Bridge 38 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.14** | Between<br>Bridge 38 End - Bridge 39 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.15** | Between<br>Bridge 39 End - Bridge 40 Start | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.16** | Between<br>Bridge 40 End - Lot 4 End | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **3.17** | Between<br>Connection Start - Connection End | All earthworks, alignment formation and slope stabilization works within the open alignment | L.S. | |
| **TOTAL ACTIVITY 3** | | | | |

| **ACTIVITY 4 - SOIL IMPROVEMENT WORKS** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (฿)** |
| **4.1** | All soil improvement works — all locations within Lot 4 complete (method, depth, and extent as determined by the Contractor's approved detailed design) | L.S. | |
| **TOTAL ACTIVITY 4** | | | |

| ACTIVITY 5 - STRUCTURAL WORKS: MINOR STRUCTURES (CULVERTS, UNDERPASSES, OVERPASSES AND CUT-AND-COVER TUNNLES ETC.) | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (৳)** |
| **5.1** | Culvert Construction Works | L.S. | |
| **5.2** | Underpass Construction Works | L.S. | |
| **5.3** | Overpass Construction Works | L.S. | |
| **5.4** | Cut and Cover Tunnels Construction Works | L.S. | |
| **TOTAL ACTIVITY 5** | | | |

| ACTIVITY 6 - STRUCTURAL WORKS: CROSSING OBLIGATIONS (ENGINEERING STRUCTURES - BRIDGES AND VIADUCTS) | | | | |
|---|---|---|---|---|
| **Item No** | **Deliverable** | | **Unit** | **Lump Sum Price (৳)** |
| **6.1** | Bridge 32 | Bridge construction works | L.S. | |
| **6.2** | Bridge 33 | Bridge construction works | L.S. | |
| **6.3** | Bridge 34 | Bridge construction works | L.S. | |
| **6.4** | Bridge 35 | Bridge construction works | L.S. | |
| **6.5** | Bridge 36 | Bridge construction works | L.S. | |
| **6.6** | Bridge 37 | Bridge construction works | L.S. | |
| **6.7** | Bridge 38 | Bridge construction works | L.S. | |
| **6.8** | Bridge 39 | Bridge construction works | L.S. | |
| **6.9** | Bridge 40 | Bridge construction works | L.S. | |
| **TOTAL ACTIVITY 6** | | | | |

| ACTIVITY 7 - STRUCTURAL WORKS: TUNNELS | | | | |
|---|---|---|---|---|
| **Item No** | **Deliverable** | | **Unit** | **Lump Sum Price (৳)** |
| **7.1** | TBM Tunnel - 19,19-B, 20-B,20-D,20-F,21 | TBM Twin-Bore Tunnel —complete (portal to portal, all drives, per Employer's Requirements) | L.S. | |

| | | | | |
|---|---|---|---|---|
| **7.2** | NATM Tunnel 19-A | Type-2A NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.3** | NATM Tunnel 19-C | Type-5 NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.4** | NATM Tunnel 19-C | Type-5 NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.5** | NATM Tunnel 20-A | Type-5 NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.6** | NATM Tunnel 20-C | Type-2A NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.7** | NATM Tunnel 20-E | Type-2A NATM Turnout Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.8** | NATM Tunnel 22 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.9** | NATM Tunnel 23 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.10** | NATM Tunnel 24 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.11** | NATM Tunnel 25 | Type-6 NATM Double Track Tunnel Construction (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **7.12** | Escape Tunnel | Construction of Type-11 Escape Tunnel (Complete, all support classes, per Employer's Requirements) | L.S. | |
| **TOTAL ACTIVITY 7** | | | | |

| **ACTIVITY 8 - STATION WORKS: ISTANBUL AIRPORT STATION** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |

| | | | |
|---|---|---|---|
| **8.1** | Station civil and structural construction — Istanbul Airport Station | L.S. | |
| **8.2** | Station architectural finishing works | L.S. | |
| **8.3** | Station electromechanical works (lifts, escalators, HVAC, MEP, public areas) | L.S. | |
| **TOTAL ACTIVITY 8** | | | |

| **ACTIVITY 9 - SUPERSTRUCTURE (TRACK) WORKS SUBSTANTIAL COMPLETION** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **9.1** | Existing track removal works — all locations within Lot 4 | L.S. | |
| **9.2** | Ballasted track construction — complete (all locations, per approved detailed design) | L.S. | |
| **9.3** | Ballastless (slab) track construction — complete (all locations, per approved detailed design) | L.S. | |
| **9.4** | Railway turnout supply and installation — all locations within Lot 4 | L.S. | |
| **9.5** | Rail expansion joints — all locations within Lot 4 | L.S. | |
| **9.6** | Track maintenance works (during construction period) | L.S. | |
| **9.7** | Perimeter fencing — complete, all locations within Lot 4 | L.S. | |
| **TOTAL ACTIVITY 9** | | | |

| **ACTIVITY 10 - SYSTEMS INSTALLATION SUBSTANTIAL COMPLETION** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **10.1** | Electrification Foundation and infrastructure works —all locations within Lot 4 | L.S. | |
| **10.2** | Catenary system and conductors — complete | L.S. | |
| **10.3** | Sectioning, insulation, substation and sectioning post works — complete | L.S. | |
| **10.4** | Switchyard and electrical distribution works — complete | L.S. | |
| **10.5** | Protection, metering, earthing and safety systems — complete | L.S. | |
| **10.6** | SCADA and telecommunication works — complete | L.S. | |
| **10.7** | Environmental and dismantling works — complete | L.S. | |

| | | | |
|---|---|---|---|
| **10.8** | All tunnel electromechanical works — Lot 4 complete (ventilation, fire detection, lighting, emergency, evacuation and all associated systems, per Employer's Requirements and approved detailed design) | L.S. | |
| **TOTAL ACTIVITY 10** | | | |

| **ACTIVITY 11 - TESTING AND COMMISSIONING** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **11.1** | Pre-commissioning checks and static testing — all systems | L.S. | |
| **11.2** | Dynamic testing and trial running (track geometry, ride quality, systems integration) | L.S. | |
| **11.3** | Electrification and power systems commissioning and acceptance tests | L.S. | |
| **11.4** | Tunnel electromechanical systems commissioning and acceptance tests | L.S. | |
| **11.5** | Station systems commissioning and acceptance —İstanbul Airport Station | L.S. | |
| **11.6** | Safety demonstration, regulatory acceptance and authority approvals — all applicable Turkish national authorities and TCDD operational acceptance | L.S. | |
| **11.7** | Notified Body (NoBo) engagement, EC Verification process and issuance of EC Verification Certificates — all subsystems, per approved Certification Plan | L.S. | |
| **11.8** | Assessment Body (AsBo) engagement, CSM-RA Safety Assessment and issuance of Safety Assessment Report — condition precedent to Taking-Over Certificate | L.S. | |
| **TOTAL ACTIVITY 11** | | | |

| **ACTIVITY 12 - FINAL ACCEPTANCE** | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **12.1** | Completion of all outstanding snagging / punch-list items post Taking-Over | L.S. | |
| **12.2** | Submission and acceptance of complete As-Built documentation — all disciplines | L.S. | |
| **12.3** | Defects Notification Period obligations (maintenance, remediation, inspections) | L.S. | |
| **TOTAL ACTIVITY 12** | | | |

| ACTIVITY 13 - DAAB | | | |
|---|---|---|---|
| **Item No** | **Deliverable** | **Unit** | **Lump Sum Price (₺)** |
| **13.1** | Establishment and operation of the Dispute Avoidance and Adjudication Board (DAAB) in accordance with PCC Clause 21 | L.S. | |
| **TOTAL ACTIVITY 12** | | | |

## PROVISIONAL SUM

| Item No. | Description | Unit | | Amount (₺) |
|---|---|---|---|---|
| P.1 | Provisional Sums | L.S. | | 702,000,000.00 |
| P.2 | Provisional Sums for livelihood support | L.S. | | 750,000,000.00 |
| **TOTAL PROVISIONAL SUM** | | | | |

**LOT 4 — SUMMARY PRICE TABLE**

| ACTIVITY | Description | Lump Sum Price (₺) |
|---|---|---|
| **0** | Mobilization | |
| **1** | Design Completion | |
| **2** | Relocation of Existing Infrastructure | |
| **3** | Alignment Infrastructure and Slope Stabilization | |
| **4** | Soil improvement works | |
| **5** | Structural works: Minor structures (culverts, underpasses, overpasses, Cut-and-Cover Tunnels…. Etc.) | |
| **6** | Structural works: Crossing obligations (Engineering Structures Bridges and Viaducts) | |
| **7** | Structural works: Tunnels | |
| **8** | Station works Sabiha Gökçen Station | |
| **9** | Superstructure (Track) Works Substantial Completion | |
| **10** | Systems Installation Substantial Completion | |
| **11** | Testing and Commissioning | |
| **12** | Final Acceptance | |

| | | |
|---|---|---|
| **13** | Establishment and operation of the DAAB | |
| **P.1** | Provisional Sum | |
| **P.2** | Provisional Sum for Livelihood support | |
| **TOTAL CONTRACT PRICE - LOT 4** | | |

# Schedule of Payments

Schedule of Performance Guarantees and Performance Damages (Not Applicable)

# Technical Proposal Forms

1. Design Proposal
2. Construction Management Strategy
3. Method Statements for construction activities
4. Sustainable Procurement Proposal
5. Code of Conduct for Contractor's Personnel (ES)
6. Work Program
7. Contractor's Personnel Organization Chart
8. Risk Assessment and Proposed Management Plan
9. Contractor's Equipment
10. Subcontractors
11. Local Labour Method Statement
12. Covenant of Integrity for EBRD
13. AIIB's Covenant of Integrity
14. Others

# Design Proposal

The Proposer shall submit a design proposal which addresses as a minimum the following:

(a) organizational arrangements for the design including: team structure, roles and responsibilities, interface arrangements, design review and approval procedures and quality assurance arrangements;

(b) Proposed design deliverables

(c) design statement setting out how the Employers Requirements will be achieved;

(d) Any added value the Proposer will bring including examples of innovative aspects of the design;

(e) comments on the Employer's Requirements, including:

i. status of the information available and relevant design issues for the Works;
ii. comments on any errors, defects or ambiguities noted in the Employer's Requirements; and
iii. details of any exceptions in the conceptual design taken to the Employer's Requirements;

(f) Sustainable Procurement: sustainability aspects (e.g. energy efficiency, reduction of wastages, material reduction, sources of materials etc.) demonstrating the Proposer's approach and commitment to sustainable design and construction practices;

(g) strategy for gathering baseline ES information in time to inform design development;

(h) details of how the ES requirements, and any proposal to enhance ES outcomes, will be incorporated into all design stages, and how the implications for the construction phase has been considered;

(i) details of the approach to managing risks, stakeholder engagement, consultation and environmental permits/consents;

(j) value engineering (value management) arrangements, including consideration of ESissues; and

(k) software systems intended to be employed for planning, design, records and reporting.

# Construction Management Strategy

The Proposer shall submit a construction management strategy which addresses as a minimum:

(a) organizational arrangements for the construction management including: team structure, roles and responsibilities, interface arrangements, approval procedures and quality assurance arrangements;
(b) subcontractor selection and management;
(c) proposals for induction and training of all personnel attending site;
(d) stakeholder engagement arrangements, in coordination with the Project SEP and grievance mechanism requirements;
(e) arrangements for obtaining,managing and maintaining consents, permits and approvals, including coordination with the Employer/Engineer where such consents, permits and approvals are under the responsibility of the Employer;
(f) site setup proposals including access, accommodation, welfare facilities, traffic interface, arrangement for plant and material storage;
(g) construction phasing proposals including sequence of work and management of conflicting activities;
(h) arrangements to ensure that geotechnical investigations and other advance works are carried out in accordance with the applicable the ESHS requirements;
(i) risk management approach for geotechnical and subsurface aspects of the Works;
(j) quality management system including a draft of the quality management plan;
(k) sustainability aspects demonstrating the Proposer's approach and commitment to sustainable construction practices (e.g. energy efficiency, waste reduction, material optimization and responsible sourcing of materials etc.);
(l) preparation, approval and implementation of the Contractor's ESMP and relevant sub-management plans;
(m) preparation, approval and implementation of the Contractor's Occupational Health and Safety Management Plan and Procedures;
(n) grievance redress mechanisms for worker and community;
(o) reporting arrangements, including topics (that include ESHS) and timescales in accordance with the Particular Conditions – Part B Sub-Clause 4.20;
(p) arrangements for testing upon completion of the works;
(q) arrangements for site handover, including completion of as-built drawings, preparation of operation and maintenance manuals, site reinstatement and any other relevant aspects; and

# Method Statement for key construction activities

*The Proposer shall provide its method statements for addressing the following risks and carrying out the following construction activities. Each method statement shall describe the proposed approach, the level of staffing and experience, the safe system of work, and the equipment or materials to be used to manage risk or activity in accordance with the Employer's Requirements. Further, the Proposer shall provide its method statement for engaging local labour, in accordance with the Local Labour Method Statement included in this Section IV, Proposal Forms.]*

# Sustainable Procurement Proposal

*[**Note to Proposer**: In addition to submitting the **required** ES Management Strategies and Implementation Plans, the Proposer shall provide its proposal to demonstrate how additional sustainable procurement requirements, if any, specified in Section VII- Works' Requirements would be addressed. The Proposer shall also provide its proposal, if any, for exceeding the sustainable procurement requirements.]*

# Code of Conduct for Contractor's Personnel (ES) Form

## CODE OF CONDUCT FOR CONTRACTOR'S PERSONNEL

We are the Contractor, [*enter name of Contractor*]. We have signed a contract with [*enter name of Employer*] for [*enter description of the Works*]. These Works will be carried out at [*enter the Site and other locations where the Works will be carried out*]. Our contract requires us to implement measures to address environmental and social risks related to the Works, including the risks of sexual exploitation, sexual abuse and sexual harassment.

**Note to the Proposer**:

**The minimum content of the Code of Conduct form as set out by the Employer shall not be substantially modified**. However, the Proposer may add requirements as appropriate, including to take into account Contract-specific issues/risks.

The Proposer shall initial and submit the Code of Conduct form as part of its proposal.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Works. It applies to all our staff, labourers and other employees at the Works Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as "**Contractor's Personnel"** and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractor's Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

### REQUIRED CONDUCT

Contractor's Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. maintain a safe working environment including by:
    a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
    b. wearing required personal protective equipment;

c. using appropriate measures relating to chemical, physical and biological substances and agents; and

d. following applicable emergency operating procedures.

4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. not engage in any form of Sexual Harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;
8. not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH);
11. report violations of this Code of Conduct; and
12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the grievance mechanism for Contractor's Personnel or the project's Grievance Redress Mechanism.

**RAISING CONCERNS**

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter name of the Contractor's Social Expert with relevant experience in handling sexual exploitation, sexual abuse and sexual harassment cases, or if such person is not required under the Contract, another individual designated by the Contractor to handle these matters*] in writing at this address [ ] or by telephone at [ ] or in person at [ ]; or
2. Call [ ] to reach the Contractor's hotline *(if any)* and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

**CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT**

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Contractor's contact person with relevant experience*] requesting an explanation.

Name of Contractor's Personnel: [insert name]

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Contractor:

Signature: _____

**ATTACHMENT 1:** Behaviors constituting Sexual Exploitation and Abuse (SEA) and behaviors constituting Sexual Harassment (SH)

# ATTACHMENT 1 TO THE CODE OF CONDUCT FORM

## BEHAVIORS CONSTITUTING SEXUAL EXPLOITATION AND ABUSE (SEA) AND BEHAVIORS CONSTITUTING SEXUAL HARASSMENT (SH

The following non-exhaustive list is intended to illustrate types of prohibited behaviors.

(1) **Examples of sexual exploitation and abuse** include, but are not limited to:

- A Contractor's Personnel tells a member of the community that he/she can get them jobs related to the work site (e.g. cooking and cleaning) in exchange for sex.
- A Contractor's Personnel that is connecting electricity input to households says that he can connect women headed households to the grid in exchange for sex.
- A Contractor's Personnel rapes, or otherwise sexually assaults a member of the community.
- A Contractor's Personnel denies a person access to the Site unless he/she performs a sexual favor.
- A Contractor's Personnel tells a person applying for employment under the Contract that he/she will only hire him/her if he/she has sex with him/her.

(2) **Examples of sexual harassment in a work context**

- Contractor's Personnel comment on the appearance of another Contractor's Personnel (either positive or negative) and sexual desirability.
- When a Contractor's Personnel complains about comments made by another Contractor's Personnel on his/her appearance, the other Contractor's Personnel comment that he/she is "asking for it" because of how he/she dresses.
- Unwelcome touching of a Contractor's or Employer's Personnel by another Contractor's Personnel.
- A Contractor's Personnel tells another Contractor's Personnel that he/she will get him/her a salary raise, or promotion if he/she sends him/her naked photographs of himself/herself.

# Work Program

The Proposer shall set out a work program for design and construction of the Works to be undertaken. The proposed work program shall be developed based on the Employer's Requirements and shall consider the following key activities:

(a) design of the Works, including the submission of the design deliverables, review and approval of the design by the Engineer;

(b) processes and deliverables needed to commence the Works;

(c) execution of the Works within the Time for Completion, highlighting activities imposing constraints on the construction sequence;

(d) testing, commissioning and handing over of the completed Works;

(e) No-objection to the Contractor's MSIPs, which collectively form the C-ESMP, in accordance with the Particular Conditions Part B- Sub-Clause 4.1;

(f) Constitution of the DAAB; and

# Contract Personnel Organization Chart

The Proposer shall provide an organization chart illustrating the proposed management structure and reporting lines for delivery of the Contract. The organization chart shall include the names of all Key Personnel.

# Risk assessment and Proposed Management Plan

The Proposer should submit a risk register identifying the hazards anticipated during the implementation of the contract.

For the key hazards ranked by impact, the risk register shall include a description of the hazard, an assessment of the potential impact on health and safety, environment, cost, program or other, and the proposed mitigation strategy for each hazard.

*[**Note to the Proposer**: (i) If the contract has been assessed to present potential or actual cyber security risks,, also include method statement, management strategies and implementation plans and innovations, to manage cyber security risks; (ii) if there are assessed supply chain risks, the risk assessment and proposed management plans, must include proposed supply chain risks management plan.]*

# FORM EQU
# Contractor's Equipment

The Proposer shall provide its strategy for acquiring and maintaining the key equipment that may be needed to execute the Works in accordance with the Work Program. In the strategy, the Proposer shall specify the manufacturer, capacity, model, power rating, age and maintenance condition, and how it will ensure that the equipment is maintained in accordance with manufacturer's specifications for the duration of the Contract. The Proposer shall specify whether it will own, lease, rent or specially manufacture the key equipment.

| | | |
|---|---|---|
| Item of equipment | | |
| Equipment information | Name of manufacturer | Model and power rating |
| | Capacity | Year of manufacture |
| Current status | Current location | |
| | Details of current commitments | |
| Source | Indicate source of the equipment<br>☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured | |

Omit the following information for equipment owned by the Proposer.

| | | |
|---|---|---|
| Owner | Name of owner | |
| | Address of owner | |
| | Telephone | Contact name and title |
| | Fax | Telex |
| Agreements | Details of rental / lease / manufacture agreements specific to the project | |
| | | |
| | | |

# Subcontractors

The following Specialized Subcontractors are proposed for parts of the Works permitted by the Employer [ state "Not Applicable", if not permitted]

| No. | Part of the Works to be subcontracted | Specialized Subcontractor's name and address | Nationality | Specific Experience |
|---|---|---|---|---|
| | | | | |
| | | | | |

The following [ add: "other" if Specialized Subcontractors are included above. Proposers are free to propose more than one subcontractor for each part of the Works.] Subcontractors are proposed.

| No. | Part of the Works to be subcontracted | Subcontractor's name and address | Nationality | Specific Experience |
|---|---|---|---|---|
| | | | | |
| | | | | |

# Personnel

## FORM PER -1

## Key Personnel qualifications and resource schedule

Proposers should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate. Proposers should submit a fully detailed Key Personnel resource schedule for the whole contract implementation period. The resource schedule must include:

- the name and role for each Key Personnel position
- The duration of each Key Personnel appointment
- The level of effort (time) allocated to each Key Personnel position and its distribution throughout the contract implementation period.

| | **Title of position** | **Name of candidate** | |
|---|---|---|---|
| *1.* | *[Contractor's Representative]* | | |
| *2.* | *[Cyber security Expert/s] [Include as required]* | | |
| ***Key Personnel for Design*** | | | |
| *3.* | *[Design Manager]* | | |
| *4.* | *[Environmental Impact Assessment Specialist]* | | |
| *5.* | *[Social Impact Assessment Specialist]* | | |
| *6.* | *[Health and Safety Specialist]* | | |
| *7.* | *[Biodiversity, Air quality, Noise etc. Specialists]* | | |
| *8.* | *[Modify/add others as appropriate]* | | |
| ***Key Personnel for Construction*** | | | |
| *9.* | *[Construction Manager]* | | |
| *10.* | *[Environmental Specialist]* | | |
| *11.* | *[Health and Safety Specialist]* | | |
| *12.* | *[Social Specialist]* | | |
| *13.* | *Survey Manager* | | |
| *14.* | *[***Sexual Exploitation, Abuse and Harassment Expert(s)***<br>*[Where a Project SEA risks are assessed to be substantial or high, Key Personnel shall include an expert (s) with relevant experience in addressing sexual exploitation, sexual abuse and sexual harassment cases]]* | | |
| *15.* | *[Modify/add others as appropriate]* | | |

# FORM PER-2:
# Resume and Declaration
# Contractor's Representative and Key Personnel

| **Name of Proposer** |
|---|

| **Position** ***[#1]: [title of position from Form PER-1]*** | | |
|---|---|---|
| **Personnel information** | **Name:** | **Date of birth:** |
| | **Address:** | **E-mail:** |
| | | |
| | **Professional qualifications:** | |
| | **Academic qualifications:** | |
| | **Language proficiency:** *[language and levels of speaking, reading and writing skills]* | |
| **Details** | | |
| | **Address of employer:** | |
| | **Telephone:** | **Contact (manager / personnel officer):** |
| | **Fax:** | |
| | **Job title:** | **Years with present employer:** |

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

| **Project** | **Role** | **Duration of involvement** | **Relevant experience** |
|---|---|---|---|
| *[main project details]* | *[role and responsibilities on the project]* | *[time in role]* | *[describe the experience relevant to this position]* |
| | | | |
| | | | |

| | | | |
|---|---|---|---|
| | | | |

## Declaration

I, the undersigned Key Personnel, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Proposal:

| **Commitment** | **Details** |
|---|---|
| **Commitment to duration of contract:** | *[insert period (start and end dates) for which this Key Personnel is available to work on this contract]* |
| **Time commitment:** | *[insert the number of days/week/months/ that this Key Personnel will be engaged]* |

I understand that any misrepresentation or omission in this Form may:

(a) be taken into consideration during Proposal evaluation;

(b) result in my disqualification from participating in the Proposal;

(c) result in my dismissal from the contract.

**Name of Key Personnel:** ***[insert name]*** _____

Signature: _____

Date: (day month year): _____

**Countersignature of authorized representative of the Proposer:**

Signature: _____

Date: (day month year): _____

# Local Labour Method Statement

This Method Statement demonstrates Proposer's approach and methodology to engaging local labour[1] during the execution of the contract in accordance with the requirement specified in ITP 18.2(d).

In developing this Method Statement, the Proposer shall exercise its best efforts to present its approach and methodology for the engagement of local labour that the Proposer will be able to deliver during contract execution and comply with the requirement for allocating not less than 30% of total labour cost[2] to local labour. This Method Statement will be part of the contract and updated as appropriate during contract execution, subject to the Engineer's approval.

The Proposer's approach and methodology for the engagement of local labour, will include but not be limited to the following aspects:

- The total number of labour employed by skill category, expressed as Full-time Equivalent (FTE)[3] over the duration of the contract. Please use the formula below to calculate the FTE over the duration of the contract for each skill category[4]:

$$\text{FTE Skill Category (X) over the duration of the contract} = \frac{\text{Total estimated labour hours over the duration of the contract in Skill Category (X)}}{\text{Number of available full-time labour hours estimated per year multiplied by the estimated duration of the contract (in years)}}$$

- The percentage of total FTE to be filled by local labour per skill category;
- The proposed hiring strategy (e.g., direct hiring, subcontracting);
- Any plans and programs for training, skills development, or upskilling of local labour.

**This Method Statement shall not include any financial information (e.g., wages in dollar terms).**

**Notes for Proposers:**

[1] Local labour excludes Contractor's foreign personnel. Foreign personnel who are already working in the Borrower's country on another project/contract shall also not be treated as local labour.

[2] For the purpose of this requirement, the Proposer should consider "costs" as only wages.

[3] FTE should be calculated for each skill category. Skill categories are Skilled, Semi-skilled, and Unskilled labour.

[4] In the formula, the number of available full-time labour hours per worker per year can be estimated based on the specifics of the contract, using a calculation such as: 40 hours/week x 52 weeks/year = 2080 hours/year. This can be multiplied by the estimated duration (in years) of the contract.

# COVENANT OF INTEGRITY

Dear Sir or Madam,

Re: Procurement Process: [insert the reference] (the "Procurement Process")

Contract: [insert the title(s) of the contract(s) (lots), as appropriate, for which the Letter of Tender is submitted] (the "Contract")

We acknowledge that the contract(s) subject to this tender process are intended to be jointly co-financed by the World Bank ("WB") and the European Bank for Reconstruction and Development ("EBRD", EBRD and WB jointly hereafter the "Banks"). The Banks and the Republic of Türkiye ("Client") have agreed that this tender process is governed by the World Bank Procurement Regulations for IPF Borrowers dated September 2025.

Being duly authorised to represent and act on behalf of [insert the Participant's name], we, the undersigned, declare and covenant that neither we nor anyone, including any of our subsidiaries and affiliates, and all of our directors, employees, agents, representatives or JVCA partners, as well as any Subcontractors as well as concessionaires, where these exist, acting on our behalf with due authority or with our knowledge or consent, or facilitated by us, has engaged, or will engage, in any Prohibited Practice (as defined below) in connection with the Procurement Process or in the execution or supply of any works, goods, services or consultancy services for the Contract and covenant to so inform you if any instance of any such Prohibited Practice shall come to the attention of any person in our organisation having responsibility for ensuring compliance with this Covenant.

We declare that we have paid, or will pay, the following commissions, gratuities, or fees with respect to the Procurement Process or execution of the Contract[5]:

| Name of Borrower | Address | Reason | Amount |
|---|---|---|---|
| | | | |
| | | | |

We shall, for the duration of the Procurement Process and, if we are successful, for the duration of the Contract, appoint and maintain in office an officer, who shall be a person reasonably satisfactory to you and to whom you shall have full and immediate access, having the duty, and the necessary powers, to ensure compliance with this Covenant.

We declare and covenant that, except for the matters disclosed in this Covenant of Integrity:

(i) we, our current subsidiaries and affiliates, and all of our current directors, employees, agents, representatives or JVCA partners, where these exist, have not been convicted in any court of any offence involving a Prohibited Practice in connection with any procurement process or provision of works, goods, services or consultancy services during the ten years preceding the date of this Covenant;

[5] If none has been paid or is to be paid, state "*None.*"

(ii) none of our current directors, employees, agents, representatives or those of a JVCA partner, where these exist, has been dismissed or has resigned from any employment on the grounds of being implicated in any Prohibited Practice, during the ten years preceding the date of this Covenant;

(iii) we, our subsidiaries and affiliates and our directors, employees, agents, representatives or JVCA partners, where these exist, are currently not excluded or otherwise sanctioned by any major Multilateral Development Bank or International Financial Institution (including African Development Bank Group, Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank or World Bank Group) from participation in a procurement procedure or from entering into a contract with any of such institutions on the grounds of engaging in a Prohibited Practice;

(iv) (a) we, our directors, subsidiaries and affiliates, as well as any subcontractors, or suppliers or affiliates of the subcontracts or supplier are currently not subject to any economic or financial sanctions or restrictive measures imposed by a resolution of the United Nations Security Council under Chapter VII of the UN Charter and (b) we are currently not owned (directly or indirectly) or controlled by, or acting on behalf of, any so designated person or entity; and

(v) we further undertake to immediately inform the Client and the [Bank][EBRD] in the event any of the declarations, representations or covenants set out above is no longer true or correct in any respect, cooperate in good faith with the [Bank][EBRD] and its representatives in assessing the event and respond promptly and in reasonable detail to any request for information from the [Bank][EBRD] regarding any such event.

If applicable, provide full disclosure of any convictions, dismissal, resignations, exclusions or other information relevant to Articles (i)-(iv) in the box below.

| Name of Entity Required to be Disclosed | Reason Disclosure is Required[6] |
|---|---|
| | |
| | |

We understand that a misrepresentation in relation to or an omission to provide full disclosure of the information as required by this Covenant may result in the rejection of our submission and it may also lead to Enforcement Actions and Disclosure Actions as set out in the [Bank's][EBRD's] Enforcement Policy and Procedures.

For the purpose of this Covenant, the terms set forth below define Prohibited Practices as:

(i) a **Coercive Practice** which means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of any party to influence improperly the actions of a party;

[6] For each matter disclosed, provide details of the measures that were taken, or shall be taken, to ensure that neither the disclosed entity nor any of its directors, employees, agents or representatives commits any Prohibited Practice in connection with the Procurement Process or the execution of the Contract.

If the provisions is not applicable, please state "Not applicable".

(ii) a **Collusive Practice** which means an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

(iii) a **Corrupt Practice** which means the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

(iv) a **Fraudulent Practice** which means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(v) a **Misuse of Bank's Resources or Bank Assets** which means improper use of the [Bank's][EBRD's] Resources or [Bank][EBRD] Assets, committed either knowingly or recklessly;

(vi) an **Obstructive Practice** which means any of (1) destroying, falsifying, altering or concealing of evidence material to a [Bank][EBRD] investigation, which impedes the [Bank's][EBRD's] investigation; (2) making false statements to investigators in order to materially impede a [Bank][EBRD] investigation into allegations of a Prohibited Practice; (3) failing to comply with requests to provide information, documents or records in connection with a [Bank][EBRD] investigation; (4) threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to a [Bank][EBRD] investigation or from pursuing the investigation; or (5) materially impeding the exercise of the [Bank's][EBRD's] contractual rights of audit or inspection or access to information; and

(vii) a **Theft** which means the misappropriation of property belonging to another party.

At any time following our submission to the Client, we shall permit, and shall cause our JVCA partners, as well as our directors, employees, agents, Subcontractors, concessionaries and any other third parties engaged or involved for any part of the Contract to permit the [Bank][EBRD] and/or persons appointed by them, the right to inspect and copy all accounts, books, records, and other documents (on any media or in any format) relating to the Procurement Process and execution of the Contract and to have any such accounts, books, records, and documents audited the [Bank][EBRD] and by auditors appointed by the [Bank][EBRD]. We accept to preserve these records generally in accordance with applicable law but in any case for at least six years from the date of substantial completion of the Contract.

| | |
|---|---|
| Name: | |
| In the capacity of: | |
| Signed: | |
| Duly authorised to sign for and on behalf of: | |
| Date: | |

## AIIB's COVENANT OF INTEGRITY

Invitation of Bids/Proposals/Contract No. _____

To: _____

We declare and undertake that neither we nor anyone, including any member of our joint venture or any of our suppliers, contractors, sub-contractors, consultants, sub-consultants, where these exist, acting on our behalf with due authority or with our knowledge or consent, or facilitated by us, has engaged, or will engage, in any activity prohibited under AIIB's Policy on Prohibited Practices (AIIB's Policy) in connection with the present procurement process and (in case of award) the execution of the above- referenced contract ("Contract"), including any amendments thereto.

We acknowledge that AIIB's participation in the financing of the Contract is subject to AIIB's Policy. As such, we acknowledge that AIIB will not be able to participate in the financing of the Contract if we, including any member of our joint venture, or any of our suppliers, contractors, subcontractors, consultants or sub-consultants are ineligible as a result of a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations or are on any of the following lists (AIIB's Sanction Lists):

[add lists and websites]

We shall permit, and shall cause our sub-contractors, sub-consultants, agents (whether declared or not), personnel, consultants, service providers or suppliers, to permit the AIIB to inspect all accounts, records, and other documents relating to the procurement process and/or Contract execution (in the case of award), and to have them audited by auditors appointed by AIIB.

We agree to preserve all accounts, records, and other documents (whether in hard copy or electronic format) related to the procurement and execution of the Contract.

Name: _____ In the capacity of: _____

Duly empowered to sign in the name and on behalf of[7]: _____

Signature: _____ Dated: _____

[7] In case of joint venture, the name of the joint venture shall be inserted here, and the Covenant shall be signed by the person duly authorized to sign the application, bid or proposal on behalf of the applicant, proposer, bidder or consultant.

# Qualification Forms

## Form ELI 1.1

## Proposer Information Sheet

Date: _____

RFP No.: _____

Page _____ of _____ pages

| |
|---|
| 1. Proposer's Legal Name |
| 2. In case of JV, legal name of each party: |
| 3. Proposer's actual or intended Country of Registration: |
| 4. Proposer's Year of Registration: |
| 5. Proposer's Legal Address in Country of Registration: |
| 6. Proposer's Authorized Representative Information<br>Name:<br>Address:<br>Telephone/Fax numbers:<br>Email Address: |

7. Attached are copies of original documents of

☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITP 4.4

☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITP 4.1

☐ In case of state-owned enterprise or institution, in accordance with ITP 4.6, documents establishing:

- Legal and financial autonomy
- Operation under commercial law
- Establishing that the Proposer is not under the supervision of the Employer

8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. The successful Proposer shall provide additional information on beneficial ownership, using the Beneficial Ownership Disclosure Form.

# Form ELI 1.2

# Party to JV Information Sheet

(*[The following table shall be filled in for contracts performed by the Proposer, and each member of a Joint Venture]*Date: _____

RFP No.: _____

Page _____ of _____ pages

| |
|---|
| 1. Proposer's Legal Name: |
| 2. JV's Party legal name: |
| 3. JV's Party Country of Registration: |
| 4. JV's Party Year of Registration: |
| 5. JV's Party Legal Address in Country of Registration: |
| 6. JV's Party Authorized Representative Information<br>Name:<br>Address:<br>Telephone/Fax numbers:<br>Email Address: |
| 7. Attached are copies of original documents of<br>☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITP 4.4.<br>☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Employer, in accordance with ITP 4.6.<br>8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. The successful Proposer shall provide additional information on beneficial ownership for each JV member using the Beneficial Ownership Disclosure Form. |

# Form CON – 2

# Historical Contract Non-Performance, Pending Litigation and Litigation History

***[The following table shall be filled in for the Proposer and for JVs, each member of the Joint Venture]***

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
JV Member's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

| Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria | | | |
|---|---|---|---|
| ☐ Contract non-performance did not occur since 1st January *[insert year]*<br>☐ Contract(s) not performed since 1st January *[insert year]* | | | |
| **Year** | **Non-performed portion of contract** | **Contract Identification** | **Total Contract Amount (current value, currency, exchange rate and US$ equivalent)** |
| *[insert year]* | *[insert amount and percentage]* | Contract Identification: *[indicate complete contract name/ number, and any other identification]*<br>Name of Employer: *[insert full name]*<br>Address of Employer: *[insert street/city/country]*<br>Reason(s) for nonperformance: *[indicate main reason(s)]* | *[insert amount]* |
| Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria | | | |
| ☐ No pending litigation<br>☐ Pending litigation | | | |

| Year of dispute | Amount in dispute (currency) | Contract Identification | Total Contract Amount (currency), USD Equivalent (exchange rate) |
|---|---|---|---|
| | | Contract Identification: _____<br>Name of Employer: _____<br>Address of Employer: _____<br>Matter in dispute: _____<br>Party who initiated the dispute: _____<br>Status of dispute: _____ | |

Litigation History in accordance with Section III, Evaluation and Qualification Criteria

☐ No Litigation History
☐ Litigation History

| Year of award | Outcome as percentage of Net Worth | Contract Identification | Total Contract Amount (currency), USD Equivalent (exchange rate) |
|---|---|---|---|
| *[insert year]* | *[insert percentage]* | Contract Identification: [indicate complete contract name, number, and any other identification]<br>Name of Employer: *[insert full name]*<br>Address of Employer: *[insert street/city/country]*<br>Matter in dispute: *[indicate main issues in dispute]*<br>Party who initiated the dispute: *[indicate "Employer" or "Contractor"]*<br>Reason(s) for Litigation and award decision *[indicate main reason(s)]* | *[insert amount]* |

# Form CON – 3

# Environmental and Social Performance Declaration

*[The following table shall be filled in for the Proposer and for JVs, each member of the Joint Venture and each Specialized Subcontractor]*

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

## Environmental and Social Performance Declaration

in accordance with Section III, Evaluation and Qualification Criteria

☐ **No suspension or termination of contract**: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental and Social (ES) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.5.

☐ **Declaration of suspension or termination of contract**: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental and Social (ES) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.5. Details are described below:

| **Year** | **Suspended or terminated portion of contract** | **Contract Identification** | **Total Contract Amount (current value, currency, exchange rate and US$ equivalent)** |
|---|---|---|---|
| *[insert year]* | *[insert amount and percentage]* | Contract Identification: *[indicate complete contract name/ number, and any other identification]*<br>Name of Employer: *[insert full name]*<br>Address of Employer: *[insert street/city/country]*<br>Reason(s) for suspension or termination: *[indicate main reason(s) e.g. gender-based violence; sexual exploitation or sexual abuse breaches]* | *[insert amount]* |
| *[insert year]* | *[insert amount and percentage]* | Contract Identification: *[indicate complete contract name/ number, and any other identification]* | *[insert amount]* |

| | | | |
|---|---|---|---|
| | | Name of Employer: *[insert full name]*<br>Address of Employer: *[insert street/city/country]*<br>Reason(s) for suspension or termination: *[indicate main reason(s)]* | |
| … | … | *[list all applicable contracts]* | … |
| **Performance Security called by an employer(s) for reasons related to ES performance** | | | |
| **Year** | **Contract Identification** | | **Total Contract Amount (current value, currency, exchange rate and US$ equivalent)** |
| *[insert year]* | Contract Identification: *[indicate complete contract name/ number, and any other identification]*<br>Name of Employer: *[insert full name]*<br>Address of Employer: *[insert street/city/country]*<br>Reason(s) for calling of performance security: *[indicate main reason(s) e.g. gender-based violence; sexual exploitation or abuse breaches]* | | *[insert amount]* |
| | | | |

# Form CON – 4

# Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment Performance Declaration

*[The following table shall be filled in for the Proposer, each member of a Joint Venture and each Subcontractor]*

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Subcontractor's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

**SEA and/or SH Declaration**

**in accordance with Section III, Evaluation and Qualification Criteria**

We:

- ☐ (a) have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations
- ☐ (b) are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations
- ☐ (c) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations. An arbitral award on the disqualification case has been made in our favor.
- ☐ (d) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations for a period of two years. We have subsequently demonstrated that we have adequate capacity and commitment to comply with SEA/ SH obligations.
- ☐ (e) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations for a period of two years. We have attached evidence demonstrating that we have adequate capacity and commitment to comply with SEA/ SH obligations.

***[If (c) above is applicable, attach evidence of an arbitral award reversing the findings on the issues underlying the disqualification.]***

***[If (d) or (e) above are applicable, provide the following information:]***

Period of disqualification: From: _____ To: _____

If previously provided on another Bank financed works contract, details of evidence that demonstrated adequate capacity and commitment to comply with SEA/ SH obligations (**as per (d) above)**

Name of Employer: _____

Name of Project: _____

Contract description: _____

| |
|---|
| Brief summary of evidence provided: _____<br>_____<br>Contact Information: (Tel, email, name of contact person): _____<br>_____ |
| As an alternative to the evidence under (d), other evidence demonstrating adequate capacity and commitment to comply with SEA/ SH obligations (**as per (e) above)** *[attach details as appropriate]*. |

# Form FIN – 3.1

# Financial Situation and Performance

*[The following table shall be filled in for contracts performed by the Proposer, and each member of a Joint Venture]*

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

**1. Financial data**

| **Type of Financial information in (currency)** | **Historic information for previous _____*years*, _____ (amount in currency, currency, exchange rate*, USD equivalent)** | | | | |
|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Year4 | Year 5 |
| Statement of Financial Position (Information from Balance Sheet) | | | | | |
| Total Assets (TA) | | | | | |
| Total Liabilities (TL) | | | | | |
| Total Equity/Net Worth (NW) | | | | | |
| Current Assets (CA) | | | | | |
| Current Liabilities (CL) | | | | | |
| Working Capital (WC) | | | | | |
| Information from Income Statement | | | | | |
| Total Revenue (TR) | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Profits Before Taxes (PBT) | | | | | |
| Cash Flow Information | | | | | |
| Cash Flow from Operating Activities | | | | | |

*Refer to ITP 38.1 for the exchange rate

**2. Sources of Finance**

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

| No. | Source of finance | Amount (US$ equivalent) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| | | |

**3. Financial documents**

The Proposer and its parties shall provide copies of financial statements for _____years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

(a) reflect the financial situation of the Proposer or in case of JV member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements[8] for the _____years required above; and complying with the requirements

[8] If the most recent set of financial statements is for a period earlier than 12 months from the date of Bid, the reason for this should be justified.

# Form FIN - 3.2
# Average Annual Construction Turnover

*[The following table shall be filled in for contracts performed by the Proposer, and each member of a Joint Venture]*

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

| | **Annual turnover data (construction only)** | | |
|---|---|---|---|
| **Year** | **Amount Currency** | **Exchange rate** | **USD equivalent** |
| *[indicate year]* | *[insert amount and indicate currency]* | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Average Annual Construction Turnover * | | | |

* See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2.

# Form FIN 3.3
# Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section III, Evaluation and Qualification Criteria

| Source of financing | Amount (US$ equivalent) |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |

# Form FIN – 3.4
# Current Contract Commitments / Works in Progress

Proposers and each partner to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

| Current Contract Commitments | | | | | |
|---|---|---|---|---|---|
| **No.** | **Name of Contract** | **Employer's Contact Address, Tel, Fax** | **Value of Outstanding Work [Current US$ Equivalent]** | **Estimated Completion Date** | **Average Monthly Invoicing Over Last Six Months [US$/month)]** |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| | | | | | |

# Form EXP - 4.1
# General Construction Experience

*[The following table shall be filled in for contracts performed by the Proposer, and each member of a Joint Venture]*

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

| Starting Year | Ending Year | Contract Identification | Role of Proposer |
|---|---|---|---|
| | | Contract name: _____<br>Brief Description of the Works performed by the Proposer: _____<br>Amount of contract: _____<br>Name of Employer: _____<br>Address: _____ | |
| | | Contract name: _____<br>Brief Description of the Works performed by the Proposer: _____<br>Amount of contract: _____<br>Name of Employer: _____<br>Address: _____ | |
| | | Contract name: _____<br>Brief Description of the Works performed by the Proposer: _____<br>Amount of contract: _____<br>Name of Employer: _____<br>Address: _____ | |

# Form EXP - 4.2(a)

# Specific Construction and Contract Management Experience

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

| **Similar Contract No.** | **Information** | | | |
|---|---|---|---|---|
| Contract Identification | | | | |
| Award date | | | | |
| Completion date | | | | |
| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Subcontractor ☐ |
| Total Contract Amount | | | US$ | |
| If member in a JV or Subcontractor, specify participation in total Contract amount | | | | |
| Employer's Name: | | | | |
| Address:<br>Telephone/fax number<br>E-mail: | | | | |

## Form EXP - 4.2(a) (cont.): Specific Construction and Contract Management Experience (cont.)

| Similar Contract No. | Information |
|---|---|
| Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III: | |
| 1. Amount | |
| 2. Physical size of required works items | |
| 3. Complexity | |
| 4. Methods/Technology | |
| 5. Construction rate for key activities | |
| 6. Other Characteristics | |

# Form EXP - 4.2(b)
# Construction Experience in Key Activities

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

All Subcontractors for key activities must complete the information in this form as per Section III, Evaluation and Qualification Criteria, Sub-Factor 4.2.

1. Key Activity No One: _____

| | **Information** | | | |
|---|---|---|---|---|
| Contract Identification | | | | |
| Award date | | | | |
| Completion date | | | | |
| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Subcontractor ☐ |
| Total Contract Amount | | | US$ | |
| Quantity (Volume, number, or rate of production, as applicable) performed under the contract per year or part of the year | Total quantity in the contract (i) | Percentage participation (ii) | | Actual Quantity Performed (i) x (ii) |
| Year 1 | | | | |
| Year 2 | | | | |
| Year 3 | | | | |
| Year 4 | | | | |
| Employer's Name: | | | | |

| | **Information** |
|---|---|
| Address:<br>Telephone/fax number<br>E-mail: | |

| | **Information** |
|---|---|
| Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III: | |
| | |
| | |
| | |
| | |
| | |

2. Activity No. Two
3. ……

# Form EXP - 4.2(c)
# Specific Experience in Managing ES Aspects

*[The following table shall be filled in for contracts performed by the Proposer, and each member of a Joint Venture]*

Proposer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*
RFP No. and title: *[insert RFP number and title]*
Page *[insert page number]* of *[insert total number]* pages

1. Key Requirement no 1 in accordance with 4.2 (c): _____

| | | | | |
|---|---|---|---|---|
| Contract Identification | | | | |
| Award date | | | | |
| Completion date | | | | |
| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Subcontractor ☐ |
| Total Contract Amount | | | US$ | |
| Details of relevant experience | | | | |

2. Key Requirement no 2 in accordance with 4.2 (c): _____

3. Key Requirement no 3 in accordance with 4.2 (c): _____

4. ....

# Others

Commercial or contractual aspects of the RFP documents that the Proposer would like to discuss with the Employer during clarifications.

# Form of Proposal Security – Demand Guarantee

**Beneficiary:** _____

**Request for Proposals No:** _____

**Date:** _____

**PROPOSAL GUARANTEE No.:** _____

**Guarantor:** _____

We have been informed that _____ (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Proposal (hereinafter called "the Proposal") for the execution of _____ under Request for Proposals No. _____ ("the RFP").

Furthermore, we understand that, according to the Beneficiary's conditions, Proposals must be supported by a Proposal guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Proposal prior to the Proposal validity expiry date set forth in the Applicant's Letter of Proposal, or any extension thereto provided by the Applicant; or

(b) having been notified of the acceptance of its Proposal by the Beneficiary prior to the expiry date of the Proposal validity or any extension thereto provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance Security and, if required, an Environmental and Social (ES) Performance Security, in accordance with the Instructions to Proposers ("ITP") of the Beneficiary's RFP document.

This guarantee will expire: (a) if the Applicant is the successful Proposer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, if required, an Environmental and Social (ES) Performance Security, issued to the Beneficiary in relation to such contract agreement; or (b) if the Applicant is not the successful Proposer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the RFP process; or (ii) twenty-eight days after the expiry date ofthe Proposal validity.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

_____

*[signature(s)]*

# SECTION V - ELIGIBLE COUNTRIES

## Eligibility for the Provision of Goods, Works and non-consulting Services in Bank-Financed Procurement

In reference to **ITP 4.8** and **ITP 5.1**, for the information of the Proposers, at the present time firms, goods and services from the following countries are excluded from this RFP process:

Under **ITP 4.8(a)** and **ITP 5.1**: *none*

Under **ITP 4.8(b)** and **ITP 5.1**: *none*

# SECTION VI - FRAUD AND CORRUPTION
# (Section VI shall not be modified)

## 1. Purpose

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

## 2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v. "obstructive practice" is:

(a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

d. Pursuant to the Bank's Anti-Corruption Guidelines, and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;[26] (ii) to be a nominated[27] sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;

***e.*** Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers),, consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect[28] all accounts, records and other documents relating to relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

26 For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

27 A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

28 Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

# PART 2 –EMPLOYER'S REQUIREMENTS

# SECTION VII. EMPLOYER'S REQUIREMENTS

## TABLE OF CONTENT

Employer's Requirements .....
Project Implementation Arrangements .....
Applicable Technical Specifications, Standards and codes .....
Multi-Contract Structure And Interface Management .....
Scope of the Works .....
Site Information .....
Design Requirements and Deliverables .....
Building Information Modelling Requirements .....
System Integration, RAMS and Safety .....
Testing, Commissioning and Trial Operations .....
Environmental And Social (E&S) Requirements .....
Contractual Performance Framework (New Chapter for Inclusion) .....
Specifications .....
Drawings .....

# 1.Employer's Requirements

## 1.1. General Introduction and Project Overview

The Istanbul North Rail Crossing Project ("INRAIL" or "the Project") is a flagship rail infrastructure investment located at the core of Türkiye's railway network, where east–west and north–south freight and passenger flows converge. At present, the country's only cross-Bosphorus rail link is the Marmaray immersed tube tunnel, an asset primarily designed for passenger services and subject to severe constraints on freight capacity and maintenance. Freight trains can only use Marmaray during limited nighttime windows, creating a major bottleneck that hinders the performance of Türkiye's main national and intercontinental rail corridors, increases logistics costs, and leads to inefficient mode shifts to road transport. This constrained situation results in higher greenhouse gas (GHG) emissions, congestion in Istanbul's metropolitan area, and missed opportunities for rail to capture time- and cost-sensitive international cargo.

To address these issues, the Project will construct a new 127-km, high-capacity, double-track, electrified, and fully signaled railway line that bypasses the Istanbul Metropolitan Area and provides an overland rail crossing of the Istanbul Strait (Bosphorus). The line will start at Çayırova on the Asian side and end at Çatalca on the European side, traversing the Yavuz Sultan Selim (YSS) Bridge, which was designed and built as a rail-compatible structure but has not yet been equipped with track and systems infrastructure. By following the North Marmara Motorway right-of-way, the alignment seeks to minimize new land acquisition and environmental impacts, while delivering a technically resilient solution with extensive tunnels and viaducts to ensure climate and natural hazard resilience.

The Project's overall development objective, which this contract supports, is to: "*increase the competitiveness and resilience of Türkiye's cross-Bosphorus railway connectivity along its main national and intercontinental corridors*". By achieving this objective, the Project will enhance the sustainability and safety of the national transport system, and achieve a shift towards a safer, environmentally friendly transport system reflecting a more balanced modal split.

INRAIL will directly enhance the operational viability and competitiveness of three strategic trade corridors:

- The Trans-Caspian Middle Corridor (MC) linking China and Central Asia to Europe;
- The proposed Iraq Development Road (IDR) connecting Asia and the EU via the Middle East and Türkiye; and
- The Türkiye–EU corridor, which accounts for one-third of Türkiye's international trade but remains underutilized by rail due to current capacity constraints.

By eliminating the single most critical bottleneck shared by these corridors, the Project will reduce logistics costs, lower GHG emissions by shifting freight from road to rail, and increase the resilience of Türkiye's logistics network.

Key project beneficiaries include:

- **Railway undertakings, shippers, and logistics service providers**, who will gain access to faster, more reliable, and cost-efficient freight itineraries across Eurasia;
- **Airports (IST and SAW)** and **air freight operators**, through new inter-airport and rail-air cargo connectivity.

- **Local communities and businesses** along the corridor, benefiting from improved transport efficiency and reduced road congestion; and
- **Turkish State Railways (TCDD),** as infrastructure manager and access regulator, through enhanced asset quality, reduced maintenance backlog, and increased track access revenues.

The Project is aligned with Türkiye's Transport and Logistics Master Plan 2053, the Updated First Nationally Determined Contribution (NDC) under the Paris Agreement, and the national goal of achieving net zero emissions by 2053. It supports the World Bank Country Partnership Framework FY24–28, particularly the High and Sustainable Productivity Growth and Disaster Resilience and Preparedness objectives, by promoting logistics connectivity, enabling modal shift to rail, and building climate- and seismic-resilient transport infrastructure. INRAIL aims to align with the EU's Trans-European Transport Network (TEN-T) objectives to strengthen cross-border rail connectivity between Türkiye and the EU. The project will follow voluntary alignment with the EU Technical Specifications for Interoperability (TSIs) as a strategic enabler of seamless operations, supply-chain integration, and long-term asset resilience. This alignment is intended to ensure interoperability with the EU rail network, particularly via Bulgaria and Serbia, and compatibility with the broader Turkish railway system and South-East European corridors. Accordingly, the Project shall be designed and delivered to satisfy the essential requirements of EU Directive on the interoperability of the rail system and implement the full suite of applicable TSIs across all railway subsystems, infrastructure, energy, control-command and signaling, rolling stock, and safety in railway tunnels. Interoperability constituents shall be placed in service only upon demonstration, through EC conformity assessment, that they meet the essential requirements for safety and operation and contribute to end-to-end interoperability with the EU rail system.

## 1.2. Document Precedence and Interpretation

In the event of any ambiguity, discrepancy, or conflict between the documents forming part of the Contract, the following order of precedence shall apply, with the higher-ranking document prevailing in all cases:

1. Contract Agreement
2. Particular Conditions of Contract (PCC)
3. General Conditions of Contract (GCC)
4. Employer's Requirements
5. Technical Specifications (Annexes D through Q)
6. Reference Documents (Annexes A to Q)

Where a conflict exists between two documents of equal rank — including between individual Technical Specification Annexes — the matter shall be referred to the Engineer for determination. The Contractor shall not resolve such conflicts unilaterally and shall not proceed with the affected works until the Engineer's written determination has been received.

## 2. Project Implementation Arrangements

MoTI, through AYGM, has established a Project Implementation Unit (the "PIU") to carry out the coordination, implementation, and management of the Project, including liaison with consultants and the Contractor(s), as well as with relevant authorities and financing institutions, in accordance with the applicable legal framework and Financier requirements. MoTI, through AYGM (the "Employer"), will implement the Project under two separate procurement packages.

The first package covers the civil works contracts, comprising four (4) lots encompassing infrastructure and superstructure railway works, contracted by AYGM under the conditions of contract specified in the World Bank's Standard Procurement Document (Request for Proposals, Works Design and Build, March 2025). These include the FIDIC Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works Designed by the Contractor (Yellow Book, Second Edition 2017, reprinted 2022 with amendments).

The second package covers the Signaling and Telecommunication works, comprising a single lot, procured under the conditions of contract specified in the World Bank's Standard Procurement Document (Request for Bids, Plant, Design, Supply, and Installation, March 2025). Signaling and Telecommunication works will be procured separately and are not included within the scope of this tender. The implementation of Package 2 works is in tandem with the implementation of the civil works of the four lots of Package 1.

Project implementation will involve the following parties:

- **Works Contractor(s)**: The Project is expected to engage more than one Design-Build (DB) contractor under the current tender package.
- **Construction Supervision Consultant** to administer the design-build works contract(s) on site, per FIDIC regulations, with the following duties: (a) administering the design-build contract(s) and ensuring full supervision and monitoring of the Contractor's performance, with timely completion, adherence to budget, and compliance with the Employer's Requirements, approved design, and contract terms; (b) safeguarding construction quality and overseeing site safety throughout the works; (c) managing all contractual matters between the Employer and the Contractor; and (d) facilitating the successful handover of the completed works as an operable and maintainable system.
- **Project Management Consultant (PMC)**: provides support to the PIU on the daily tasks of implementing and managing the Project, including complying with all Financiers' requirements and related financing agreements, as well as with national laws and obligations.
- **Project Implementation Oversight Consultant (PIOC):** the PIOC will provide independent project implementation oversight, including technical support and quality assurance throughout the project lifecycle to help meet Employer and Financiers' requirements. The PIOC will provide structured, periodic—and in some cases real time or near real time—oversight and quality assurance of key aspects of project implementation, including but not limited to design, construction, fiduciary performance, environmental and social performance, and risk management. The PIOC support is intended to ensure the timely, fit-for-purpose, and on-budget delivery of a flagship project of national and international importance.

- **Notified Body (NoBo) and Assessment Body (AsBo):** Certification bodies engaged by the Contractor to ensure that the Works are designed, constructed, tested and commissioned in full compliance with: Applicable Technical Specifications for Interoperability (TSIs); Applicable Common Safety Method for Risk Evaluation and Assessment (CSM-RA); Relevant national railway legislation of the Republic of Türkiye; and All certification and authorization requirements for placing the railway subsystem(s) into service.
- **Turkish State Railways (TCDD):** Railway infrastructure manager that will operate the Project following completion.
- **Dispute Avoidance and Adjudication Board (DAAB)** : A Dispute Avoidance and Adjudication Board (DAAB) shall be established for each Contract under the INRAIL Project in accordance with Clause 21 of the General Conditions and the applicable Particular Conditions of Contract (Section IX of the Request for Proposals). The DAAB's constitution, composition, member qualification requirements, site visit frequency, referral procedures, and fee arrangements are governed exclusively by Section IX — Particular Conditions of Contract and its associated Appendix (General Conditions of the DAAB Agreement) and Annex (DAAB Procedural Rules). Contractors are directed to those documents for the full contractual framework applicable to the DAAB.

Following the successful Tests on Completion, the issuance by the Supervision Consultant of the Taking-Over Certificate, and the TSI conformity check by the Notified Body (NoBo) and Assessment Body (AsBo), the Project's facilities will be transferred to Turkish State Railways (TCDD), which will manage and operate the Project.

### 2.1. Certification, Notified Body, Assessment Body, and Independent Safety Assessor

#### Overview

The INRAIL project is a new railway infrastructure subject to the European Union (EU) railway interoperability framework as transposed into Turkish national legislation. The Contractor shall prepare the works for acceptance and certification in accordance with EU Directive 2016/797/EU on the interoperability of the rail system within the European Union, together with the applicable Technical Specifications for Interoperability (TSIs) and any relevant updates current at the Base Date of the Contract. All costs associated with the certification process, including the engagement of the Notified Body, the Assessment Body, and the Independent Safety Assessor, shall be deemed included in the Accepted Contract Amount.

Detailed obligations arising from the certification process, including the Reliability, Availability, Maintainability and Safety (RAMS) Management Plan, the Preliminary Hazard Analysis (PHA), the System Hazard Analysis (SHA), and the Common Safety Method for Risk Evaluation and Assessment (CSM-RA) process — are set out in Chapter 9 (System Integration, RAMS and Safety) of these Employer's Requirements and in Annex N (Safety and RAMS Technical Specification).

#### Notified Body (NoBo)

The Notified Body is an independent conformity assessment body designated under EU Directive 2016/797/EU and notified to the European Commission. Its role is to assess and certify that the railway subsystems designed and constructed under this Contract conform to the applicable TSIs prior to the entry into service of the line. The Contractor shall propose a Notified Body for the Engineer's review and consent. The Contractor shall not engage a Notified Body without the Engineer's prior written consent. The Contractor shall provide the Notified Body with all

information, documentation, access to works, and measurement facilities necessary to carry out its assessment. The Contractor shall remedy all deficiencies identified by the Notified Body in intermediate assessment reports and shall continue to do so until the Notified Body issues its final EC Certificate of Verification. The Engineer will not recommend issue of the Taking-Over Certificate for any Lot until the relevant EC Certificate of Verification has been issued by the Notified Body. Detailed NoBo engagement obligations, programme milestones and acceptance requirements are set out in Chapters 9 and 10 of these Employer's Requirements.

**Assessment Body (AsBo)**

The Assessment Body is an independent body responsible for assessing conformity with national safety rules and requirements that fall outside the scope of the TSIs, including Turkish national railway safety regulations. Where national rules apply in addition to or in place of TSI requirements, the Contractor shall engage an Assessment Body acceptable to the Employer and the relevant national safety authority. The Assessment Body's findings shall be documented and made available to the Engineer. The Contractor shall remedy all deficiencies identified by the Assessment Body as a condition of Taking-Over. Detailed AsBo engagement obligations are set out in Chapter 9 and 10.

**Independent Safety Assessor (ISA)**

The Independent Safety Assessor is an independent body or expert engaged to assess whether the safety management processes applied by the Contractor comply with the Common Safety Method for Risk Evaluation and Assessment (CSM-RA) under Commission Implementing Regulation (EU) No 402/2013. The ISA's role is not to duplicate the NoBo's conformity assessment but to provide independent assurance that hazards have been systematically identified, assessed, and mitigated throughout the design and construction process. The Contractor shall propose an ISA for the Engineer's review and consent prior to commencement of the Preliminary Hazard Analysis. The ISA shall be engaged throughout the design and construction phases and shall issue a Safety Assessment Report as a mandatory deliverable prior to the commencement of Trial Operations. The ISA's findings shall be incorporated into the documentation submitted to the NoBo and AsBo. Detailed ISA obligations, including the required deliverables and programme milestones, are set out in Chapter 9 and 10.

## 2.2. Key External Stakeholders

The Project interfaces with a number of public authorities and asset owners whose approvals, inputs, and coordination are required at various stages of design and construction. The Contractor shall identify, manage, and document all interfaces with these external parties in accordance with the Interface Management Plan required under Chapter 4 of these Employer's Requirements. The following authorities and entities are key external stakeholders for the purposes of this Project:

- **TCDD (Türkiye Cumhuriyeti Devlet Demiryolları – Turkish State Railways)** is Turkey's state rail infrastructure owner, responsible for planning, building, maintaining, and granting access to the national rail network, while train operations are handled by its subsidiary; in the project context, TCDD would review and approve rail interfaces, and any rail works or protections that the project triggers.
- **KGM (Karayolları Genel Müdürlüğü – General Directorate of Highways)** is the national highways authority that plans, builds, maintains, and operates motorways and

state/provincial roads; for the project, KGM would review and approve road works, traffic management, and any highway connections or structures within its remit.

- **The Yavuz Sultan Selim (YSS) Bridge Operator** which financed, built, and operates the bridge and associated Northern Marmara Highway under a build–operate–transfer concession; in this project, Operator would coordinate interfaces, access, and operational constraints for any works affecting the bridge corridor.
- **TEİAŞ (Türkiye Elektrik İletim A.Ş.)** is Turkey's electricity Transmission System Operator, responsible for planning, operating, and maintaining the high voltage grid and system dispatch; for the project, TEİAŞ would handle grid connections, protection studies, outages, and any relocation or reinforcement of transmission assets.
- **DSİ (Devlet Su İşleri – State Hydraulic Works)** is the national water resources authority in charge of planning, developing, and operating dams, irrigation, flood protection, and bulk water supply; in the project, DSİ would review and permit works affecting water bodies, flood defenses, and hydraulic structures, including diversions and protections.
- **Airport Operators include (operators of Istanbul Airport and Sabiha Gokcen airport)** for day-to-day airport management and interface on airport-adjacent works, and DHMİ (State Airports Authority) for air navigation services and, where applicable, state-operated airports; in the project, they would oversee construction constraints in aerodrome/airspace zones, access logistics, and service continuity planning.
- **İBB (İstanbul Büyükşehir Belediyesi – Istanbul Metropolitan Municipality)** is the citywide local government responsible for urban planning, municipal roads and transport services, utilities coordination, environmental management, and public works; for the project, IMM would issue municipal permits, coordinate with its agencies (e.g., metro, roads, water/sewer), manage traffic and public realm impacts, and align works with city plans.

**2.3 Coordination and Decision Rights:**

AYGM chairs the Project Coordination Committee (PCC), which serves as the central platform for cross-agency coordination throughout project implementation. The PCC draws in relevant stakeholders — including TCDD, KGM, the YSS bridge operator, and utility and permit authorities — on a needs basis as interface topics arise. Decision authority is clearly distributed: AYGM holds formal sign-off authority for all project delivery decisions; TCDD approves operationally critical rail interfaces; and asset owners approve interfaces that affect their respective assets. Where issues cannot be resolved at working level, a tiered escalation pathway applies — from technical working groups through the PCC to senior management.

**2.4 Contractor's Representative and Key Personnel**

The Proposer must demonstrate that it will have a suitably qualified Contractor's Representative and suitably qualified minimum Key Personnel, in adequate numbers, as listed in the table below. The personnel proposed at tender stage shall become contractually binding upon contract award and shall be mobilised in accordance with the Construction Programme.

Any proposed substitution shall require the Engineer's prior written consent, and the Employer retains the right to object to a proposed replacement. The replacement shall meet or exceed the qualification and experience criteria applicable to the original appointee, in accordance with the Contract.

The Contractor shall ensure that all Key Personnel are available to the extent necessary to fulfil their respective obligations under the Contract. The Engineer's prior written consent is required for any arrangement that would materially affect a Key Person's capacity to perform their duties. Working patterns shall not be prescribed, consistent with the Design and Build delivery model.

Note: If the Proposer submits proposals for multiple lots, it must propose separate teams of key personnel for each lot. Specifically, for each of the below listed key personnel positions different persons should be proposed for the mutliple lots, such that the same person is not common in the multiple lots.

| Item No | Position | No. of persons required for each position | Relevant Academic Qualifications | Minimum years of relevant experience in similar works and overall professional experience |
|---|---|---|---|---|
| 1 | Project Manager (Contractor's Representative) | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 10 years of relevant project management experience, including as Project Manager of two contracts for construction of railway systems (including metro, light rail, tram, funiculars, etc.), using FIDIC Yellow, or FIDIC Gold Book Conditions of Contract, and 15 years overall professional experience |
| 2 | Civil Works Deputy Project Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 8 years relevant project management experience, including as Deputy Project Manager/Senior role in two contracts for construction of railway systems, using FIDIC Yellow, or FIDIC Gold Book Conditions of Contract, and 12 years overall professional experience |
| 3 | Electro-mechanical Works Deputy Project Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Electrical or Electronics or Electrical & Electronics or Mechanical Engineering | 5 years relevant electro-mechanical construction experience and 10 years overall professional experience |
| 4 | Chief Resident Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant experience and 10 years overall professional experience |
| 5 | Topographical Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Survey or Topographical Engineering | 5 years relevant experience in Survey or Topographical Engineering and 10 years overall professional experience |
| 6 | Electrical Works Engineers | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Electrical or Electronics or Electrical & Electronics | 5 years relevant experience and 10 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| 7 | Mechanical Works Engineers | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Mechanical Engineering | 5 years relevant experience and 10 years overall professional experience |
| 8 | Architect | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Architecture | 5 years relevant architectural experience and 10 years overall professional experience |
| 9 | Geotechnical Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering MSc. in Geotechnical Engineering | 5 years relevant geotechnical engineering experience and 10 years overall professional experience |
| 10 | Environmental and Social Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in environmental engineering, social sciences, or related discipline | 10 years relevant Environmental and Social experience in construction of large works, and 15 years overall professional experience |
| 11 | Environmental Specialists | Lot 1 :2<br>Lot 2 :2<br>Lot 3 :2<br>Lot 4 :2 | Bachelor's Degree in Environmental Engineering | 8 years relevant Environmental experience in construction of large works, and 12 years overall professional experience |
| 12 | Social Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :2<br>Lot 4 :2 | Bachelor's Degree in social sciences, sociology, anthropology, law, development studies, or related discipline; | 8 years relevant Social experience in construction of large works, and 12 years overall professional experience |
| 13 | Resettlement and Livelihood Restoration Specialists | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :2 | Bachelor's degree in Law, urban planning, economics, social sciences, or related field | 5 years relevant resettlement experience and 10 years overall professional experience |
| 14 | OHS Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in engineering | Valid OHS certification (from any country)<br>10 years relevant OHS experience in construction of large works contracts, SIF prevention protocols for tunnelling, and 15 years overall professional experience |
| 15 | OHS Engineer / Site Safety Engineer | Lot 1 :2<br>Lot 2 :2<br>Lot 3 :2<br>Lot 4 :2 | Bachelor's degree in engineering or technical discipline | 5 years relevant OHS/Site Safety experience and 10 years overall professional experience |
| 16 | OHS Documentation / Reporting Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in occupational health and safety, engineering or a related technical discipline | 5 years relevant OHS Documentation/Reporting experience and 10 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| 17 | Community Liaison Officer | Lot 1 :2<br>Lot 2 :2<br>Lot 3 :2<br>Lot 4 :2 | Bachelor's degree in sociology, social sciences, communication, public relations, law, social work, psychology, anthropology, political science, international relations, or a related discipline | 5 years relevant community Liaison experience and 10 years overall professional experience |
| 18 | Biodiversity & Ecology Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :2<br>Lot 4 :1 | Bachelor's degree in biology, ecology, environmental engineering, environmental sciences, forestry, wildlife management, or a related discipline | 5 years relevant biodiversity & Ecology experience and 10 years overall professional experience |
| 19 | Archaeologist / Cultural Heritage Expert | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :2 | Bachelor's degree in archaeology or related discipline | 5 years relevant Archaeology/cultural heritage experience and 10 years overall professional experience |
| 20 | Gender and SEA/SH Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in social sciences, sociology, anthropology, law, development studies, or related discipline | 5 years relevant Gender and SEA/SH experience and 10 years overall professional experience |
| 21 | Legal Expert | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in in law | 5 years relevant legal experience and 10 years overall professional experience |
| 22 | Valuation Expert | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in real estate valuation, economics, civil engineering, agricultural economics, law or related discipline | 5 years relevant valuation experience and 10 years overall professional experience |
| 23 | Labor Specialist | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's degree in social science such in human resources, law, sociology, social sciences or related discipline | 5 years relevant Labor experience and 10 years overall professional experience |
| 24 | Design Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Engineering | 10 years relevant design management experience in railway infrastructure projects under Design & Build contracts and 15 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| 25 | Lead Structural Designer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 8 years relevant structural design experience in railway or large infrastructure projects and 12 years overall professional experience |
| 26 | Railway Alignment & Track Designer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant railway alignment and track design experience and 10 years overall professional experience |
| 27 | Hydraulic / Drainage Designer | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Civil or Environmental Engineering | 5 years relevant hydraulic/hydrology or drainage design experience in infrastructure projects and 10 years overall professional experience |
| 28 | Railway Safety Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Engineering | 8 years relevant railway safety management experience coordination and 12 years overall professional experience |
| 29 | QA/QC Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Engineering | 8 years relevant QA/QC management experience in large infrastructure projects and 12 years overall professional experience |
| 30 | System Integration Manager | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Electrical and/or Electronics | 8 years relevant systems integration experience in railway projects and 12 years overall professional experience |
| 31 | BIM Expert | Lot 1 :1<br>Lot 2 :1<br>Lot 3 :1<br>Lot 4 :1 | Bachelor's Degree in Engineering, Architecture or related discipline | 5 years relevant BIM management and coordination experience in large infrastructure projects and 10 years overall professional experience |
| 32 | TBM Expert | Lot 1 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant TBM tunnelling experience in metro or railway tunnel projects and 10 years overall professional experience |
| 33 | NATM Tunnel Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3:1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant NATM tunnel construction/design experience and 10 years overall professional experience |
| 34 | Geologist | Lot 1 :1<br>Lot 2 :1<br>Lot 3:1<br>Lot 4 :1 | Bachelor's Degree in Geological Engineering | 5 years relevant geological investigation and tunnel geology experience and 10 years overall professional experience |
| 35 | Tunnel Monitoring Engineer | Lot 1 :1<br>Lot 2 :1<br>Lot 3:1<br>Lot 4 :1 | Bachelor's Degree in Civil, Geological or Geotechnical Engineering | 5 years relevant tunnel monitoring experience and 10 years overall professional experience |
| 36 | Underground Station Design Engineer | Lot 1 :1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering or Architecture | 5 years relevant underground station design experience in railway/metro projects and 10 years overall professional experience |

| | | | | |
|---|---|---|---|---|
| 37 | Rail-on-Bridge Structural Specialist | Lot 3 :1 | Bachelor's Degree in Civil Engineering | 5 years relevant bridge structural engineering experience including railway bridge systems and 10 years overall professional experience |
| 38 | Wind / Structural Dynamics Engineer | Lot 3 :1 | Bachelor's Degree in Civil Engineering | 3 years relevant wind engineering and structural dynamics experience for long-span bridges and 10 years overall professional experience |
| 39 | Structural Health Monitoring Engineer | Lot 3 :1 | Bachelor's Degree in Civil Engineering | 3 years relevant structural health monitoring systems experience for bridges or major structures and 10 years overall professional experience |
| 40 | Marine Environmental Specialist | Lot 3 :1 | Bachelor's Degree in Environmental Engineering | 3 years relevant marine environmental management experience in coastal or marine infrastructure projects and 10 years overall professional experience |
| 41 | Specialized OCS Design Engineer for Long-Span Bridge Conditions | Lot 3 :1 | Bachelor's Degree in Electrical and/or Electronical Engineering | 3 years relevant OCS design experience for railway systems including bridge applications and 10 years overall professional experience |
| 42 | Cut-and-Cover Specialist | Lot 2 :1<br>Lot 3:1<br>Lot 4 :1 | Bachelor's Degree in Civil Engineering | 3 years relevant cut-and-cover tunnel construction/design experience and 10 years overall professional experience |
| 43 | Airport Interface Coordinator | Lot 4 :1 | Bachelor's Degree in Engineering, Aviation Management or related discipline | 3 years relevant coordination experience in airport operational environments and 10 years overall professional experience |

Among the staff listed in the table above, those related to E&S are further detailed in 11.15.2. E&S Staffing Arrangements.

## 3. Applicable Technical Specifications, Standards and codes

All Technical Specifications, standards, codes and reference documents applicable to this Contract are contained in the Annexes to these Employer's Requirements. Annexes A through C comprise the employer-issued reference documents (drawings, scope of works reference documents, and site information respectively). Annexes D through Q comprise the Technical Specifications governing all discipline-specific design and construction obligations. The General Technical Specification (Annex D) is the parent document across all disciplines; where a conflict exists between the General Technical Specification and a discipline-specific Technical Specification, the discipline-specific Technical Specification shall take precedence. In all cases where a conflict exists between any Annex and these Employer's Requirements, these Employer's Requirements shall prevail. Tenderers are required to review all Annexes in conjunction with these Employer's Requirements prior to submitting their proposal. No claim for additional cost or time arising from failure to review the Annexes will be entertained.

**National Regulatory Framework and TCDD Operational Requirements**

The design, construction, testing, and commissioning of all railway infrastructure under the INRAIL Project shall comply with the applicable Turkish national legislative, regulatory, and certification framework governing railway systems. All railway infrastructure shall be designed and delivered in full compatibility with TCDD's national operational standards, maintenance practices, and rolling stock requirements. All signaling, telecommunications, and control systems shall be certified in accordance with applicable Turkish national standards and shall be demonstrated to be compatible with existing TCDD systems prior to commissioning. The Contractor shall obtain all required national approvals and certifications from the competent Turkish authorities, including TCDD and AYGM (General Directorate of Infrastructure Investments), prior to handover. The national certification and operational requirements described above are further elaborated in the Annex B2-Operation Plan which is annexed to the Employer's Requirements.

Confidential

# 4. Multi-Contract Structure and Interface Management

## 4.1 Overview and Governing Principles

The Project is delivered under a multi-contract structure comprising four civil works Lots under Package 1 and a separate Signaling and Telecommunication (S&T) contract under Package 2. This structure creates a network of internal and external interfaces that must be systematically identified, controlled, and resolved to ensure that the Works are delivered as a coherent, operable, and interoperable railway system. No contract boundary, Lot boundary, or third-party interface may be treated as a risk transfer mechanism: each Contractor is responsible for proactively managing the interfaces arising from its Works, regardless of which party holds the corresponding obligation on the other side of the interface.

The Engineer, acting under the FIDIC Yellow Book, is the central coordinating authority for all interface management under the civil works contracts. The Engineer shall maintain a live Interface Register covering all internal and external interfaces across the Project, attend and chair technical coordination meetings, and facilitate the timely resolution of interface issues. Where interface issues cannot be resolved at working level between Contractors, the Engineer shall issue directions and, where necessary, determinations in accordance with the Contract. The Engineer shall ensure that the designs, construction works, supplies, and installations delivered under each contract are aligned, consistent, and collectively suitable for railway operation and safety. The Engineer shall further manage the specific interface between the civil infrastructure and the S&T contracts, including the sequencing of civil provisions and joint testing for full-line operability.

AYGM's Interface Management Team will chair cross-contract coordination meetings, issue interface control documents at project level, track cross-contract dependencies and constraints, and adjudicate conflicts that cannot be resolved at Engineer level. The PMC will support AYGM in maintaining project-level interface registers, preparing technical submittals, and running issue-resolution workflows. The PIOC will provide independent oversight of interface governance, monitor progress against interface target dates, and provide escalation pathways for unresolved issues.

Each Contractor shall actively participate in all interface coordination meetings convened by the Engineer or by AYGM, respond to interface control documents within the timescales specified by the Engineer, provide all information and documentation required to support design coordination and permitting processes, and promptly notify the Engineer of any emerging interface risk or constraint that may affect the programme or the Works.

*The multi-contract structure of the Project, the interface obligations set out in this Chapter, and the system integration and simulation coordination requirements set out in Sections 4.4 and 4.5 are inherent characteristics of the Project that each Contractor is deemed to have fully understood and priced at the time of tender. No Contractor shall have any entitlement to additional time or cost arising from coordination, interface management, system integration, simulation harmonization, or data reconciliation activities required by the nature of the multi-contract structure, whether such activities arise between Lots, between civil works and the Signaling and Telecommunication contract, or between any Contractor and a third-party authority or asset owner.*

### 4.2 Interface Management Plan

Each Contractor shall prepare and submit an Interface Management Plan to the Engineer for review and consent no later than 28 days prior to the commencement of detailed design. The Interface Management Plan shall remain a live document throughout the duration of the Contract and shall be updated whenever a new interface is identified, or an existing interface changes in scope or risk profile.

The Interface Management Plan shall address, as a minimum:

- The process for identifying, assessing, and mitigating interface risks, integrated with the Contractor's overall risk register;
- The organizational structure for interface management, including the designation of a dedicated Interface Manager with sufficient seniority and authority to commit the Contractor on interface matters;
- A complete Interface Register identifying all internal interfaces (Lot-to-Lot and civil-to-Signaling and Telecommunication) and all external interfaces with third-party authorities and asset owners, with each interface assigned an owner, a status, and a resolution timeline.
- Interface control document procedures, including templates, review cycles, and escalation protocols.
- The use of the Common Data Environment established under Chapter 8 as the platform for managing and sharing interface control documents, clash detection reports, and associated correspondence.
- Programme integration, showing how interface target dates are embedded in the Master Programme required under Section 4.3 and 4.9 of this Chapter; and
- Communication and reporting protocols with the Engineer, adjacent Lot contractors, the Signaling and Telecommunication contractor, and relevant third parties.

The Interface Management Plan shall be developed in accordance with Annex E (Design Services Technical Specification) and shall be consistent with the interface obligations set out in Annex L (Signaling and Telecommunicaton System Technical Specification) in respect of civil provisions required for the Signaling and Telecommunication works.

### 4.3 Integrated Master Programme

The Engineer shall establish and maintain an Integrated Master Programme for the Project, consolidating programme interfaces, coordination activities, systems integration activities, testing and commissioning dependencies, shared access constraints, and key contractual milestones across all Lots and Packages. Each Contractor shall cooperate with the Engineer and the other Contractors in the preparation, updating, and coordination of the Integrated Master Programme, and shall provide all necessary programme information, sequencing data, interface activities, resource assumptions, milestone dates, and progress updates required for such purposes. Each Contractor shall ensure that its Level 4 Programme remains fully coordinated with the Integrated Master Programme throughout the execution of the Works. In the event of an inconsistency between individual Contractor programmes affecting Project-wide interfaces or milestones, the Engineer

may instruct such coordination measures as are necessary to maintain overall programme integration.

### 4.4 Lot-to-Lot Interfaces

Where the Project is delivered under more than one Design-Build contract, each Contractor shall be responsible for identifying and managing all interfaces with adjacent Lots from the commencement of design through to Taking-Over. Lot-to-Lot interface obligations include, but are not limited to:

- Geometric and physical continuity of permanent works at Lot boundaries, including track alignment, gradients, structures, and drainage.
- Coordination of temporary works, site access routes, and working areas at or near Lot boundaries to avoid conflict and ensure safe, efficient construction sequencing.
- Sequencing construction activities at Lot boundaries, including any dependency on the completion or partial completion of works by an adjacent Lot contractor.
- Handover of structures, formations, and systems between Lots in a condition that meets the requirements of the receiving Lot contractor and the Employer's Requirements; and
- Joint surveying and as-built verification at Lot boundaries prior to handover.

Each Contractor shall designate an Interface Manager with delegated authority to engage directly with the Interface Managers of adjacent Lot contractors. The Interface Managers of adjacent Lots shall meet no less than monthly, or more frequently as directed by the Engineer, to review the status of the Interface Register and resolve outstanding items. Unresolved Lot-to-Lot interface issues shall be escalated to the Engineer without delay and in any event within five working days of the issue being identified as unresolved.
Mandatory Lot boundary handover milestones shall be incorporated into each Contractor's Master Programme and agreed with the Engineer and adjacent Lot contractors within 60 days of contract award. These milestones shall form Employer's Milestones under the Contract.

### 4.5 Civil Infrastructure and Signaling and Telecommunication Interface

#### *4.5.1 General*

The civil infrastructure works under Package 1 have direct and critical interfaces with the S&T works under Package 2. The S&T contractor cannot complete its design, installation, or testing programme without timely and accurate inputs and physical provisions from the civil contractors. Each Contractor under Package 1 shall therefore treat the S&T contractor as a primary interface party from the outset of design and shall give civil-to-S&T interface obligations the same priority as Lot-to-Lot interfaces.
The Contractor shall not close out any structure, tunnel, track formation, equipment room, or cable route corridor that contains or is required to contain S&T provisions without written confirmation from the Engineer that all S&T interface requirements for that element have been satisfactorily resolved and incorporated.

Confidential

### *4.5.2 Interface Requirements Schedule*

The following table sets out the minimum civil provisions that each Contractor under Package 1 is required to deliver as prerequisites for the Package 2 S&T contractor. This Schedule shall be read in conjunction with Annex L (Signaling and Telecommunication System Technical Specification), which provides the technical basis for these requirements. Where Annex L specifies more detailed or more stringent requirements, Annex L shall take precedence.

| Interface Item | Civil Contractor Obligation | Reference |
|---|---|---|
| Cable routes and conduit infrastructure | Design, supply, and install all cable ducts, conduits, draw-pits, and cable troughing along the full track alignment, at structures, and within stations and technical buildings, in accordance with the cable route layout agreed with the S&T contractor and approved by the Engineer. | Annex L, Section 16/19 |
| Equipment rooms | Construct all signaling and telecommunication equipment rooms to the dimensions, floor loading, door widths, and finish specifications required by the S&T contractor. Provide power supply termination points, earthing bars, HVAC systems, and cable entry provisions in accordance with S&T equipment requirements. Equipment rooms shall be handed over to the S&T contractor in a clean, weathertight, and energized condition. | Annex L, Section 6/19 |
| Balise mounting positions and cable draw-pits | Construct balise sleeper housings and associated cable draw-pits at all locations identified in the S&T contractor's track layout, in accordance with the dimensional and positional tolerances specified in Annex L. | Annex L, Section 6/19 |
| Earthing and bonding | Design and install the track and structure earthing and bonding system in coordination with the S&T contractor to ensure compatibility with signaling return current, rail potential, and EMC[29] requirements. | Annex L, Section 4/5/9 |
| Power supply coordination with traction substations | Coordinate the design and installation of traction substation power supplies with the S&T contractor to ensure that S&T power feeds, UPS provisions, and protection coordination are fully integrated into the electrical design. | Annex L, Section 6 |
| Track-to-signaling integration testing | Provide access to the track, structures, and all civil and electrification infrastructure required for S&T system integration testing, including ETCS on-track testing and end-to-end commissioning runs. The civil Contractor shall cooperate with the S&T contractor and the Engineer in planning and executing the integrated testing programme and shall ensure that civil and track works affecting test sections are complete to the required standard before testing commences. | Annex L, Section 6/21 |

[29] Electromagnetic Compatibility

| | | |
|---|---|---|
| Overhead line equipment (OLE) and signaling coordination | Coordinate OLE mast positions, stagger, and electrification infrastructure with the S&T contractor to ensure that OLE does not conflict with antenna positions, balise locations, or signal sighting lines. | Annex L, Section 4/5/6 |

### *4.5.3 Interface Target Dates: Civil Works to Signaling and Telecommunication*

Given that the Package 1 civil works are procured on a Design-Build basis and that the Package 2 Signaling and Telecommunication contract has not yet been awarded at the time of this tender, the civil-to-Signaling and Telecommunication interface target dates are structured in two phases: a design phase, during which the civil Contractor shall develop and freeze all civil provisions for Signaling and Telecommunication in accordance with Annex L (Signaling and Telecommunication System Technical Specification) in the absence of an appointed Signaling and Telecommunication contractor; and a construction and integration phase, during which the civil Contractor shall formally coordinate with the Signaling and Telecommunication contractor once appointed.

**Phase 1 : Design Phase (prior to Signaling and Telecommunication contractor appointment)**

The civil Contractor shall not wait for the appointment of the Signaling and Telecommunication contractor before developing its civil provisions for Signaling and Telecommunication. All civil design affecting Signaling and Telecommunication interfaces shall be developed from the outset in accordance with Annex L and the Interface Requirements Schedule set out in Section 4.5.2. The following milestones shall apply and shall be incorporated into the civil Contractor's Master Programme:

- **Within 90 days of contract award**: submission to the Engineer of a preliminary civil-to-Signaling and Telecommunication Interface Register, identifying all interface items, their design status, and any assumptions made in the absence of a confirmed Signaling and Telecommunication design.
- **At Preliminary Design stage:** submission to the Engineer of all cable route layouts, equipment room general arrangement drawings, and balise position proposals for review and comment, with confirmation that the designs comply with Annex L requirements.
- **At Detailed Design stage:** submission to the Engineer of all finalized civil provisions for Signaling and Telecommunication, including equipment room construction drawings, cable duct and conduit layouts, earthing and bonding designs, and balise mounting details, for review and consent before construction commences on any affected element; and
- Prior to construction of any element containing Signaling and Telecommunication provisions: written confirmation from the Engineer that the relevant civil design has been reviewed and is consistent with Annex L requirements.

**Phase 2 : Construction and Integration Phase (following Signaling and Telecommunication contractor appointment)**

Within 60 days of the appointment of the Package 2 Signaling and Telecommunication contractor, the civil Contractor shall meet with the Signaling and Telecommunication contractor and the Engineer to formally align programmes, review the Interface Requirements Schedule, identify any design changes required to the civil works as a result of the Signaling and Telecommunication contractor's detailed design, and agree a joint interface target date schedule. The following milestones shall then be incorporated into the civil Contractor's updated Master Programme and agreed with the Engineer and the Signaling and Telecommunication contractor:

- Formal sign-off of the civil-to-Signaling and Telecommunication Interface Requirements Schedule by both parties and the Engineer.
- Completion and handover of equipment rooms on each Lot to the Signaling and Telecommunication contractor, in a clean, weathertight, and energized condition;
- Completion of cable duct and conduit installation on each Lot;
- Completion of balise mounting positions and draw-pits on each Lot;
- Civil and track works complete on each Lot to the standard required for Signaling and Telecommunication installation to commence; and
- Civil and track works complete on each Lot to the standard required for Signaling and Telecommunication integration testing and end-to-end commissioning runs to commence.

These target dates shall be incorporated into the Contractor's Programme and monitored through KPI P2 but shall not constitute Milestones for the purposes of Sub-Clause 4.26 or Sub-Clause 8.8 unless expressly stated in the Contract Data.Where the appointment of the Signaling and Telecommunication contractor is delayed beyond the civil Contractor's programme assumptions, the civil Contractor shall notify the Engineer immediately and the Engineer shall convene an interim coordination meeting to assess the programme impact and agree interim measures to protect the overall project completion date.

### *4.6 Power Supply and System-Wide Simulation Coordination*

#### 4.6.1 General

Although the Works are designed and constructed under separate contracts and across distinct Lots, the INRAIL corridor will be commissioned and operated as a single, unified railway system. It is therefore essential that all power supply designs, traction energy simulations, train performance simulations, and capacity studies carried out by Lot-2 and Lot-4 Contractors are fully consistent and mutually compatible with each other across the entire corridor and that such designs and studies shall be reviewed by all other Contractors. The Contractor shall be fully responsible for ensuring this consistency and shall not rely on the Employer or the Engineer to provide binding operational parameters, data sets, or technical assumptions for the purposes of simulation studies.

#### 4.6.2 Harmonization of Simulation Inputs and Parameters

Each Contractor shall coordinate with all other Lot contractors to define, agree, and harmonize the key technical assumptions, input parameters, and operational scenarios used in traction power simulations, train performance simulations, capacity studies, and energy consumption analyses. This coordination shall be carried out through structured technical workshops convened by the

Engineer, commencing no later than the Preliminary Design stage and continuing throughout the detailed design phase as required.
The Contractor shall:

- Participate in all simulation coordination workshops convened by the Engineer and contribute all relevant design data, assumptions, and preliminary simulation outputs within the timescales specified;
- Agree common input parameters and operational scenarios with adjacent Lot contractors and the Signaling and Telecommunication contractor before commencing any simulation study, and document the agreed parameters in a Simulation Coordination Record to be submitted to the Engineer for information;
- Ensure that its simulation studies are carried out using the agreed common parameters and are fully consistent with the simulation studies of all other Lot contractors across the full corridor. The use of different assumptions or inconsistent parameter sets that result in conflicting or duplicated simulation outputs shall not be permitted; and
- Where inconsistencies are identified between the simulation outputs of different Lots, take immediate action to identify the source of the inconsistency, agree a resolution with the affected Lot contractors and the Engineer, and revise and resubmit the affected simulation studies. All costs and time associated with such revisions shall be borne by the Contractor or Contractors responsible for the inconsistency.

### 4.6.3 Power Supply Coordination with Traction Substations

Power supply design across the corridor involves interfaces between the traction substations, the overhead line equipment, and the Signaling and Telecommunication power feeds that span Lot boundaries. Each Contractor shall coordinate the design of traction substations and power supply infrastructure with adjacent Lot contractors and with the Signaling and Telecommunication contractor to ensure that:

- Substation locations, capacities, and protection settings are consistent across Lot boundaries and support the operational requirements of the full corridor;
- Voltage drop and power quality calculations account for the full corridor load profile, not only the individual Lot; and
- Protection coordination studies are carried out on a corridor-wide basis and are not limited to individual Lot boundaries.

The Contractor shall submit all power supply coordination outputs, including protection coordination studies and voltage drop calculations, to the Engineer and shall make them available to adjacent Lot contractors through the Common Data Environment established under Chapter 8

### 4.6.4 Integrated System-Wide Simulation

While simulation studies may be carried out separately for each Lot, the Employer reserves the right, at any stage of the design or construction process, to require the preparation of an integrated system-wide simulation covering the entire INRAIL corridor. Where such a requirement is notified by the Employer, all Contractors shall cooperate fully in providing their simulation models, input data, and design parameters within the timescales specified by the Engineer and shall incorporate the findings of the integrated simulation into their designs as directed. The requirement for an integrated system-wide simulation shall not relieve any Contractor of its responsibility to ensure the consistency of its own simulation studies with those of other Lot contractors under Section 4.6.2.

All coordination, harmonization, data reconciliation, and revision activities required under this Section, including any revisions arising from an integrated system-wide simulation, shall not entitle any Contractor to an extension of time or additional cost, as these obligations are inherent in the multi-contract structure of the Project and are deemed to have been fully priced at the time of tender.

### *4.7 Interface with the Existing Rail Network (TCDD)*

TCDD (Türkiye Cumhuriyeti Devlet Demiryolları — Turkish State Railways) is the national rail infrastructure manager, responsible for planning, building, maintaining, and granting access to the national rail network. The Contractor shall coordinate with TCDD on all interfaces with the existing network, including connection points, possessions, track protection arrangements, and any works or temporary measures affecting operational lines.
The Contractor shall obtain TCDD's review and approval for all relevant design submissions and site activities in accordance with applicable rail safety and operational requirements. All works affecting the operational network shall be planned and programmed to minimize disruption to existing rail operations, and the Contractor shall submit possession request schedules to the Engineer and TCDD in accordance with the timescales and procedures set out in the Railway Safety Plan required under Chapter 9. The Contractor shall not commence any works affecting operational TCDD infrastructure without the prior written consent of TCDD and the Engineer.

### *4.8 Third-Party Interface Obligations*

#### 4.8.1 Interface with KGM and the YSS Bridge Corridor (Lot 3)

KGM (Karayolları Genel Müdürlüğü — General Directorate of Highways) is the national highways authority responsible for planning, building, maintaining, and operating motorways and state and provincial roads. The Yavuz Sultan Selim Bridge and the Northern Marmara Highway are operated under a build–operate–transfer concession by the Yavuz Sultan Selim Bridge Operator. Works under Lot 3 are located within or in direct proximity to this concession corridor and are therefore subject to the access, operational, and safety requirements of both KGM and the Bridge Operator. No structural modification to the Yavuz Sultan Selim Bridge is anticipated under this Contract; the Works in this corridor are limited to the installation of track, systems, and associated railway infrastructure on the existing bridge deck and within the highway corridor.

The Contractor responsible for Lot 3 shall:

- Establish an interface protocol with the Employer, KGM and the Bridge Operator prior to commencement of any works within the highway or bridge corridor, setting out access arrangements, working hours restrictions, coordination procedures, and the process for obtaining approvals for any works affecting the bridge deck or highway corridor;
- Submit all design proposals for works on or adjacent to the bridge deck to KGM and the Bridge Operator for review and approval before detailed design is finalised, and shall not finalise any such design without written confirmation from both parties and the Engineer;

- Comply with all working hours restrictions imposed by KGM or the Bridge Operator, including restrictions related to motorway traffic management, maintenance windows, and operational constraints of the concession;
- Prepare and maintain a Traffic Management Plan covering all works affecting the Northern Marmara Highway, to be approved by KGM and the Engineer prior to implementation; and
- Not commence any works on the bridge deck or within the concession corridor without the prior written consent of the Bridge Operator, KGM, and the Engineer.

Should any unforeseen condition arise during detailed design or construction that necessitates a structural interface with the bridge, the Contractor shall immediately notify the Engineer and shall not proceed without a separate written agreement between the Employer, KGM, the Bridge Operator, and any other relevant authority.

### 4.8.2 Interface with Airport Operators (Lots 1 and 4)

Works under Lot 1 are located in proximity to Sabiha Gökçen Airport, operated by TAV Airports, and works under Lot 4 are located in proximity to Istanbul Airport, operated by İGA Istanbul Airport Operations. DHMİ (Devlet Hava Meydanları İşletmesi — State Airports Authority) is responsible for air navigation services at both airports. Works in airport-adjacent areas are subject to stringent access control, security, airspace, and Mechanical, Electrical and Plumbing coordination requirements.

The Contractors responsible for Lots 1 and 4 respectively shall:

- Establish a formal interface protocol with the Employer, the relevant airport operator (TAV Airports for Lot 1, İGA Istanbul Airport Operations for Lot 4) and with DHMİ prior to commencement of any works within aerodrome or airspace influence zones, setting out security clearance procedures, access control arrangements, and the process for notifying and obtaining approval for works that may affect airport operations.
- Submit all design proposals involving works within the obstacle limitation surfaces of the relevant airport to DHMİ for review and approval, and shall not commence crane operations, erection of temporary structures, or any other works that may affect airspace without DHMİ's prior written consent.
- Coordinate with the relevant airport operator on all interfaces with airport Mechanical, Electrical and Plumbing systems, including fire alarm systems, power backup and Uninterruptible Power Supply systems, and building management systems, to ensure that construction activities do not compromise the operation or integrity of these systems. Interface control documents shall be agreed with the airport operator and the Engineer prior to commencement of any works in proximity to airport Mechanical, Electrical and Plumbing infrastructure.
- Prepare and implement a Service Continuity Plan covering access logistics, emergency response, and contingency arrangements for the duration of works in airport-adjacent areas, to be approved by the relevant airport operator and the Engineer; and

- Ensure that all personnel working within airport security zones hold the required security clearances and comply with the airport operator's site rules and security protocols at all times.

### 4.8.3 Interface with TEİAŞ

TEİAŞ (Türkiye Elektrik İletim A.Ş.) is Turkey's Electricity Transmission System Operator. The Contractor shall coordinate with TEİAŞ on all grid connection requirements, protection studies, planned outages, and any relocation or reinforcement of transmission assets necessitated by the Works. The Contractor shall not carry out any works in proximity to high-voltage transmission infrastructure without TEİAŞ's prior written consent and shall comply with all TEİAŞ safety and operational requirements.

### 4.8.4 Interface with DSİ

DSİ (Devlet Su İşleri — State Hydraulic Works) is the national water resources authority. The Contractor shall coordinate with DSİ and obtain all required permits for works affecting water bodies, flood defenses, and hydraulic structures, including any diversions and protective measures required during construction, before commencing any affected works.

### 4.8.5 Interface with İBB

İBB (İstanbul Büyükşehir Belediyesi — Istanbul Metropolitan Municipality) is the citywide local government authority responsible for urban planning, municipal transport, utilities coordination, environmental management, and public works. The Contractor shall coordinate with İBB and its relevant agencies to obtain all required municipal permits, manage traffic and public realm impacts, and ensure that the Works are aligned with applicable city plans and municipal requirements.

## 4.9 Programme Requirements

### 4.9.1 Tender Stage Programme

Each tenderer shall submit a Level 3 programme with its tender, covering the full scope of works for its Lot from contract award to Taking-Over. Given the Design-Build nature of the Contract, the Level 3 programme shall explicitly reflect the full design lifecycle — including preliminary design, detailed design, design review and consent periods, and the sequential dependency between design approval and the commencement of construction for each major work package — and shall not present construction activities as commencing before the design stages upon which they depend have been completed and consented by the Engineer.

The Level 3 Programme shall identify the principal construction sequencing assumptions, access strategy, tunnelling logistics assumptions, major temporary works stages, work-front deployment strategy and the key constructability constraints affecting the proposed execution sequence.

The Level 3 Programme submitted at Tender Stage shall demonstrate the Contractor's proposed overall construction planning approach and shall include the principal assumptions forming the basis of the proposed programme durations, sequencing logic, resource loading, production planning and construction methodology.

The Level 3 Programme and the supporting Construction Methodology shall identify, where applicable:

- High-level construction sequencing and staging philosophy
- Major work fronts and access arrangements
- Tunnelling and underground works strategy
- Major temporary works stages and temporary construction support arrangements
- Interface coordination activities and dependencies
- Critical path activities and major programme constraints
- Major manpower deployment assumptions
- Major equipment fleet assumptions
- Tunnelling resource strategy
- Simultaneous work-front assumptions
- Major production and installation rate assumptions
- Working time and shift assumptions
- Logistics and material handling assumptions
- Utility diversion and access constraint assumptions
- Testing and commissioning integration activities
- Auxiliary works
- Mobilization and facilities for the Employer & the Engineer
- Principal constructability constraints affecting execution of the Works
- Protection of nearby assets

The Contractor shall demonstrate that the proposed construction planning approach, resource loading, construction methodology and temporary works strategy are sufficient to achieve the contractual milestones and Time for Completion. The Contractor shall ensure consistency between the Level 3 Programme, Construction Methodology, resource assumptions, temporary works strategy and proposed execution sequence.

The Level 3 Programme submitted at Tender Stage shall demonstrate the Contractor's proposed high-level construction sequencing, work-front strategy, access philosophy, major temporary works sequencing, interface coordination activities, critical path activities, major constraints and dependencies, and the integration of design development, authority approvals, utility diversions, land access, testing and commissioning, and Signalling and Telecommunication interface activities. The Level 3 Programme shall clearly identify the key assumptions forming the basis of the proposed programme durations, sequencing logic, resource deployment strategy and major equipment utilization philosophy.

Confidential

The Level 3 Programme shall be consistent with the proposed Construction Methodology and shall demonstrate the feasibility of the proposed construction sequence, temporary works strategy and interface coordination approach.

The Level 3 Programme shall identify the principal temporary works stages and their impact on the proposed construction sequence, access arrangements, tunnelling logistics, work-front deployment and critical path activities.

The Level 3 programme shall show, as a minimum:

- All major design and construction work packages, with clear sequencing from preliminary design through to Taking-Over;
- Key design submission and consent milestones, including the Preliminary Design Report, the Detailed Design submissions by discipline, and any design packages requiring third-party approval from TCDD, KGM, the Yavuz Sultan Selim Bridge Operator, DHMİ, TEİAŞ, DSİ, İGA and TAV and İBB;
- Building Information Modelling milestones, including submission of the Building Information Modelling Execution Plan, model development stages aligned with design submissions, and the As-Built model handover, in accordance with Chapter 8;
- Critical path activities and key dependencies, including design-to-construction transitions for each Lot;
- Interface target dates with adjacent Lots and the Package 2 Signaling and Telecommunication contract, as applicable at tender stage; and
- All mandatory Employer's Milestones.

The programme shall be submitted in Primavera P6 (or an equivalent scheduling tool acceptable to the Employer), consistent with the requirements of the Construction Supervision Consultant's Terms of Reference.

### 4.9.2 Post-Award Programme

Within 60 days of contract award, each Contractor shall submit a Level 4 programme to the Engineer for review and consent. The Level 4 programme shall expand the Level 3 tender programme to activity level and shall fully reflect the Design-Build delivery sequence, including all design phase activities, their durations, review and consent periods, and the logic links between design completion and the commencement of construction for each element of the Works.

The Level 4 programme shall:

- Reflect the full design phase in detail, including: preparation and submission of the Preliminary Design Report; the Engineer's review and consent period; preparation and submission of Detailed Design packages by discipline and work package; the Engineer's review and consent periods for each package; any third-party review and approval periods required by TCDD, KGM, the Yavuz Sultan Selim Bridge Operator, DHMİ, TEİAŞ, DSİ, İBB, and airport operators; and the resolution of design review comments before construction commences;

- Incorporate all Building Information Modelling milestones required under Section 4.9, including the Building Information Modelling Execution Plan submission, Common Data Environment establishment, model development and submission milestones at each design stage, 4D Building Information Modelling programme integration milestones, clash detection and resolution cycles, and the As-Built model handover to TCDD at Taking-Over, all of which shall form Employer's Milestones under the Contract;
- Show the sequential dependency between each design consent milestone and the commencement of the corresponding construction activity, such that no construction activity is programmed to commence before the design upon which it depends has been consented.
- Expand all construction activities to activity level, with durations, logic links, and resource allocations, and clearly identify critical and near-critical paths through both the design and construction phases.
- Incorporate all mandatory Lot-to-Lot interface target dates as agreed with adjacent Lot contractors and the Engineer under Sections 4.4of this Chapter.
- Incorporate all mandatory civil-to-Signaling and Telecommunication interface target dates applicable at the time of submission and provide for their update following appointment of the Package 2 Signaling and Telecommunication contractor in accordance with Section 4.5.
- Incorporate all third-party interface target dates, including design submission dates, approval submission dates, and anticipated consent receipt dates for all relevant authorities; and
- Be fully resource-loaded and cash-flow linked to the Contractor's programme of payments.

The Level 4 programme shall be maintained as a live document throughout the Contract and updated monthly. Each monthly update shall be accompanied by a progress narrative report identifying: the current status of design and construction activities against the programme baseline; any deviation from the baseline, its cause, and its impact on the critical path; and the proposed recovery measures and revised completion forecast. Both the updated programme and the narrative report shall be submitted to the Engineer as part of the monthly progress report.

The Contractor shall prepare the construction programme based on realistic and technically justified productivity assumptions, resource allocations and equipment deployment strategies appropriate for the nature, complexity and sequencing of the Works. The programme submission shall include the key planning assumptions forming the basis of activity durations, including where applicable tunnelling advance rates, excavation cycles, concrete production rates, track installation rates, logistics assumptions, working time arrangements, number of work fronts, and major equipment fleet deployment. The Contractor shall demonstrate that the proposed construction methodology, resource allocation and equipment fleet are sufficient to achieve the contractual milestones and completion periods in an integrated and coordinated manner across all interfaces of the Project.

### 4.9.3 Scheduling Tool

The Contractor shall use Primavera P6 or an equivalent scheduling tool agreed in writing by the Engineer prior to the first programme submission. The scheduling tool used shall be consistent with that used by the Construction Supervision Consultant to enable direct comparison and integration of programmes across all Lots and contracts. Native programme files shall be submitted to the Engineer alongside Portable Document Format exports with each programme submission and monthly update. Where 4D Building Information Modelling is used, the Contractor shall demonstrate the live link between the programme and the Building Information Modelling model in accordance with Chapter 8.

### 4.9.4 Contractual Milestones

The Contract defines four Milestones as set out in Sub-Clause 1.1.95 of the Particular Conditions of Contract and as further detailed in the Contract Data. These Milestones are:

- **Milestone 1** — Detailed Design Completion
- **Milestone 2** — Infrastructure Works Completion
- **Milestone 3** — Superstructure Completion
- **Milestone 4** — Testing and Commissioning Completion

These Milestones are contractual schedule obligations for the purposes of Sub-Clause 4.26 and Sub-Clause 8.8 of the Particular Conditions of Contract and are distinct from Activities and Sub-Activities used in the Schedule of Payments.

The Level 3 Programme submitted at Tender Stage shall explicitly identify each of the four Milestones and shall indicate a proposed target date for each, consistent with the sequential durations established in the Contract Data. The proposed milestone dates shall be logically derived from the programme sequencing and shall reflect a realistic and achievable delivery approach from the Commencement Date through to Taking-Over.

The Level 3 Programme shall be structured such that its activity sequencing and logic are fully aligned with the major activities and sub-activities set out in the Schedule of Payments (Part I, Section IV). Each major activity in the Schedule of Payments shall be traceable to one or more activities in the Level 3 Programme, and the programme shall clearly demonstrate which activities, and work packages underpin the achievement of each Milestone. The Tenderer shall not present a programme whose timing is disconnected from, or inconsistent with, the Schedule of Payments activity structure or the milestone durations defined in the Contract Data.

The principal assumptions underpinning the proposed milestone target dates shall be identified in the supporting Construction Methodology submitted with the Tender.

Confidential

# 5. Scope of the Works

## 5.1 General

The civil works package for the Istanbul North Rail Crossing Project (INRAIL) is structured into four Design and Build contract Lots under Package 1. A separate Signaling and Telecommunication contract is procured under Package 2 and is not part of this tender. The multi-contract structure, interface management obligations between Lots and with Package 2, and third-party interface obligations are set out in Chapter 4 (Multi-Contract Structure and Interface Management) and are not repeated in this chapter.

The contractual durations applicable to each Lot shall be separately and clearly defined in this Section, including the duration for design works, construction works, and the Defects Notification Period, together with the relevant commencement and completion points and the corresponding start and end activities.

Unless otherwise stated, the design period shall commence from the Effective Date of the Contract, with the Contractor required to achieve substantial completion of the design deliverables necessary for the execution of the Works within twelve (12) months thereof. At this stage, the design shall be sufficiently advanced to establish, with a degree of certainty acceptable to the Engineer, the definitive horizontal and vertical alignment of the Works and the extent, configuration and footprint of all major underground structures and crossing infrastructure. The design deliverables submitted at the twelve (12) month milestone shall be of a standard that enables the Employer to formally freeze the alignment and trigger the Resettlement Action Plan implementation and land expropriation processes, without prejudice to the Contractor's ability to introduce subsequent refinements to elements of the design that do not affect the established alignment corridor or the footprint of land subject to resettlement or acquisition. Any such refinements shall not alter the frozen alignment or expand the land take envelope without the prior written consent of the Employer. Such period shall not relieve the Contractor of its continuing obligation to further develop, refine, coordinate, revise, supplement, and complete the design, as may be necessary for the proper execution, completion, testing, commissioning, and performance of the Works in accordance with the Contract, until final completion of the Works.

The construction period shall be completed within sixty (60) months from the Effective Date of the Contract, and the Defects Notification Period shall be twenty-four (24) months from Taking-Over.

In order to establish a consistent commercial basis for Tender pricing and to mitigate the risks arising from inflation, market volatility and divergent escalation assumptions among Tenderers, the RFP includes defined price adjustment and escalation mechanisms prepared by the Employer. Such mechanisms are intended to provide a balanced commercial framework for periodic price adjustments during execution of the Works and to reduce the risk of speculative pricing, excessive contingency allowances and potential claims associated with market fluctuations and inflationary pressures. Tenderers shall be deemed to have taken into account the applicable price adjustment provisions, adjustment formulae and escalation mechanisms defined in the RFP in preparation of the Tender Price.

Confidential

The Tenderer shall be deemed to have taken into account the principal constructability constraints affecting the execution of the Works, including access limitations, temporary works requirements, tunnelling logistics, staging constraints, interface dependencies, urban and airport operational constraints, auxiliary works, facilities for the Employer and the Engineer and sequence-related construction requirements in preparation of the Tender Price and Tender Programme.

The Tenderer shall be deemed to have included in the Tender Price all indirect costs, contractor's preliminaries, temporary facilities, mobilization activities, temporary utilities, traffic management measures, environmental and social mitigation measures, logistics arrangements, temporary access facilities, temporary construction support activities, auxiliaty works, facilities for the Employer & the Engineer, overheads and all other indirect costs necessary for execution and completion of the Works in accordance with the Contract. The Tenderer shall provide an itemized summary of the principal contractor's preliminaries and indirect cost categories forming part of the Tender Price in accordance with the Tender requirements.

The Tender Documents include Reference Design information prepared for Tender purposes in order to define the general design intent, performance requirements, interface requirements and overall project configuration. Unless otherwise expressly stated in the Contract, the Reference Design shall not be interpreted as a fully completed or construction-ready design. The Contractor shall be responsible for reviewing, verifying, developing, optimizing and completing the design as necessary for execution of the Works in accordance with the Employer's Requirements and the Contract.

The Employer's Requirements and Tender Documents identify, to the extent currently known, the principal areas requiring further design development, coordination, optimization, verification or interface resolution during the detailed design stage. The Contractor shall be deemed to have taken into account the level of design maturity and the remaining design development requirements in preparation of the Tender Price and Tender Programme.

The Tenderer shall identify the principal assumptions underlying the Tender Price and shall describe the methodology adopted for consideration of construction risks, programme risks, interface risks, logistics constraints, temporary works risks, climate related risks, geotechnical uncertainties, and other major cost and schedule risk factors relevant to the Works. The Tenderer shall provide a summary explanation of the risk allowance and contingency approach adopted in preparation of the Tender Price and Tender Programme to demonstrate that adequate considerations have been given to the principal risks and uncertainties associated with the execution of the Works.

The Contractor shall be deemed to have included in the Tender Price all works, services, temporary works, design activities, interfaces, coordination activities, testing, commissioning, logistics arrangements and other activities necessary for completion of the Works in accordance with the Employer's Requirements and the Contract, whether expressly identified in the Tender Documents or reasonably inferable from the nature and intent of the Works. The Tenderer shall review the scope boundaries, interface requirements and design responsibilities defined in the Tender

Confidential

Documents and shall identify any perceived scope ambiguity or inconsistency during the Tender Stage.

The Tenderer shall be deemed to have included in the Tender Price and Tender Programme all temporary works, temporary facilities, temporary support measures, temporary access arrangements and temporary construction activities necessary for execution of the Works in accordance with the proposed Construction Methodology and the requirements of the Contract.

### 5.1.1 Design and Build Disclaimer:

The technical descriptions in this chapter are based on the Conceptual Design Report (Annex B1) and are indicative of the scope of works anticipated under each Lot. All quantities, dimensions, structural configurations, alignments, and technical parameters are indicative only. The precise configuration, dimensions, and quantities of structures shall be determined and confirmed through the detailed design process carried out by the Contractor under each respective contract. Nothing in this chapter constitutes a warranty by the Employer as to the constructability, completeness, sufficiency, or accuracy of the conceptual scope. Tenderers shall not rely on conceptual parameters for pricing without independent verification. For any Section of any Contract (Lot), commencement of construction works within that Section shall be permitted once the Detailed Design has been approved by the Engineer and the PIOC has verified that the applicable Resettlement Plan (RP) has been implemented for that Section.

The Reference Design and other Tender Documents are provided for Tender purposes in order to define the design intent, functional requirements, interface requirements and overall project configuration. Unless otherwise expressly stated in the Contract, the Contractor shall be responsible for reviewing, verifying, developing, coordinating, optimizing and completing the detailed design necessary for execution of the Works in accordance with the Employer's Requirements and the Contract.
Technical standards, codes, and specifications applicable to the works are consolidated in the Technical Specification Annexes (Annexes D through Q) and are not listed in this chapter.

### 5.1.2 Design Responsibilities

The Employer's design responsibility is limited to the preparation of the Reference Design and Tender Documents defining the functional, operational, performance and interface requirements of the Project. The Contractor shall be fully responsible for all detailed design, design development, design coordination, temporary works design, constructability design, systems integration design, interface coordination design, construction support design, testing and commissioning design, and all other design activities necessary for completion of the Works in accordance with the Contract. The Contractor shall ensure that the completed design satisfies all performance, safety, operational, interface and regulatory requirements defined in the Contract.

## 5.2 Geotechnical Risk Allocation Statement

This section constitutes the Employer's formal geotechnical risk allocation statement for the purposes of the Contract. It shall be read in conjunction with Chapter 6 (Site Information), Annex

C1 (Geological Data Report — GDR), and the foreseeable geotechnical hazard disclosures in the Special Requirements sections of each Lot.

### 5.2.1 Nature and Status of Employer-Provided Geological Information

The geological plan and profile drawings and geotechnical data included in the tender documents — including the Geological Data Report (Annex C1) and the geological information contained in the Conceptual Design Report (Annex B1) are based on investigations conducted in the vicinity of the alignment for previous projects and on data collected during the conceptual design stage. This information is provided for general reference purposes only.
This information does not constitute a comprehensive geotechnical investigation of the Site. It does not represent a complete or definitive characterization of the ground conditions along with the alignment. The Employer makes no warranty, express or implied, as to the accuracy, completeness, or sufficiency of this information for the purposes of design or construction. The provision of this information does not relieve the Contractor of any obligation under the Contract.

### 5.2.2 Contractor's Deemed Knowledge of Site Conditions

The Contractor shall be deemed to have inspected and examined the Site, its surroundings, and all available data and reports provided by the Employer prior to submission of its Tender. The Contractor shall be deemed to have fully satisfied itself, before submitting its Tender, as to:

- The nature of the ground and subsurface conditions, including geological, geotechnical, and hydrogeological characteristics;
- The nature and extent of all foreseeable geotechnical hazards along the alignment, including those disclosed in the Special Requirements sections of this chapter;
- Hydrological conditions and groundwater levels;
- The risks, contingencies, and all other circumstances that may affect the design, execution, cost, and completion of the Works; and
- All other physical conditions at and in the vicinity of the Site that a competent and experienced contractor could reasonably have foreseen.

The foreseeable geotechnical hazards disclosed in the Special Requirements sections of this chapter — including methane gas occurrence, karstification and void risk, liquefaction potential, swelling clay, the absence of formal rock mass classification at conceptual stage, and the incomplete hydrogeological characterization of the alignment — are disclosed by the Employer in the interest of transparency. Their disclosure does not alter the Contractor's responsibility to independently characterize these hazards through its own site investigations and to design and construct accordingly. The Contractor shall treat all such hazards as foreseeable and shall price its proposal accordingly.

### 5.2.3 Contractor's Independent Investigation Obligation

The Contractor shall, at its own cost and responsibility, carry out all additional site investigations, surveys, studies, laboratory testing, and assessments necessary for:

- The proper identification, characterization, and evaluation of all ground-related risks along the alignment;

Confidential

- The development of the geological and geotechnical designs required under the Contract, including designs for tunnels, stations, structures, alignment, and ground improvement works;
- The incorporation of identified ground risks into the Contractor's design and Contract Price; and
- The preparation of the specific geotechnical management plans required under this chapter and Annex E (Design Services Technical Specification).

The Contractor shall prepare a Site Investigation Programme and submit it to the Engineer for approval before commencing any field investigation or laboratory testing. Prior to preparing the Site Investigation Programme, the Contractor shall collect all information on existing and planned infrastructure and substructures that may affect or be affected by the Works — including gas lines, electrical and communication lines, sewage systems, water supply lines, and similar utilities — and shall design the investigation programme to take account of these features.

All site investigation activities shall be carried out in accordance with the approved programme and completed within the timeframe required to support the detailed design programme. The Contractor shall install piezometers along the alignment and around all station excavations to monitor changes in groundwater levels resulting from construction activities, in accordance with the monitoring requirements set out in Annex F.

No claim for additional time or cost arising from ground conditions of the nature described in this chapter will be entertained. The Employer's disclosure of these hazards is made in the interest of transparency and to support informed tendering; it does not create any additional entitlement for the Contractor beyond what is expressly provided in the Contract.

## 5.3 General Scope -All Lots

### 5.3.1 Design and Build Delivery Approach

All construction and installation work under Package 1 will be delivered under a Design and Build approach in accordance with the FIDIC Conditions of Contract for Building and Engineering Works Designed by the Contractor (Yellow Book, Second Edition 2017, reprinted 2022 with amendments). Under each Lot, the design obligations shall cover, as a minimum, the following deliverables for submission and approval by the Engineer:

- Preliminary Design: Civil and Structural Works. (Including Alignment and Geodetic Works)
- Preliminary Design: Station Works, and Electromechanical, where applicable to the Lot.
- Detailed Design: Civil and Structural Works. (Including Alignment, Geodetic, Geological and Geotechnical Works)
- Detailed Design: Track and Superstructure Works.
- Detailed Design: Power Supply, Distribution, and Electrification Works.
- Detailed Design: Tunnel Electromechanical Works.
- Detailed Design: Station Works, and Electromechanical, where applicable to the Lot.
- As-Built Documentation: All Disciplines.

The above deliverables represent the minimum expected scope of design services under each Lot. In delivering the detailed design, the Contractor shall carry out all tasks typically required for an infrastructure rail project of this nature, including but not limited to: geodetic survey works;

collection of all information on existing and planned infrastructure and substructures that may affect or be affected by the alignment, including gas lines, electrical and communication lines, sewage systems, water supply lines, and other utilities; site investigations and geological and geotechnical assessments; horizontal and vertical alignment design; hydrological, hydraulic, and drainage studies and design, including identification of necessary hydraulic structures and obtaining approvals from the General Directorate of State Hydraulic Works (DSİ — Devlet Su İşleri); track superstructure design; design of civil structures along the line; detailed design of passenger stations covering civil, architectural, electromechanical, and systems integration aspects; power supply, traction, and electrification design; tunnel electromechanical systems design; Building Information Modeling (BIM) in accordance with Chapter 4, Section 4.9; and preparation of as-built documentation.

The Contractor shall ensure that all design outputs are fully coordinated across disciplines and prepared in accordance with the Technical Specifications (Annexes D through Q), applicable Turkish technical standards and regulations, and these Employer's Requirements. All design documents shall be submitted to the Engineer for review and approval in accordance with the design submission schedule embedded in the contractual programme.

As part of its tender, the Contractor shall submit a detailed Construction Methodology describing the proposed sequence of works, temporary works arrangements, construction techniques, resource allocation, traffic and interface management, and risk mitigation measures. The Construction Methodology shall demonstrate how the Contractor intends to manage the sequential dependency between design development, design consent, and the commencement of construction for each major work package — reflecting the Design and Build delivery model under which no construction activity shall commence before the design upon which it depends has been consented by the Engineer. Upon award of the Contract, the accepted Construction Methodology shall form part of the Contract Documents and shall be executed accordingly, subject to further refinement during the detailed design process.

The programme for design and construction — including design submission milestones, Engineer review periods, third-party approval periods, and the sequential dependency between design consent and commencement of construction — shall be set out in the Level 3 programme submitted at tender stage and the Level 4 programme submitted after contract award, in accordance with Chapter 4, Section 4.8.

The Construction Methodology shall describe the proposed execution philosophy for the principal work types and shall demonstrate that adequate consideration has been given to constructability constraints, temporary works requirements, logistics arrangements, access limitations and interface coordination requirements.

The Project shall be implemented under a Design and Build delivery model based on the Employer’s Requirements, Reference Design and performance requirements defined in the Contract. The Tender Documents define the functional, operational, performance, interface and design requirements of the Project together with the Reference Design information prepared for Tender purposes. The Contractor shall be responsible for reviewing, verifying, developing, coordinating, optimizing and completing all detailed design, temporary works design, construction

Confidential

support design, systems integration design and all other design and construction activities necessary for completion of the Works in accordance with the Contract. The Contractor shall be deemed to have included in the Tender Price and Tender Programme all activities necessary to complete the Works in accordance with the Design and Build delivery philosophy established under the Contract.

The Construction Methodology submitted at Tender Stage shall be fully consistent with the Level 3 Programme and shall demonstrate the feasibility of achieving the contractual milestones and Time for Completion within the proposed construction sequence and resource deployment strategy.

The Construction Methodology submitted at Tender Stage shall include the Contractor's proposed methodology and sequencing philosophy for the major work types forming part of the Works, including where applicable tunnelling works, shafts, stations, viaducts, bridges, cut-and-cover structures, railway systems installation and major interface areas. The methodology shall identify the proposed temporary works philosophy, major construction stages, work-front strategy, logistics arrangements, major equipment deployment assumptions, and the principal constructability constraints affecting the execution of the Works. For underground works, the Contractor shall identify the proposed tunnelling methodology, indicative shaft and access strategy, excavation sequencing philosophy, TBM launch and retrieval assumptions, NATM staging principles where applicable, and the proposed integration of underground works with surface access and logistics constraints.

The Construction Methodology shall identify the principal temporary works anticipated for execution of the Works, including where applicable retaining systems, shafts, portals, temporary excavation support systems, utility protection/diversion measures, access platforms, temporary traffic arrangements, construction access facilities and other major temporary construction measures relevant to the proposed construction sequence. The Construction Methodology shall demonstrate the proposed integration of temporary works with the construction sequence, logistics arrangements, work-front strategy and interface coordination requirements.

### 5.3.2 Infrastructure and Superstructure Railway Works — Scope Common to All Lots

The construction, electrification, and installation works to be delivered under each Lot encompass all civil, structural, track, and systems works required to bring the railway infrastructure to operational readiness. The scope of works under each Lot shall cover, as a minimum, the following principal activities:

- Relocation of Existing Infrastructure.
- Alignment Infrastructure and Slope Stabilization
- Soil Improvement Works
- Structural Works: Minor Structures (Culverts, Underpasses, Overpasses and Cut-and-Cover Tunnels etc.), Crossing Obligations (Engineering Structures - Bridges and Viaducts) and Tunnels
- Superstructure (Track) Works Station Works (Lot 1 and Lot 4)
- Systems Installation.
- Testing and Commissioning.

Confidential

- Final Acceptance.

In delivering these works, the Contractor shall carry out all tasks typically required for an infrastructure rail project of this nature, including but not limited to:

- **Earthworks and Ground Improvement:** Excavation, backfill, and ground improvement works along the alignment; monitoring of slopes, deep excavations, nearby structures, and settlement points throughout construction. All earthworks and ground improvement works shall be carried out in accordance with Annex E (Design Technical Specification) and F (Civil Works (Infrastructure) Technical Specification) which consolidates the requirements of the predecessor Technical Specification for Infrastructure Construction Works.
- **Civil and Structural Works:** Relocation of existing utilities and services; construction of all structures along the line including NATM tunnels, TBM tunnels, construction and ventilation shafts, cut-and-cover structures, viaducts, bridges, hydraulic structures, underpasses, overpasses, culverts, and retaining structures, in accordance with Annex F (Civil Works (Infrastructure) Technical Specification).
- **Temporary Works and Construction Facilities:** Construction of all temporary facilities required for the execution of the works, including site management offices, warehouses, concrete batching plants, laboratories, welfare facilities, and access roads. Temporary facilities shall include accommodation for the Employer's and Engineer's personnel, provided to a standard suitable for their use. Construction of temporary structures required for tunnelling operations — including TBM launch and reception shafts, temporary support structures, and precast lining segment production facilities — shall be the Contractor's responsibility. All temporary works shall be in accordance with Annex F (Civil Works (Infrastructure) Technical Specification).
- **Station Works and Operational Structures:** Station construction, architectural finishing, and electromechanical works for all stations within the Lot boundary, together with the civil, architectural, and electromechanical design of other operational structures within the Lot boundary — including electromechanical structures, traction substations, operation control centers, and similar facilities — in accordance with Annex F (Civil Works (Infrastructure) Technical Specification), Annex H (Architectural and Finishing Works Technical Specification), and Annex I (Stations Electromechanical Systems Technical Specification). Station scope is indicative at conceptual stage and shall be confirmed through the Contractor's design development, in coordination with relevant third-party operators where applicable as set out in Chapter 4, Section 4.7. For each station, the scope shall include as a minimum: fire scenarios and egress modelling; emergency escape routes; tunnel ventilation systems; station fire ventilation systems; fresh air ventilation systems; fire suppression systems; communication systems; alarm systems; passenger information systems; and electromechanical installations and their associated distribution infrastructure including shafts. The station design shall also include finishing works and integration with other passenger transport systems — including metro, high-speed rail, and airport terminals — where applicable. For station-specific scope distinctions, including the different design obligations applying to Sabiha Gökçen Airport Station (Lot 1) and Istanbul Airport Station (Lot 4), refer to the relevant lot sections below.
- **Track Works:** Track works along the line including slab track, ballasted track, special trackwork, rail, and turnouts, in accordance with Annex G (Track Works (Superstructure)

Technical Specification). Track works shall cover open line sections, sections through NATM and TBM tunnels, and where applicable, the YSS Bridge lower deck (Lot 3 only).

- **Power Supply, Distribution, and Electrification Works:** Design and construction of 154 kV energy transmission lines, traction transformer substations, power distribution networks, and the catenary (overhead line) system, in accordance with Annex E (Design Services Technical Specification), Annex J (Power Supply and Traction Power System Technical Specification) and Annex M (Control Systems Technical Specification). Each Lot Contractor shall be responsible for the power supply and electrification works within their respective Lot boundary, including connection and integration with adjacent Lots and existing lines. Transformer substation locations, types, and capacity requirements shall be determined through the power supply design process as set out in Section 5.3.3 below.
  All traction power supply infrastructure, including traction substations, 154 kV transmission lines, and associated electrical equipment, shall be designed for a minimum service life of 40 years.
  The electrical performance parameters specified in the Traction Substations Technical Specification shall be treated as minimum mandatory requirements and shall not be subject to value engineering or substitution without prior written consent of the Engineer.
  The Contractor shall provide a minimum of 20 man-months of structured training to the Employer's personnel on traction power supply systems, comprising 10 man-months during the design and review phase and 10 man-months during the installation and maintenance phase. All training costs shall be borne by the Contractor.
- **Tunnel Electromechanical Works:** Design and installation of tunnel ventilation systems, fire detection and suppression systems, tunnel lighting systems, three-phase city grid power supply connections and tunnel power supply systems, medium voltage systems, and Supervisory Control and Data Acquisition (SCADA) and automation systems for tunnels, cut-and-cover structures, and escape tunnels within the alignment, in accordance with Annex E (Design Services Technical Specification), Annex J (Power Supply and Traction Power Systems Technical Specification), Annex K (Tunnel Electromechanical Works Technical Specification), and Annex M (Control Systems Technical Specification), which collectively consolidate the requirements of the predecessor Design Technical Specifications. No separate reference to those predecessor specifications is required under this Contract.
  All tunnel E&M electrical systems shall be designed for a minimum service life of 40 years.

  The Contractor shall provide a minimum of 5 man-months of structured training to the Employer's personnel (or TCDD) on the operation and maintenance of all tunnel electromechanical systems, including fire detection, ventilation, SCADA, and emergency power. All training costs shall be borne by the Contractor.
- **Special System Works:** The Contractor shall be responsible for the design, supply, installation, testing and commissioning of the water mist fire suppression system for the tunnels along the railway line and within the station areas. The system shall be designed in accordance with applicable national and international standards, Employer's Requirements and authority approvals, and shall be integrated with the fire detection and alarm systems where required. The Contractor's scope shall include all equipment, pipework, nozzles, pumps, control panels, cabling, software/automation interfaces and auxiliary systems necessary to ensure safe, reliable and maintainable operation.

The Contractor shall be responsible for the design, supply, installation, integration, testing and commissioning of the earthquake early warning system to support the operational safety of the railway line and station facilities. The system shall include sensors, data acquisition units, communication infrastructure, control software and central monitoring interfaces installed along the line and at required station/facility locations. The system shall be integrated, where required, with train control, signaling, SCADA, emergency and operational procedures, and the Contractor's scope shall include all hardware, software, testing, training and documentation required for reliable and continuous operation.
The Contractor shall be responsible for the design, supply, installation, integration, testing and commissioning of the climate sensor system for monitoring environmental conditions along the railway line, at stations and associated facilities. The system shall include sensors, field equipment, data acquisition units, communication infrastructure and central monitoring interfaces for measuring temperature, humidity, wind, rainfall, pressure and other required environmental parameters. The collected data shall be integrated, where required, with the relevant control, SCADA or monitoring systems to support operational safety, maintenance planning and emergency management, and the Contractor shall ensure all accuracy, continuity, calibration, maintenance and reporting requirements.

- **Testing, Commissioning, and Trial Operations:** Testing and commissioning of all systems and works within the Lot boundary, integrated testing with the Package 2 Signaling and Telecommunication contractor, and trial operations leading to Final Acceptance, in accordance with Chapter 9 (Testing, Commissioning and Trial Operations) and Annex P (Testing and Commissioning Technical Specification).

The Contractor shall ensure that all works are executed in conformity with the approved detailed design, in full coordination across disciplines and with adjacent Lot contractors and the Package 2 Signaling and Telecommunication contractor, in accordance with the applicable Technical Specifications (Annexes D through Q), applicable Turkish technical standards, specifications, and regulations, and these Employer's Requirements.
**Seismic risk:** The INRAIL alignment traverses a seismically active region. No site-specific seismic hazard assessment or soil classification in accordance with the Turkish Seismic Code (Building – 2018, Bridge and Burried Structures-2020) has been carried out at the conceptual stage. The Contractor shall treat seismic design as a foreseeable risk across all Lots, carry out site-specific seismic hazard assessments and soil classifications as part of their design investigation programme, and determine all seismic design parameters — including Peak Ground Acceleration (PGA) values for the relevant return periods — independently and at their own cost. For Lot 3 (YSS Bridge), the Contractor shall additionally ensure that the railway integration design is compatible with the seismic design basis of the existing bridge. The Contractor's attention is further drawn to the fact that seismic loading conditions, and the ground-dependent parameters upon which seismic design is based, are considered foreseeable given the well-documented seismic character of the Istanbul region.

### 5.3.3 Power Supply Design — Cross-Lot Obligations

The power requirements for the INRAIL corridor must be assessed on a system-wide basis. Accordingly, the Contractors for Lot 2 and Lot 4 — as the end-section contractors — shall each independently prepare train operation simulations for the entire INRAIL project, based on the final

alignment geometry, vehicle performance characteristics for both passenger and freight trains, and the operational requirements set out in the Design Services Technical Specification (Annex E) and Operations Plan (Annex B2). Both simulations shall be submitted to the Engineer, who shall reconcile any discrepancies and issue a direction on the confirmed system-wide power requirements.

Based on these simulations, the Contractors for Lots 2 and 4 shall determine and propose the locations and types of traction transformer substations required for the whole INRAIL project, including the identification of potential power supply connection points in accordance with the existing TEİAŞ (Türkiye Elektrik İletim A.Ş. — Turkish Electricity Transmission Corporation) 154 kV transmission line network. The Contractors for Lots 2 and 4 shall be responsible for obtaining all necessary prior approvals from TEİAŞ and any other relevant energy supply authority for the proposed power supply connection points, at their own cost and within the timeframes required to support the overall project programme. No claim for additional time or cost arising from the approval process will be entertained.

The Employer shall decide on the final power supply points, number and location of transformers, and energy transmission and distribution lines, based on the proposals submitted by both Lot 2 and Lot 4 Contractors. The transformer locations shall be determined based on the final approved simulation results. The Lot-2 and Lot-4 Contractors shall prepare and submit a feeding plan, including the proposed locations of neutral sections, for review and approval. The final decision regarding the locations of the transformer centres shall be made by the Engineer and AYGM. Following such final determination, the Contractor of each Lot within whose scope the approved transformer centres are located shall be responsible for the design of such transformer centres as part of its contractual scope of works.

The following preliminary transformer substation locations are indicated in the conceptual design as a planning reference only and are subject to confirmation through the detailed design process:

- Transformer Substation 1: indicative location at approximately km 27+000 in the Anatolian Section. (Lot-2)
- Transformer Substation 2: indicative location at approximately km 7+600 in the European Section 1. (Lot-3)
- Transformer Substation 3: indicative location at approximately km 18+600 in the European Section 2. (Lot-4)

Each Lot Contractor shall be responsible for the detailed power supply, transmission, and distribution design within their Lot boundary, including the functional and structural design of traction transformer substations, the catenary system and its requirements, data transmission systems ensuring continuous train operation along the line, and interfaces with adjacent lines at both ends of their Lot — whether another INRAIL Lot or an existing TCDD line. All design works and studies shall be submitted to the Engineer and to the Employer for review and approval. All power supply coordination activities, including reconciliation of simulation outputs between Lots 2 and 4, shall be managed through the interface management framework set out in Chapter 4, Section 4.5. All works shall be carried out in accordance with Annex J (Power Supply and Traction Power System Technical Specification), Annex K (Tunnel Electromechanical Works Technical Specification), and Annex M (Control Systems Technical Specification).

### 5.3.4 Interface with the TCDD Network and the CTC Center

The INRAIL Project's Central Traffic Control (CTC) Centre, including SCADA, signaling, and communication systems, will be located at the existing Turkish State Railways (TCDD — Türkiye Cumhuriyeti Devlet Demiryolları) CTC Centre in Maltepe. The Contractor for Lot 1, as the Anatolian end-section contractor, shall connect the INRAIL data transmission system to the existing TCDD Maltepe CTC Centre, in full coordination with the Package 2 Signaling and Telecommunication contractor and taking into account all interface requirements. The Contractor for Lot 1 shall also install and configure the communication system using TCDD's existing fibre optic infrastructure between Çayırova and Maltepe, ensuring that the INRAIL project is not affected by existing communication interruptions and can operate independently when required.
The Contractor whose Lot includes the western end of the INRAIL alignment (Lot-4) shall establish the necessary connections and interfaces with the Ispartakule–Çerkezköy line and shall provide integration with the existing TCDD Halkalı Control Centre.
All interface obligations with TCDD — including possession requests, track protection arrangements, and works affecting operational TCDD infrastructure — are set out in Chapter 4, Section 4.6 and shall be complied with in full.

### 5.3.5 — Package 2: Signaling, Telecommunication, and Supporting Systems

A separate single contract (Package 2) will be awarded for the design, installation, and construction of signaling, telecommunication, and supporting systems for the entire INRAIL project. Package 2 is not part of this tender. Civil works Contractors under Package 1 shall treat the Package 2 contractor as a primary interface party from the outset of design, in accordance with Chapter 4, Section 4.4.
For information, the principal subsystems and systems to be designed and implemented under Package 2 are as follows:

1. CTC Center and subsystems.
2. Electronic interlocking and subsystems.
3. Double-track bidirectional trackside signals.
4. Switch actuation, interlocking, and verification systems.
5. Electrical switch heaters.
6. Track freedom detection systems.
7. Power supply systems for signaling.
8. Automatic Train Control and Protection Systems — European Rail Traffic Management System / European Train Control System (ERTMS/ETCS) Level 1 and Level 2 — and subsystems.
9. Trackside Automatic Train Stopping Systems (ATS).
10. Diagnostic and maintenance support systems.
11. Signal, power, and fibre optic cables.
12. GSM-R, telephone, and network communication systems.
13. Cable laying works.
14. Technical equipment buildings and other buildings for maintenance and operation purposes.
15. Interfaces with existing systems at both ends of the INRAIL alignment.
16. Support systems: alarm and monitoring system; camera security and monitoring system; earthquake early warning system; wheel detector systems.

Confidential

The CTC Centre — including SCADA, signaling, and communication systems — will be located at the existing TCDD CTC Centre in Maltepe. The Package 2 contractor shall provide all necessary interfaces, connections, and software systems required to ensure the integrated and uninterrupted operation of the INRAIL project, including continuous connection to the Maltepe CTC Centre.
Civil works Contractors shall provide all civil prerequisites for the above Package 2 subsystems within their respective Lot boundaries. The full schedule of civil prerequisites — including equipment rooms, cable routes, conduit infrastructure, balise mounting positions, and power supply connections — is set out in the Interface Requirements Schedule in Chapter 4, Section 4.4.2 and in Annex L (Signaling and Telecommunication System Technical Specification). Civil works Contractors shall not close out any structure, tunnel, equipment room, or cable route corridor containing Package 2 provisions without written confirmation from the Engineer that all interface requirements for that element have been satisfactorily resolved, in accordance with Chapter 4, Section 4.4.1. The Package 2 Contractor shall also carry out all necessary additional arrangements at the existing TCDD CTC Centre in Maltepe — including preparation of system diagrams and software configuration — to establish all required interfaces and connections. All costs associated with facilities, equipment, materials, labor, transportation, and construction required for Package 2 works shall be within the Package 2 Contractor's responsibility.

### 5.3.6 Design Work Schedule

The Contractor shall prepare and maintain the following design work schedules, embedded within the Master Programme required under Chapter 4, Section 4.3:

- **Design Work Schedule:** covering all design stages from preliminary design through detailed design to as-built documentation, with submission and consent milestones for each deliverable.
- **Construction Work Schedule:** covering all construction activities from site establishment through to Taking-Over, reflecting the sequential dependency between design consent milestones and the commencement of the corresponding construction activities.

These schedules shall be updated monthly as part of the monthly progress reporting obligation set out in Chapter 4, Section 4.8.2.

## 5.4.1 Lot-Specific Scope of Works

The following sections set out the indicative scope and special requirements for each Lot. The lot-specific descriptions refine and supplement the general scope set out in Section 5.2 above. They do not repeat or supersede it.

## 5.4.2 Special Requirements

Based on the geological information set out in Annex C1 (Geological Data Report), the presence of coal-bearing and organically interbedded formations along the INRAIL alignment, together with abandoned coal mines in proximity to the Northern Marmara Motorway corridor, give rise to a foreseeable risk of hazardous gas accumulation during tunnelling and underground construction works. The formations identified as relevant to gas risk in Annex C1 include the Sultanbeyli,

Meşetepe, Danışmen, Gürpınar, and Kuşdili Formations, and the Belgrad Formation which contains thin lignite bands. The distribution of these formations across Lot boundaries shall be confirmed by the Contractor through its own site investigations.

The Contractor shall treat gas risk as a foreseeable geotechnical and occupational safety hazard throughout the design and construction phases. The Contractor shall carry out detailed ground and gas investigations — including boreholes, gas measurements, and a review of historical mining records — to characterise the extent and severity of the gas hazard within the relevant Lot.

Prior to the commencement of tunnelling or underground construction works in any area identified as subject to gas risk, the Contractor shall prepare and submit a Gas Monitoring and Management Plan to the Engineer for review and consent. The Gas Monitoring and Management Plan is a mandatory design-stage deliverable and shall address, as a minimum:

- the methodology for continuous gas monitoring within all tunnel drives and underground structures in affected areas;
- the ventilation design measures to dilute and safely remove hazardous gases during construction;
- the threshold values and alarm protocols applicable to each gas type identified in the site investigation; and
- the emergency response procedures applicable in the event of a detection threshold being exceeded.

5.5 Lot 1 - Construction and Electrification Works for the Çayırova – Sabiha Gökçen Airport – Kurtdoğmuş Corridor:

### 5.5.1 Overview

Lot 1 covers the eastern origin of the INRAIL alignment on the Anatolian side of Istanbul, commencing at the vicinity of the Çayırova TCDD Station and extending northwestward to the approach of Sabiha Gökçen Airport. Based on the preliminary design, the lot begins with a triangular (diamond) connection to the existing railway lines, separating into two arms, one double-line section of approximately 1,305.92 m and one single-line section of approximately 915.86 m, before continuing on the main double-track alignment for a further 26.470 km, terminating at km 26+470, some 200 meters beyond the end point of TBM Tunnel 1D-2 at km 26+270. The total alignment length under this lot is approximately 27,8 km of double track and 916 m of single track with total of approximately 28,7 km. These figures are indicative and based on the preliminary design; final quantities and dimensions shall be confirmed through the detailed design process. This lot is the most tunnelling-intensive contract within the project, with underground works constituting the dominant share of the scope and cost, and it also includes the construction of a new underground passenger station at Sabiha Gökçen Airport. As the Anatolian end-section contractor, the Lot 1 Contractor carries specific system-wide obligations for power supply simulation and CTC Center connection as set out in Sections 5.2.3 and 5.2.4. Interface obligations with TAV Airports are set out in Chapter 4, Section 4.8.2.

### 5.5.2 Key Structures and works:

- **Design Works:** The Contractor shall be responsible for the preparation of all preliminary and detailed design deliverables across all disciplines, including civil, structural, geotechnical, electrification, and tunnel electromechanical works, in accordance with the Employer's Requirements.
- **Infrastructure Relocations:** Prior to the commencement of principal works, the Contractor shall carry out all necessary relocation and protection of existing utilities and infrastructure affected by the alignment, including water supply, sewerage, electricity, gas, and telecommunications networks.
- **Ancillary Works:** The Contractor shall carry out all ancillary works required by its design and construction methodology, including ventilation shafts, cross-passages, drainage works, earthworks, temporary and permanent access arrangements, protection works, and reinstatement of affected areas, as necessary for the execution, completion, and safe operation of the Works.
- **Earthworks and Slope Stabilization**: The Contractor shall execute all earthworks, formation grading, and slope stabilization measures required along the open alignment sections of the lot, ensuring a stable and construction-ready formation throughout the project corridor. In addition to the existing slope stability requirements, the Contractor shall take into account the relevant rainfall/precipitation projections inputs identified under the Climate Resilience Assessment (CRA).
- **Soil Improvement Works:** Where required by ground conditions, the Contractor shall design and implement appropriate soil improvement measures. The method, depth, and extent of improvement shall be determined through the detailed design process.
- **Tunnels - TBM**: The principal tunnelling works within this lot comprises an extensive TBM (Tunnel Boring Machine) twin-bore tunnel drive extending over a significant length of the lot's alignment, constituting the single largest scope item within Lot 1. The TBM drive shall be executed portal to portal in accordance with the approved design. The Contractor shall be responsible for TBM procurement or lease, segment production, all tunnelling operations, and all associated temporary and permanent works.
- **Tunnels - NATM**: In addition to the TBM drive, the lot includes several New Austrian Tunnelling Method (NATM) tunnel sections, comprising turnout tunnels, single-line tunnels, platform tunnels serving Sabiha Gökçen Station, and connection and link tunnels. All NATM works shall be designed and constructed by the Contractor in accordance with the approved geotechnical design and support class selection.
- **Viaducts and Bridges:** The lot includes viaduct structures in the vicinity of the alignment's commencement point, where the triangular connection to the existing Çayırova TCDD railway lines is established. The structural solution, span arrangement, and foundation type shall be determined through the detailed design process.
- **Minor Structures**: The Contractor shall design and construct all culverts, underpasses, and overpasses required along the alignment in accordance with the Employer's Requirements and the approved design.

- **Station Works - Sabiha Gökçen Airport Station:** This Lot includes the construction of a new underground passenger station serving Sabiha Gökçen Airport, to be constructed beneath the existing airport operational environment. The station is currently developed to preliminary design level only. The Contractor for Lot 1 shall be responsible for developing, completing, coordinating, and obtaining the Engineer's approval of the full architectural, structural, civil, and electromechanical design of the station before commencing the relevant construction works.

  The Works require all necessary excavation, temporary support systems, and structural construction to be carried out within and adjacent to a live airport environment. The scope includes underground excavation and civil and structural construction of the station box and all associated below-ground structures; architectural and finishing works throughout all public and operational areas; and full installation of station electromechanical systems, including lifts, escalators, HVAC, MEP, and all public area installations.
- The Contractor shall ensure full integration of the station with the existing and planned metro, high-speed rail, and airport terminal systems, as applicable. Tenderers are advised that the station is located within the airport perimeter and is subject to the airport interface obligations set out in Chapter 4, Section 4.8.2. Tenderers shall make their own assessment of existing underground facilities, operational constraints, access restrictions, and interface risks based on the information made available in the Tender Documents, the pre-bid site visit, and any investigations required under the Contract. The Contractor shall be responsible for verifying existing underground conditions during design development and for coordinating with the relevant airport operator, DHMİ, the Engineer, and other relevant authorities before commencing any works affecting the airport operational environment.**Superstructure (Track) Works:** The Contractor shall complete all track works across the lot, including removal of any existing track infrastructure, construction of ballasted and ballastless track in accordance with the approved design, supply and installation of railway turnouts — including the turnout structures forming the triangular connection at the lot's origin — and rail expansion joints, and all track maintenance obligations during the construction period. Perimeter fencing shall be installed along the full extent of the alignment.
- **Electrification Works:** The Contractor shall design, supply, install, and commission the full electrification system across the lot, including catenary systems and conductors, traction substations, sectioning and insulation works, switchyard and electrical distribution systems, protection, metering, earthing and safety systems, and SCADA and telecommunications integration.
- **Tunnel Electromechanical Works:** The Contractor shall design and install all electromechanical systems within the tunnel structures, including ventilation, fire detection and suppression, lighting, emergency and evacuation systems, and all associated power and control systems.

***Indicative Structure List — Lot 1:***

*The structure list, descriptions, locations, and dimensions presented below are based on the preliminary design. All chainage references, lengths, and sizes are approximative and shall be confirmed through the detailed design process.*

***1.*** Tunnels

| **Location** | **Structure** | **Type** | **Start Point (approx.)** | **End Point (approx.)** | **Length (m) (approx.)** |
|---|---|---|---|---|---|
| Asian Side | Tunnel 1A-1 | TBM* | 0+845 | 12+859 | 12 014 |
| Asian Side | Tunnel 1A-2 | NATM | 12+859 | 13+231 | 372 |
| Asian Side | Tunnel 1A-3 | TBM* | 13+231 | 14+150 | 919 |
| Asian Side | Tunnel 1B-1 | NATM | 14+150 | 14+339 | 190 |
| Asian Side | Tunnel 1B-2 | TBM* | 14+339 | 14+956 | 617 |
| Asian Side | Tunnel 1B-3 | NATM | 14+339 | 14+451 | 112 |
| Asian Side | Tunnel P (Station Tunnel) | NATM | 14+451 | 14+851 | 400 |
| Asian Side | Tunnel 1B-4 | NATM | 14+851 | 14+956 | 105 |
| Asian Side | Tunnel 1C-1 | NATM | 14+956 | 15+145 | 189 |
| Asian Side | Tunnel 1C-2 | TBM* | 15+145 | 17+868 | 2 723 |
| Asian Side | Tunnel 1D-1 | NATM | 17+868 | 18+240 | 372 |
| Asian Side | Tunnel 1D-2 | TBM | 18+240 | 26+270 | 8 029 |
| **Total** | | | | | **26 042** |

** TBM tunnels will be constructed as double bore (twin tube). The lengths indicated represent half the total tube length (i.e., one bore).*

***2.*** Viaducts — Wye (Triangular) Connection

| Location | Structure | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|
| Asian Side | Viaduct A | 0+255 | 0+705 | 450 |
| Asian Side | Viaduct B | 0+285 | 1+010 | 725 |
| **Total** | | | | **1 175** |

***3.*** Underpasses

| Location | Reference | Chainage (approx.) | Size (m) |
|---|---|---|---|
| Asian Side | Underpass 1 | 0+075 | 10 x 6 |
| Asian Side | Underpass 2 | 0+083 | 10 x 6 |
| **Total Number** | | | **2** |

***4.*** Overpasses

| Location | Reference | Chainage (approx.) | Size — Width x Length (m) |
|---|---|---|---|
| Asian Side | Overpass 1 | 0+343.560 | 12 x 30 |
| Asian Side | Overpass 2 | 0+451.510 | 12 x 30 |
| Asian Side | Overpass 3 | 0+714.530 | 12 x 50 |
| **Total Number** | | | **3** |

***Indicative Slope Stabilization Sections — Lot 1:***

| PART NO | PART NAME |
|---|---|
| 1 | Between Project Start - Viaduct-A Start |
| 2 | Between Viaduct-A End - Connection-1 End |
| 3 | Between Project Start - Viaduct-B Start |
| 4 | Between Viaduct-B End - Connection-2 End |
| 5 | Between Project Start - Tunnel 1A-1 Start |
| 6 | Between Tunnel 1D-2 End - Lot-1 Project |

## 5.6 Lot 2 - Construction and Electrification Works for Kurtdoğmuş - Alibahadır Corridor:

### 5.6.1 Overview

Lot 2 covers the central section of the INRAIL alignment on the Anatolian side of Istanbul, commencing at km 26+470, approximately 200 meters beyond the end point of TBM Tunnel 1B in lot 1, and extending northwestward toward the Bosphorus crossing approach, terminating at km 52+079.50, some 50 meters beyond Bridge 12. Based on the preliminary design, the total alignment length under this lot is approximately 25.6 km of double track. These figures are indicative and based on the preliminary design; final quantities and dimensions shall be confirmed through the detailed design process. This lot is characterized by a combination of open alignment works, extensive NATM tunnelling through multiple separate tunnel structures, and a high concentration of viaduct and bridge structures traversing complex topography.

### 5.6.2 Key Works and Structures:

- **Design Works**: The Contractor shall be responsible for the preparation of all preliminary and detailed design deliverables across all disciplines, including civil, structural, geotechnical, electrification, and tunnel electromechanical works, in accordance with the Employer's Requirements.
- **Infrastructure Relocations:** Prior to the commencement of principal works, the Contractor shall carry out all necessary relocation and protection of existing utilities and infrastructure affected by the alignment, including water supply, sewerage, electricity, gas, and telecommunications networks.
- **Ancillary Works:** The Contractor shall carry out all ancillary works required by its design and construction methodology, including ventilation shafts, cross-passages, drainage works, earthworks, temporary and permanent access arrangements, protection works, and reinstatement of affected areas, as necessary for the execution, completion, and safe operation of the Works.
- **Earthworks and Slope Stabilization**: The Contractor shall execute all earthworks, formation grading, and slope stabilization measures required along the open alignment sections of the lot, ensuring a stable and construction-ready formation throughout the

project corridor. In addition to the existing slope stability requirements, the Contractor shall take into account the relevant rainfall/precipitation projections inputs identified under the Climate Resilience Assessment (CRA).

- **Soil Improvement Works** Where required by ground conditions, the Contractor shall design and implement appropriate soil improvement measures, including both shallow and deep improvement methods as applicable. The method, depth, and extent of improvement shall be determined through the detailed design process.
- **Tunnels - NATM:** This lot encompasses a series of NATM double-track tunnels distributed across the alignment, passing through varying ground conditions. An escape tunnel serving the NATM tunnel system shall also be constructed. All NATM work shall be designed and constructed by the Contractor in accordance with the approved geotechnical design and support class selection. The number, configuration, and extent of tunnel structures shall be confirmed through the detailed design process.
- **Tunnels - Cut and Cover**: The lot includes cut-and-cover tunnel sections at specific locations along the alignment where underground construction is required using open-cut methods. The configuration and extent of these structures shall be confirmed through the detailed design process.
- **Viaducts and Bridges:** This lot has a high concentration of bridge and viaduct structures traversing the varied terrain of the Asian side. The structural solutions, including foundation types, span arrangements, and deck configurations, shall be determined through the detailed design process.
- **Minor Structures:** The Contractor shall design and construct all culverts, underpasses, and overpasses required along the alignment in accordance with the Employer's Requirements and the approved design.
- **Superstructure (Track) Works:** The Contractor shall complete all track works across the lot, including construction of ballasted and ballastless track in accordance with the approved design, supply and installation of railway turnouts and rail expansion joints, and all track maintenance obligations during the construction period. Perimeter fencing shall be installed along the full extent of the alignment.
- **Electrification Works**: The Contractor shall design, supply, install, and commission the full electrification system across the lot, including catenary systems and conductors, traction substations, sectioning and insulation works, switchyard and electrical distribution systems, protection, metering, earthing and safety systems, and SCADA and telecommunications integration.
- **Tunnel Electromechanical Works**: The Contractor shall design and install all electromechanical systems within the tunnel structures, including ventilation, fire detection and suppression, lighting, emergency and evacuation systems, and all associated power and control systems.

### 5.6.3 Special Requirements

**Karstification and Void Risk**

Based on the geological information set out in Annex C1 (Geological Data Report), the Lot 2 alignment traverses carbonate-dominant limestone formations within which karstification and the occurrence of undocumented voids are foreseeable hazards. Borehole investigations have identified cavities — occasionally several metres in size, filled with reddish clay, sand, and angular gravel — within the Dolayoba Limestone member of the Pelitli Formation. The İstinye Formation, also present along the Lot 2 alignment, is a carbonate-dominant unit and shall be treated as subject to the same foreseeable risk. These features give rise to a foreseeable risk of sudden collapse, sinkhole formation, settlement, slope instability, and groundwater inflow during tunnelling and underground construction works.

The Contractor shall treat karstification and void occurrence as a foreseeable geotechnical risk throughout the design and construction phases. The Contractor shall carry out detailed borehole investigations and geophysical surveys to detect potential filled and unfilled karstic voids along the alignment before the commencement of tunnelling works in affected areas. Where karstic zones are encountered, the Contractor shall implement the necessary ground improvement measures — including targeted grouting and adjustments to tunnel lining design — as ground conditions require.

Prior to the commencement of tunnelling works in any area identified as subject to karst or void risk, the Contractor shall prepare and submit a Karst and Void Risk Management Plan to the Engineer for review and consent. The Karst and Void Risk Management Plan is a mandatory design-stage deliverable and shall address, as a minimum:

- the methodology for pre-excavation probing and void detection along affected tunnel drives;
- the ground improvement and void treatment measures to be applied where karstic features are encountered;
- the monitoring regime to be maintained during construction in affected areas; and the contingency procedures applicable in the event of unexpected void or collapse conditions being encountered during excavation.

***Indicative Structure List — Lot 2:***

*The structure list, descriptions, locations, and dimensions presented below are based on the preliminary design. All chainage references, lengths, and sizes are approximative and shall be confirmed through the detailed design process. The indicative structure list is provided in full in the Annex to this document.*

***1.*** Tunnels

| Location | Structure | Type | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|---|
| Asian Side | Tunnel-2 | NATM | 29+229 | 29+759 | 530 |
| Asian Side | Tunnel-3 | NATM | 30+359 | 32+999 | 2 640 |
| Asian Side | Tunnel-4 | NATM | 33+599 | 33+819 | 220 |

| | | | | | |
|---|---|---|---|---|---|
| Asian Side | Tunnel-5 | NATM | 34+039 | 36+239 | 2 200 |
| Asian Side | Tunnel-6 | NATM | 36+599 | 37+699 | 1 100 |
| Asian Side | Tunnel-7 | NATM | 43+199 | 44+514 | 1 315 |
| Asian Side | Tunnel-8 | NATM | 45+619 | 46+539 | 920 |
| Asian Side | Tunnel-9 | NATM | 46+799 | 47+429 | 630 |
| Asian Side | Tunnel-10 | NATM | 47+719 | 48+394 | 675 |
| Asian Side | Escape Tunnels | - | - | - | 2 498 |
| **Total** | | | | | **12 728** |

***2.*** Cut and Cover

| Location | Structure | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|
| Asian Side | Cut and Cover-1 | 28+519 | 28+714 | 195 |
| Asian Side | Cut and Cover-2 | 37+939 | 38+409 | 470 |
| **Total** | | | | **665** |

***3.*** Bridges

| Location | Structure | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|
| Asian Side | Bridge-1 | 26+959 | 27+439 | 480 |
| Asian Side | Bridge-2 | 28+189 | 28+349 | 160 |
| Asian Side | Bridge-3 | 28+829 | 29+139 | 310 |
| Asian Side | Bridge-4 | 36+309 | 36+384 | 75 |
| Asian Side | Bridge-5 | 39+849 | 40+949 | 1 100 |
| Asian Side | Bridge-6 | 41+014 | 41+609 | 595 |
| Asian Side | Bridge-7 | 41+734 | 42+089 | 355 |
| Asian Side | Bridge-8 | 42+214 | 43+139 | 925 |
| Asian Side | Bridge-9 | 44+799 | 45+544 | 745 |
| Asian Side | Bridge-10 | 49+184 | 49+579 | 395 |
| Asian Side | Bridge-11 | 49+709 | 49+849 | 140 |
| Asian Side | Bridge-12 | 50+949 | 52+029 | 1 080 |
| **Total** | | | | **6 360** |

***4.*** Culverts

| Location | Reference | Chainage (approx.) | Size (m) |
|---|---|---|---|
| Asian Side | Culvert-1 | 26+723.815 | 2.00 x 2.00 |
| Asian Side | Culvert-2 | 29+870.512 | 3.00 x 3.00 |
| Asian Side | Culvert-3 | 30+122.649 | 3.00 x 3.00 |
| Asian Side | Culvert-4 | 33+023.520 | 3.00 x 3.00 |
| Asian Side | Culvert-5 | 39+017.251 | 2.00 x 2.00 |
| Asian Side | Culvert-6 | 39+322.947 | 2.00 x 2.00 |
| Asian Side | Culvert-7 | 47+506.000 | 2.00 x 2.00 |
| Asian Side | Culvert-8 | 48+842.237 | 2.00 x 2.00 |
| **Total Number** | | | **8** |

***5.*** Underpasses

| Location | Reference | Chainage (approx.) | Size (m) |
|---|---|---|---|
| Asian Side | Underpass-3 | 26+675 | 10 x 6 |
| Asian Side | Underpass-4 | 27+988 | 10 x 6 |
| Asian Side | Underpass-5 | 33+023 | 10 x 6 |
| Asian Side | Underpass-6 | 38+790 | 10 x 6 |
| **Total Number** | | | **4** |

***6.*** Overpasses

| Location | Reference | Chainage (approx.) | Size — Width x Length (m) |
|---|---|---|---|
| Asian Side | Overpass-4 | 28+456 | 12 x 30 |
| **Total Number** | | | **1** |

***Indicative Slope Stabilization Sections — Lot 2:***

| PART NO | PART NAME |
|---|---|
| **1** | Between Lot-2 Start - Bridge 1 Start |
| **2** | Between Bridge 1 End - Bridge 2 Start |
| **3** | Between Bridge 2 End - Bridge 3 Start |
| **4** | Between Bridge 3 End - Tunnel 2 Start |
| **5** | Between Tunnel 2 End - Tunnel 3 Start |
| **6** | Between Tunnel 3 End - Tunnel 4 Start |
| **7** | Between Tunnel 4 End - Tunnel 5 Start |
| **8** | Between Tunnel 5 End - Bridge 4 Start |
| **9** | Between Bridge 4 End - Tunnel 6 Start |
| **10** | Between Tunnel 6 End - Bridge 5 Start |
| **11** | Between Bridge 5 End - Bridge 6 Start |
| **12** | Between Bridge 6 End - Bridge 7 Start |
| **13** | Between Bridge 7 End - Bridge 8 Start |
| **14** | Between Bridge 8 End - Tunnel 7 Start |
| **15** | Between Tunnel 7 End - Bridge 9 Start |
| **16** | Between Bridge 9 End - Tunnel 8 Start |
| **17** | Between Tunnel 8 End - Tunnel 9 Start |
| **18** | Between Tunnel 9 End - Tunnel 10 Start |
| **19** | Between Tunnel 10 End - Bridge 10 Start |
| **20** | Between Bridge 10 End - Bridge 11 Start |
| **21** | Between Bridge 11 End - Bridge 12 Start |
| **22** | Between Bridge 12 End - Lot-2 End |

## 5.7 Lot 3 - Construction and Electrification Works for the Alibahadır – YSS Bridge – Mithatpaşa Corridor

### 5.7.1 Overview

Lot 3 is the most strategically significant lot within the INRAIL project, encompassing the Bosphorus crossing via the existing Yavuz Sultan Selim (YSS) Bridge, together with the approach alignments on both the Asian and European sides of the crossing. Based on the preliminary design, the lot commences at km 52+079.50, approximately 50 meters beyond the end point of Bridge 12, and extends to km 22+600 on the European side, terminating some 50 meters before Bridge 32. The total alignment length under this lot is approximately 32 km, including the Bosphorus crossing via the Yavuz Sultan Selim Bridge. These figures are indicative and based on the preliminary design; final quantities and dimensions shall be confirmed through the detailed design process. This lot is characterized by a high density of bridge and viaduct structures, multiple NATM and cut-and-cover tunnel sections, and the integration of the new railway infrastructure with the existing YSS Bridge structure. Lot 3 is structurally unique within the INRAIL project: unlike the other Lots, itrequires the integration of railway infrastructure — including track, electrification provisions, and systems civil works — into an existing structure that will remain in full motorway operation throughout the construction period.

**Design and Build Disclaimer — YSS Bridge:** Information relating to the existing Yavuz Sultan Selim Bridge structure made available within the Tender Documents is provided for reference only and represents the Employer's available information at the time of tender. The Employer does not warrant that such information is complete, accurate, or sufficient for design purposes. The Contractor shall independently verify all structural, geometric, operational, and loading parameters as part of its design investigation and assessment programme and shall satisfy itself as to the suitability of the existing structure for the proposed Works.
The Contractor shall be solely responsible for obtaining all necessary technical clarifications, confirmations, design information, approvals, and coordination required from the bridge operator, original bridge designer, and any other relevant third parties necessary for the development, verification, and completion of its design.
The Contractor shall undertake all further investigations, analyses, design verification, and independent technical assessment necessary to confirm compliance with the Contract requirements and safe railway operation. Any material discrepancy identified between the Tender Documents and conditions encountered during design development or construction shall be promptly notified to the Engineer.

### 5.7.2 Key Works and Structures:

- **Design Works**: The Contractor shall be responsible for the preparation of all preliminary and detailed design deliverables across all disciplines, including civil, structural, geotechnical, electrification, and tunnel electromechanical works, as well as structural assessment and interface coordination with the YSS Bridge authority, in accordance with the Employer's Requirements.

- **Infrastructure Relocations:** Prior to the commencement of principal works, the Contractor shall carry out all necessary relocation and protection of existing utilities and infrastructure affected by the alignment, including water supply, sewerage, electricity, gas, and telecommunications networks.
- **Ancillary Works:** The Contractor shall design and construct all ancillary works required for the safe installation, operation, maintenance, and emergency use of the railway infrastructure on the bridge deck, including fire detection systems, emergency egress provisions, drainage works, maintenance access facilities, protection works, and any associated civil, structural, electrical, mechanical, and interface works required by the Contractor's design and the applicable requirements of the Bridge Operator, KGM, the Engineer, and other relevant authorities.
- **Earthworks and Slope Stabilization:** The Contractor shall execute all earthworks, formation grading, and slope stabilization measures required along the open alignment sections of the lot, including on the approach embankments to the YSS Bridge and along the European side approach corridor, ensuring a stable and construction-ready formation throughout the project corridor. In addition to the existing slope stability requirements, the Contractor shall take into account the relevant rainfall/precipitation projections inputs identified under the Climate Resilience Assessment (CRA).
- **Soil Improvement Works:** Where required by ground conditions, the Contractor shall design and implement appropriate soil improvement measures across the lot on both the Asian and European sides of the Bosphorus. The method, depth, and extent of improvement shall be determined through the detailed design process.
- **Tunnels-NATM:** The lot includes a series of NATM double-track tunnels distributed across the approach alignments on both sides of the Bosphorus, passing through varying ground conditions. An escape tunnel serving the NATM tunnel system shall also be constructed. All NATM works shall be designed and constructed by the Contractor in accordance with the approved geotechnical design and support class selection. The number, configuration, and extent of tunnel structures shall be confirmed through the detailed design process.
- **Tunnels-Cut and Cover:** The lot includes several cut-and-cover tunnel sections at locations where ground conditions or urban constraints require underground construction using open-cut methods. The configuration and extent of these structures shall be confirmed through the detailed design process.
- **Viaducts and Bridges:** This lot contains the highest concentration of bridge and viaduct structures within the project, reflecting the topography of the Bosphorus approach corridors on both the Asian and European sides. Structures include major viaducts and bridges crossing valleys, waterways, and other obstacles. The structural solutions, including foundation types, span arrangements, and deck configurations, shall be determined through the detailed design process.

Confidential

- **Bosphorus Crossing — Yavuz Sultan Selim Bridge** The railway crossing of the Bosphorus Strait is achieved through the utilization of the existing Yavuz Sultan Selim Bridge, using the track space already allocated on the bridge's dedicated lower deck reserved for rail use. The Contractor shall design and construct all works necessary to integrate the INRAIL railway infrastructure with the bridge's existing rail deck, including all structural connections, track systems, and associated electrification and systems works on the bridge. All interface works shall be carried out in close coordination with the relevant bridge authority and in accordance with the applicable technical requirements governing the existing structure. The Contractor’s scope shall also include the design and construction of all required approach and transition structures on both the Asian and European sides of the crossing, including structural connection details and expansion joint systems necessary to ensure continuity between the bridge lower deck and the adjoining railway alignment. The final structural and technical configuration of all such works shall be subject to the Contractor’s structural analysis, dynamic assessment, and detailed design development.
- **Minor Structures:** The Contractor shall design and construct all culverts, underpasses, and overpasses required along the alignment in accordance with the Employer's Requirements and the approved design.
- **Superstructure (Track) Works:** The Contractor shall complete all track works across the lot, including construction of ballasted and ballastless track in accordance with the approved design, supply and installation of railway turnouts and rail expansion joints, and all track maintenance obligations during the construction period. Perimeter fencing shall be installed along the full extent of the alignment.
- **Electrification Works:** The Contractor shall design, supply, install, and commission the full electrification system across the lot, including catenary systems and conductors, traction substations, sectioning and insulation works, switchyard and electrical distribution systems, protection, metering, earthing and safety systems, and SCADA and telecommunications integration.
- **Tunnel Electromechanical Works:** The Contractor shall design and install all electromechanical systems within the tunnel structures, including ventilation, fire detection and suppression, lighting, emergency and evacuation systems, and all associated power and control systems.

### 5.7.3 Special Requirements

**Structural Compatibility, Dynamic Performance, and Aerodynamic Stability**

The railway infrastructure to be installed on the existing lower deck of the Yavuz Sultan Selim Bridge — including track structure, overhead contact system supports, and associated fixings — shall be designed to be fully compatible with the bridge's structural design basis and its operating environment over the Bosphorus Strait. The Contractor shall treat structural compatibility,

dynamic performance under train loading, aerodynamic stability, and expansion joint design as foreseeable design risks and shall carry out all analyses necessary to characterise and address them as part of the design development process.

The Contractor shall obtain all structural and technical documentation relating to the existing YSS Bridge directly from KGM and the Bridge Operator, and shall base all compatibility and dynamic analyses on that documentation. All design proposals for works on the bridge deck shall be submitted to KGM and the Bridge Operator for review and approval before detailed design is finalised, in accordance with Section 4.8.1 of these Employer's Requirements.

The analyses required under this Section shall address, as a minimum:

- the compatibility of all railway integration works with the existing bridge deck under all foreseeable static and dynamic loading combinations, including braking and traction forces;
- the dynamic response of the bridge structure under train-induced loading, including resonance effects and fatigue implications for the existing structural elements;
- the aerodynamic stability of the railway infrastructure — including overhead contact system supports and track components — under the wind conditions prevailing at the bridge location; and
- the design of all expansion joints and structural transition zones to accommodate the relative movements between the railway infrastructure and the existing bridge structure under thermal, dynamic, and seismic loading.
- **Fire Performance** : The Contractor shall carry out a fire risk assessment for the bridge crossing, addressing the fire load scenarios applicable to the train types operating on the line. Where the assessment identifies that the existing bridge structure cannot demonstrate adequate performance under the applicable fire scenario, the Contractor shall design and implement appropriate fire protection measures to reduce the residual risk to an acceptable level, subject to approval by the bridge authority and the Engineer.
- **Derailment Containment**: The Contractor shall review the derailment containment provisions applicable to the existing bridge deck and incorporate guard rail or equivalent containment measures in the track design where required by the bridge's structural design basis, applicable standards, or the bridge authority's technical requirements.
- **Maintenance Access and Bridge Operations** : The Contractor shall coordinate with the bridge authority to understand the planned maintenance regime for the bridge's primary structural elements, including cable and hanger replacement cycles, and shall ensure that the design of the railway integration works does not conflict with the execution of such maintenance. Any requirements for planned possessions or operational restrictions arising from the bridge's maintenance programme shall be reflected in the Contractor's construction and operational planning.
- **Evacuation**: The Contractor shall study and design evacuation provisions for the bridge crossing in accordance with applicable regulations and the operational safety requirements of the project, in coordination with the bridge authority.
- **Crash Barriers and Protective Infrastructure** The Contractor's scope includes any modifications or additions to existing crash barriers or protective infrastructure on the

bridge deck required to meet the safety standards applicable to railway operations, subject to the approval of the bridge authority.

***Indicative Structure List — Lot 3:***

*The structure list, descriptions, locations, and dimensions presented below are based on the preliminary design. All chainage references, lengths, and sizes are approximative and shall be confirmed through the detailed design process. The indicative structure list is provided in full in the Annex to this document.*

***1.*** Tunnels (NATM)

| Location | Structure | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|
| Asian Side | Tunnel-11 | 56+279 | 57+539 | 1 260 |
| Asian Side | Tunnel-12 | 57+929 | 58+524 | 595 |
| European Side | Tunnel-13 | 0+000 | 0+800 | 800 |
| European Side | Tunnel-14 | 3+900 | 4+400 | 500 |
| European Side | Tunnel-15 | 6+360 | 7+410 | 1 050 |
| European Side | Tunnel-16 | 8+250 | 8+600 | 350 |
| European Side | Tunnel-17 | 13+890 | 14+910 | 1 020 |
| European Side | Tunnel-18 | 15+440 | 15+760 | 320 |
| European Side | Escape Tunnels | - | - | 1 259 |
| **Total** | | | | **7 154** |

***2.*** Cut and Cover

| Location | Structure | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|
| Asian Side | Cut & Cover-3 | 53+149 | 53+209 | 60 |
| Asian Side | Cut & Cover-4 | 53+904 | 53+969 | 65 |
| Asian Side | Cut & Cover-4A | 58+524 | 58+808 | 284 |
| European Side | Cut & Cover-5A | -0+452 | 0+000 | 452 |
| European Side | Cut & Cover-5 | 1+100 | 1+300 | 200 |
| European Side | Cut & Cover-6 | 1+535 | 1+590 | 55 |
| European Side | Cut & Cover-7 | 2+200 | 2+505 | 305 |
| European Side | Cut & Cover-8 | 12+000 | 12+110 | 110 |
| European Side | Cut & Cover-9 | 16+185 | 16+240 | 55 |
| **Total** | | | | **1 586** |

***3.*** Bridges

| Location | Structure | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|
| Asian Side | Bridge-13 | 52+529 | 52+919 | 390 |
| Asian Side | Bridge-14 | 54+164 | 54+324 | 160 |
| Asian Side | Bridge-15 | 54+729 | 54+824 | 95 |
| Asian Side | Bridge-16 | 55+129 | 55+429 | 300 |
| Asian Side | Bridge-17 | 55+869 | 56+159 | 290 |
| Asian Side | Bridge-18 | 57+679 | 57+839 | 160 |
| European Side | Bridge-19 | 0+870 | 1+030 | 160 |
| European Side | Bridge-20 | 1+720 | 1+905 | 185 |
| European Side | Bridge-21 | 2+640 | 3+410 | 770 |
| European Side | Bridge-22 | 4+880 | 5+540 | 660 |
| European Side | Bridge-23 | 8+670 | 8+980 | 310 |

| | | | | |
|---|---|---|---|---|
| European Side | Bridge-24 | 10+270 | 11+180 | 910 |
| European Side | Bridge-25 | 11+335 | 11+660 | 325 |
| European Side | Bridge-26 | 12+425 | 12+625 | 200 |
| European Side | Bridge-27 | 12+780 | 12+980 | 200 |
| European Side | Bridge-28 | 17+280 | 17+520 | 240 |
| European Side | Bridge-29 | 18+640 | 19+620 | 980 |
| European Side | Bridge-30 | 21+050 | 21+370 | 320 |
| European Side | Bridge-31 | 21+520 | 22+150 | 630 |
| **Total** | | | | **7 285** |

***4.*** Culverts

| Location | Reference | Chainage (approx.) | Size (m) |
|---|---|---|---|
| Asian Side | Culvert-9 | 53+044 | 2.00 x 2.00 |
| Asian Side | Culvert-9A | 53+509 | 2.00 x 2.00 |
| European Side | Culvert-10 | 1+444 | 3.00 x 3.00 |
| European Side | Culvert-11 | 3+645 | 2.00 x 2.00 |
| European Side | Culvert-12 | 6+175 | 3.00 x 3.00 |
| European Side | Culvert-13 | 7+590 | 2.00 x 2.00 |
| European Side | Culvert-14 | 8+021 | 2 x (3.00 x 3.00) |
| European Side | Culvert-15 | 9+350 | 2.00 x 2.00 |
| European Side | Culvert-16 | 12+150 | 2.00 x 2.00 |
| European Side | Culvert-17 | 13+060 | 2.00 x 2.00 |
| European Side | Culvert-18 | 13+432 | 2.00 x 2.00 |
| European Side | Culvert-19 | 15+165 | 3.00 x 3.00 |
| European Side | Culvert-20 | 15+990 | 2.00 x 2.00 |
| European Side | Culvert-21 | 16+850 | 2.00 x 2.00 |
| European Side | Culvert-22 | 18+360 | 2.00 x 2.00 |
| European Side | Culvert-23 | 20+855 | 2.00 x 2.00 |
| **Total Number** | | | **16** |

***5.*** Overpasses

| Location | Reference | Chainage (approx.) | Size — Width x Length (m) |
|---|---|---|---|
| Asian Side | Overpass-5 | 54+453 | 12 x 30 |
| European Side | Overpass-6 | 6+040 | 12 x 30 |
| European Side | Overpass-7 | 6+224 | 12 x 30 |
| European Side | Overpass-8 | 17+000 | 12 x 30 |
| European Side | Overpass-9 | 19+535 | 12 x 30 |
| **Total Number** | | | **5** |

***Indicative Slope Stabilization Sections — Lot 3:***

| PART | PART NAME |
|---|---|
| **1** | Between Lot-3 Start - Bridge 13 Start |
| **2** | Between Bridge 13 End - Bridge 14 Start |
| **3** | Between Bridge 14 End - Bridge 15 Start |
| **4** | Between Bridge 15 End - Bridge 16 Start |
| **5** | Between Bridge 16 End - Bridge 17 Start |

| | |
|---|---|
| **6** | Between Bridge 17 End - Tunnel 11 Start |
| **7** | Between Tunnel 11 End - Bridge 18 Start |
| **8** | Between Bridge 18 End - Tunnel 12 Start |
| **9** | Between Tunnel 13 End - Bridge 19 Start |
| **10** | Between Bridge 19 End - Bridge 20 Start |
| **11** | Between Bridge 20 End - Bridge 21 Start |
| **12** | Between Bridge 21 End - Tunnel 14 Start |
| **13** | Between Tunnel 14 End - Bridge 22 Start |
| **14** | Between Bridge 22 End - Tunnel 15 Start |
| **15** | Between Tunnel 15 End - Tunnel 16 Start |
| **16** | Between Tunnel 16 End - Bridge 23 Start |
| **17** | Between Bridge 23 End - Bridge 24 Start |
| **18** | Between Bridge 24 End - Bridge 25 Start |
| **19** | Between Bridge 25 End - Bridge 26 Start |
| **20** | Between Bridge 26 End - Bridge 27 Start |
| **21** | Between Bridge 27 End - Tunnel 17 Start |
| **22** | Between Tunnel 17 End - Tunnel 18 Start |
| **23** | Between Tunnel 18 End - Bridge 28 Start |
| **24** | Between Bridge 28 End - Bridge 29 Start |
| **25** | Between Bridge 29 End - Bridge 30 Start |
| **26** | Between Bridge 30 End - Bridge 31 Start |
| **27** | Between Bridge 31 End - Lot 3 End |

## 5.8 Lot 4 Construction and Electrification Works for the Mithatpaşa – İstanbul Airport – Çatalca Corridor

### 5.8.1 Overview

Lot 4 covers the European side of the INRAIL alignment, extending from the end of Lot 3 at km 22+600 northwestward to the Çatalca junction, where the alignment connects via a triangular (wye) junction to the Halkalı–Kapıkule High-Speed Railway Line. Based on the preliminary design, the lot terminates at km 28+584.96, at the intersection point of the two-track triangular connection arm with the existing Ispartakule–Çerkezköy Line and includes the connection to the existing TCDD network at the western end of the alignment. The total alignment length under this lot is approximately 37.8 km of double-track main line and approximately 2.0 km of single-track triangular connection arm with total length of approximately 39.8 km, inclusive of the turnout installation works on the existing double lines. These figures are indicative and based on the preliminary design; final quantities and dimensions shall be confirmed through the detailed design process. This lot is characterized by a major TBM tunnel drive, significant NATM and cut-and-cover tunnel sections, an extensive viaduct and bridge programme, and the construction of Istanbul Airport Station within an underground structure already reserved for this purpose. As the European end-section contractor, the Lot 4 Contractor carries specific system-wide obligations for

power supply simulation as set out in Section 5.3.3. Interface obligations with İGA are set out in Chapter 4, Section 4.8.2.

### 5.8.2. Key Works and Structures:

- **Design Works:** The Contractor shall be responsible for the preparation of all preliminary and detailed design deliverables across all disciplines, including civil, structural, geotechnical, electrification, and tunnel electromechanical works, as well as coordination with Istanbul Airport authorities and the Halkalı–Kapıkule project, in accordance with the Employer's Requirements.
- **Infrastructure Relocations** Prior to the commencement of principal works, the Contractor shall carry out all necessary relocation and protection of existing utilities and infrastructure affected by the alignment, including water supply, sewerage, electricity, gas, and telecommunications networks.
- **Ancillary Works:** The Contractor shall carry out all ancillary works required by its design and construction methodology, including ventilation shafts, cross-passages, drainage works, earthworks, temporary and permanent access arrangements, protection works, and reinstatement of affected areas, as necessary for the execution, completion, and safe operation of the Works.
- **Earthworks and Slope Stabilization:** The Contractor shall execute all earthworks, formation grading, and slope stabilization measures required along the open alignment sections of the lot, ensuring stable and construction-ready formation throughout the project corridor. In addition to the existing slope stability requirements, the Contractor shall take into account the relevant rainfall/precipitation projections inputs identified under the Climate Resilience Assessment (CRA).
- **Soil Improvement Works:** Where required by ground conditions, the Contractor shall design and implement appropriate soil improvement measures across the lot. The method, depth, and extent of improvement shall be determined through the detailed design process.
- **Tunnels: TBM:** This lot includes a major TBM (Tunnel Boring Machine) twin-bore tunnel drive extending over a significant length of the European side alignment, constituting a dominant cost and programme driver for this lot. The TBM drive shall be executed portal to portal in accordance with the approved design. The Contractor shall be responsible for TBM procurement or lease, segment production, all tunnelling operations, and all associated temporary and permanent works.
- **Tunnels-NATM:** The lot includes NATM tunnel sections of varying lengths and ground classifications distributed across the alignment. All NATM works shall be designed and constructed by the Contractor in accordance with the approved geotechnical design and support class selection. The number, configuration, and extent of tunnel structures shall be confirmed through the detailed design process.
- **Tunnels -Cut and Cover:** The lot includes several cut-and-cover tunnel sections at locations where ground conditions or urban constraints require underground construction

using open-cut methods. The configuration and extent of these structures shall be confirmed through the detailed design process.

- **Viaducts and Bridges:** The lot includes an extensive programme of viaduct and bridge structures crossing valleys and other topographic obstacles along the European side corridor. The structural solutions, including foundation types, span arrangements, and deck configurations, shall be determined through the detailed design process.
- **Minor Structures:** The Contractor shall design and construct all culverts, underpasses, and overpasses required along the alignment in accordance with the Employer's Requirements and the approved design.
- **Station Works: Istanbul Airport Station** This lot includes the completion of the underground passenger station serving Istanbul Airport. An underground structure has already been reserved and constructed in anticipation of the future station. The Contractor shall design and execute all works required to fit out and complete the station within the existing reserved structure, including all civil finishing works, architectural and finishing works throughout all public and operational areas, connection with the operational metro station, and the full installation of station electromechanical systems, including lifts, escalators, HVAC, MEP, and all public area installations. The Contractor shall ensure that freight train tracks are physically and operationally separated from passenger train lines and platform areas within Istanbul Airport Station, as required for fire life safety purposes. The station is located within the airport perimeter and shall therefore be subject to the applicable interface and coordination obligations with the airport operator, as set out in Chapter 4, Section 4.7.2. As-built information relating to the completed station structure shall be made available as part of the tender dossier. Tenderers shall also be given the opportunity to inspect the existing station facility during the pre-bid site visit.
- **Çatalca Junction — Connection to Halkalı–Kapıkule Line** The lot includes all works associated with the triangular (wye) junction near Çatalca, providing the INRAIL alignment's connection to the Halkalı–Kapıkule High-Speed Railway Line. The junction works shall include all civil, structural, and track works required to achieve a fully operational and interoperable connection between the two lines, including the turnout installation works on the existing double lines.
- **Superstructure (Track) Works:** The Contractor shall complete all track works across the lot, including construction of ballasted and ballastless track in accordance with the approved design, supply and installation of railway turnouts and rail expansion joints, and all track maintenance obligations during the construction period. Perimeter fencing shall be installed along the full extent of the alignment.
- **Electrification Works:** The Contractor shall design, supply, install, and commission the full electrification system across the lot, including catenary systems and conductors, traction substations, sectioning and insulation works, switchyard and electrical distribution systems, protection, metering, earthing and safety systems, and SCADA and telecommunications integration.

- **Tunnel Electromechanical Works:** The Contractor shall design and install all electromechanical systems within the tunnel structures, including ventilation, fire detection and suppression, lighting, emergency and evacuation systems, and all associated power and control systems.

### 5.8.3. Special Requirements

**Swelling Clay**

Based on the geological information set out in Annex C1 (Geological Data Report), the Belgrad Formation — present along significant sections of the Lot 4 tunnel alignment and characterised by unconsolidated clayey gravels, coarse sands, and bentonitic clay horizons — gives rise to a foreseeable risk of swelling clay conditions during tunnelling and underground construction works. The Belgrad Formation's bentonitic clay content is capable of generating significant and sustained swell pressures on tunnel linings, and its unconsolidated character presents additional risks of face instability and groundwater inflow during both TBM and NATM drives. The Contractor shall treat swelling clay as a foreseeable geotechnical risk throughout the design and construction phases.

No geotechnical characterisation of the Belgrad Formation — including swell pressure, strength parameters, or permeability — has been carried out during the conceptual design stage. The Contractor shall carry out such additional site investigations as are necessary to characterise the swelling clay hazard along the alignment, including dedicated boreholes and swell pressure testing on samples recovered from the Belgrad Formation. The investigation programme shall determine the spatial extent and variability of bentonitic clay horizons, groundwater conditions within the formation, and the range of swell pressures to be adopted in design.

The tunnel lining design for sections traversing the Belgrad Formation shall incorporate the findings of the swell pressure testing programme and shall be updated as investigation results become available throughout the design process. For TBM drives within the Belgrad Formation, the Contractor shall additionally assess the implications of bentonitic clay for face stability, TBM cutterhead design, and slurry management, and shall incorporate appropriate measures into the construction methodology.

The Contractor shall implement a monitoring regime during construction in areas where swelling clay conditions are encountered, sufficient to detect any swell-induced deformation of the lining or surrounding ground at an early stage and to trigger appropriate remedial action before structural integrity is compromised.

***Indicative Structure List — Lot 4:***

*The structure list, descriptions, locations, and dimensions presented below are based on the preliminary design. All chainage references, lengths, and sizes are approximative and shall be confirmed through the detailed design process. The indicative structure list is provided in full in the Annex to this document.*

***1.*** Tunnels

| Location | Structure | Type | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|---|
| European Side | Tunnel-19 | TBM* | 26+330 | 29+718 | 3 389 |
| European Side | Tunnel-19-A | NATM | 29+718 | 30+091 | 372 |
| European Side | Tunnel-19-B | TBM* | 30+091 | 31+352 | 1 261 |
| European Side | Tunnel-19-C | NATM | 31+352 | 31+552 | 200 |
| European Side | Tunnel-20-A | NATM | 0+631 | 0+804 | 173 |
| European Side | Tunnel-20-B | TBM* | 0+804 | 2+384 | 1 580 |
| European Side | Tunnel-20-C | NATM | 2+384 | 2+935 | 551 |
| European Side | Tunnel-20-D | TBM* | 2+935 | 3+639 | 825 |
| European Side | Tunnel-20-E | NATM | 3+639 | 4+201 | 562 |
| European Side | Tunnel-20-F | TBM* | 4+201 | 5+600 | 1 399 |
| European Side | Tunnel-21 | TBM* | 5+880 | 7+505 | 1 625 |
| European Side | Tunnel-22 | NATM | 9+120 | 9+800 | 680 |
| European Side | Tunnel-23 | NATM | 11+130 | 11+630 | 500 |
| European Side | Tunnel-24 | NATM | 13+120 | 16+730 | 3 610 |
| European Side | Tunnel-25 | NATM | 17+190 | 17+610 | 420 |
| European Side | Escape Tunnels | - | - | - | 1 490 |
| **Total** | | | | | **18 637** |

** TBM tunnels will be constructed as double bore (twin tube). The lengths indicated represent half the total tube length (i.e., one bore).*

***2.*** Cut and Cover

| Location | Structure | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|
| European Side | Cut & Cover-10 | 24+600 | 24+880 | 280 |
| European Side | Cut & Cover-11 | 25+300 | 25+390 | 90 |
| European Side | Cut & Cover-12 | 25+590 | 26+000 | 410 |
| European Side | Cut & Cover-13 | 5+600 | 5+880 | 280 |
| European Side | Cut & Cover-14 | 7+505 | 7+650 | 145 |
| European Side | Cut & Cover-15 | 12+465 | 12+740 | 275 |
| **Total** | | | | **1 480** |

***3.*** Bridges

| Location | Structure | Start Point (approx.) | End Point (approx.) | Length (m) (approx.) |
|---|---|---|---|---|
| European Side | Bridge-32 | 22+650 | 23+440 | 790 |
| European Side | Bridge-33 | 23+650 | 24+250 | 600 |
| European Side | Bridge-34 | 8+315 | 8+685 | 370 |
| European Side | Bridge-35 | 10+160 | 10+700 | 540 |
| European Side | Bridge-36 | 11+760 | 12+200 | 440 |
| European Side | Bridge-37 | 17+760 | 18+000 | 240 |
| European Side | Bridge-38 | 19+180 | 22+100 | 2 920 |
| European Side | Bridge-39 | 23+872 | 23+912 | 40 |
| European Side | Bridge-40 | 26+097 | 27+397 | 1 300 |
| **Total** | | | | **7 240** |

***4.*** Culverts

| Location | Reference | Chainage (approx.) | Size (m) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| European Side | Culvert-24 | 24+515 | 2.00 x 2.00 |
| European Side | Culvert-25 | 25+190 | 2.00 x 2.00 |
| European Side | Culvert-26 | 25+490 | 2.00 x 2.00 |
| European Side | Culvert-27 | 26+175 | 2.00 x 2.00 |
| European Side | Culvert-28 | 7+925 | 2.00 x 2.00 |
| European Side | Culvert-29 | 8+945 | 2.00 x 2.00 |
| European Side | Culvert-30 | 12+845 | 2.00 x 2.00 |
| European Side | Culvert-31 | 16+860 | 2.00 x 2.00 |
| European Side | Culvert-32 | 18+828 | 3.00 x 3.00 |
| European Side | Culvert-33 | 22+237 | 3.00 x 3.00 |
| European Side | Culvert-34 | 24+355 | 2.00 x 2.00 |
| European Side | Culvert-35 | 25+340 | 2 x (3.00 x 3.00) |
| European Side | Culvert-36 | 25+825 | 2.00 x 2.00 |
| European Side | Culvert-37 | 27+673 | 2.00 x 2.00 |
| European Side | Culvert-38 | 0+902 | 2.00 x 2.00 |
| **Total Number** | | | **15** |

***5.*** Underpasses

| Location | Reference | Chainage (approx.) | Size (m) |
|---|---|---|---|
| European Side | Underpass-7 | 25+543 | 10 x 6 |
| European Side | Underpass-8 | 27+898 | 10 x 6 |
| European Side | Underpass-9 | 0+490 | 10 x 6 |
| **Total Number** | | | **3** |

***6.*** Overpasses

| Location | Reference | Chainage (approx.) | Size — Width x Length (m) |
|---|---|---|---|
| European Side | Overpass-10 | 24+917 | 12 x 30 |
| European Side | Overpass-11 | 1+125 | 12 x 20 |
| **Total Number** | | | **2** |

***Indicative Slope Stabilization Sections — Lot 4:***

| PART | PART NAME |
|---|---|
| **1** | Between Lot 4 Start - Bridge 32 Start |
| **2** | Between Bridge 32 End - Bridge 33 Start |
| **3** | Between Bridge 33 End - Tunnel 19 Start |
| **4** | Between Tunnel 20-F End - Tunnel 21 Start |
| **5** | Between Tunnel 21 End - Bridge 34 Start |
| **6** | Between Bridge 34 End - Tunnel 22 Start |
| **7** | Between Tunnel 22 End - Bridge 35 Start |
| **8** | Between Bridge 35 End - Tunnel 23 Start |
| **9** | Between Tunnel 23 End - Bridge 36 Start |
| **10** | Between Bridge 36 End - Tunnel 24 Start |
| **11** | Between Tunnel 24 End -Tunnel 25 Start |
| **12** | Between Tunnel 25 End - Bridge 37 Start |
| **13** | Between Bridge 37 End - Bridge 38 Start |

| | |
|---|---|
| **14** | Between Bridge 38 End - Bridge 39 Start |
| **15** | Between Bridge 39 End - Bridge 40 Start |
| **16** | Between Bridge 40 End - Lot 4 End |
| **17** | Between Connection Start - Connection End |

## 5.9 Works Common to All Lots

### 5.9.1 Excavated Material Management

The four civil works Lots under INRAIL will collectively generate the approximate volumes of excavated material listed below:

| | |
|---|---|
| Lot-1 | 580,000 $m^3$ |
| Lot-2 | 4,950,000 $m^3$ |
| Lot-3 | 8,800,000 $m^3$ |
| Lot-4 | 4,850,000 $m^3$ |

An indicative figure based on the Conceptual Design Report (Annex B1) subject to the Contractor's independent verification. Excavated material management is one of the most significant environmental and logistical challenges of the project.

The Contractor shall prepare and submit a Contractor's Environmental and Social Management Plan (C-ESMP) to the Engineer for review and approval prior to the commencement of any Works. The C-ESMP shall include, inter alia, detailed procedures and measures for the management of excavated material and waste, including identification of reuse, transportation, storage, handling, and final disposal arrangements. The C-ESMP shall apply the following material reuse hierarchy for excavated material and waste: reuse within the permanent works as the first priority; thereafter approved off-site reuse at licensed facilities; and finally disposal at pre-approved licensed disposal sites. The Contractor shall not commence any excavation works unless all disposal sites and relevant management arrangements to be used under the Contract have been identified and pre-approved in accordance with the approved C-ESMP.

### 5.9.2 Cross-Passage Requirements

For all twin-bore TBM tunnel sections under the Contract, the Contractor shall provide cross-passages connecting the two tunnel bores at intervals and to dimensions consistent with the fire life safety requirements of Chapter 8 (System Integration, RAMS and Safety) and Annex E (Design Services Technical Specification). Cross-passage spacing, dimensions, and fire door specifications shall be confirmed in the Contractor's detailed design and approved by the Engineer before tunnel boring commences in the relevant section.

### 5.9.3 Construction Logistics

The Contractor shall prepare a Construction Logistics Plan for their Lot and submit it to the Engineer for review and approval before commencement of construction activities. The Construction Logistics Plan shall address haulage routes for excavated material and construction materials; traffic management for public roads affected by construction traffic; TBM launch and reception shaft locations and associated surface works; and the programme and method for TBM retrieval.

Confidential

# 6. Site Information

### *1. Topographic Survey*

Within the scope of the Project, topographic survey studies have been undertaken along the proposed railway alignment with the objective of accurately identifying existing terrain conditions and surface characteristics. For this purpose, available topographic maps, satellite imagery, and digital elevation models (DEMs) have been obtained and integrated into a Geographic Information System (GIS) environment. In addition, relevant geological and geotechnical data, as well as existing infrastructure information obtained from competent authorities, have been compiled and assessed. Reference has also been made to available data and mapping derived from railway and large-scale transportation projects implemented in adjacent or comparable corridors, where deemed appropriate.

Based on the aforementioned data, the plan and profile design of the railway alignment has been developed using available maps at scales of 1:500 and 1:1000. The horizontal and vertical alignment geometry has been defined in accordance with applicable railway engineering standards and design criteria. The alignment design incorporates, inter alia, horizontal curves, transition curves (clothoids), turnout locations, station areas, and major structures, including bridges, culverts, and tunnels. The corresponding plan and profile drawings prepared under this scope are provided in Annex A (Drawings) and constitute the reference baseline for tenderers in assessing alignment geometry, structure locations, and terrain conditions.

The vertical profile includes the representation of existing ground levels, proposed design levels, cut and fill limits, gradients, and other critical engineering points. Due consideration has been given to operational safety requirements, passenger comfort, and freight transport performance. Furthermore, existing infrastructure elements along the alignment, including but not limited to roads, power transmission lines, and water-related structures, have been identified, assessed, and duly reflected in the plan and profile design.

The plan and profile drawings prepared under this scope have been developed to a level of detail considered sufficient for preliminary design purposes and have been supported by data obtained from surrounding projects. Notwithstanding the foregoing, such studies are of a preliminary nature and shall be subject to verification, refinement, and updating by the Contractor through additional site investigations, surveys, and detailed engineering activities during the subsequent stages of the Project.

Without prejudice to the foregoing, the Contractor shall, as a mandatory pre-design activity, carry out a comprehensive geodetic survey update of the relevant alignment sections, in accordance with the standards, accuracy requirements, and tolerances specified in Annex E (Design Services Technical Specification). The Contractor shall use the results of such updated surveys as the basis for verification and, where necessary, refinement of the alignment geometry and all associated design deliverables.

- ***Information obtained as a result of the ESIA studies.***

Based on the available information provided in the Environmental and Social Impact Assessment (ESIA) package, a comprehensive understanding of the Project's topographic context has been developed through desk-based studies, satellite imagery, and field observations undertaken during the ESIA process. Baseline topographic survey information presented in Section 4.1 (Determination of the Area of Influence) in ESIA document.

The Project alignment traverses diverse topographic and landscape units, including agricultural lands, forested areas, semi-urban zones, and industrial areas. Elevation, slope characteristics, and line-of-sight conditions vary along the corridor, influencing both engineering design choices and potential visual impacts. The use of tunnels, viaducts, and bridges reflects the need to accommodate complex terrain conditions, including the Bosporus crossing via the Yavuz Sultan Selim Bridge.

The broader project area is influenced by the region's complex geomorphology and climatic conditions. İstanbul's topography, combined with land–sea interactions and urban development patterns, contributes to localized microclimatic variations. Similarly, Kocaeli Province, located in the northwestern part of Türkiye, exhibits transitional climatic characteristics influenced by both the Black Sea and Mediterranean climates, with warm summers, mild winters, and relatively high annual precipitation. These conditions are closely linked to the area's topography and coastal proximity.

The ESIA baseline studies also present an assessment of existing landscape character and visual quality along the Project corridor, considering topography, land use, vegetation cover, landscape features, and scenic value, as well as the visual sensitivity of nearby receptors such as residents, road users, and recreational areas. This baseline understanding forms the basis for identifying and evaluating potential visual and landscape impacts during both construction and operation phases.

### *2. Environmental and Social Baseline Data*

Detailed information regarding the environmental and social baseline data is provided in Chapter 11 of the report and in the ESIA document.

### *3. Ground Investigation Data and Ground Condition Information*

All detailed information regarding geological and geotechnical aspects of ground investigation and ground conditions is provided in Annex C1 (Geological Data Report).

### *4. Utility Records*

The collection, verification, updating, modelling, and coordination of all existing underground and above-ground utility information, together with the necessary coordination with the relevant competent authorities, shall be the sole responsibility of the Contractor. The Employer shall bear no responsibility or liability whatsoever with respect to the completeness, accuracy, adequacy, or currency of such utility information.

The Contractor shall obtain all required utility data and related information from the relevant public authorities prior to and during the execution of the Works, in accordance with the

authorizations and access letters to be provided by the Employer. The Contractor shall, in addition, carry out all necessary site investigations, surveys, excavations, and verification works to confirm and validate existing conditions on site.

Consultation has been carried out with BOTAŞ, operating under the Ministry of Environment, Urbanization and Climate Change, regarding natural gas transmission pipelines and associated facilities located within or in the vicinity of the Project Area. In accordance with the official correspondence No. 44159 dated 19.11.2025, any construction, zoning or infrastructure works to be carried out within 200 meters of BOTAŞ pipelines and facilities are subject to prior approval by BOTAŞ and must comply with applicable technical safety criteria. A crossing protocol has been executed with BOTAŞ and governs all works intersecting natural gas transmission infrastructure.

Consultation has also been conducted with the State Hydraulic Works (DSİ), operating under the Ministry of Agriculture and Forestry. According to the official correspondence dated 29.12.2025 and numbered 6665849, issued by the DSİ's review covers interactions with DSİ facilities, surface waters, groundwater resources, flood control and drainage systems, and water supply infrastructure. Works that may affect these utilities shall be planned and implemented in coordination with DSİ and in accordance with relevant regulatory and technical requirements.

The utility information presented is indicative and based on available secondary data and official correspondence. The exact location, depth, condition and ownership of all utilities shall be verified by the Contractor prior to the commencement of construction works. The Contractor shall be responsible for liaising with relevant utility providers and authorities and for implementing appropriate measures to prevent damage to existing infrastructure and service disruptions.

All collected information shall be used for the preparation of integrated utility drawings, including the superposition of all existing underground and overground utility networks. Construction activities shall be based on such coordinated utility information. However, the provision of such data shall not in any way relieve the Contractor of its obligations and responsibilities under the Contract.

The Contractor shall be fully responsible for independently verifying all utility information, performing all required engineering checks, and ensuring full compatibility of such information with the design and construction works. The Contractor shall identify and assess all risks of interference with, conflict with, or damage to existing utilities, and shall design and implement all necessary protective, diversionary, and temporary engineering measures to avoid any disruption.

The protection of existing utilities and the uninterrupted continuity of their services shall be entirely the responsibility of the Contractor. Any damage to, or interruption of, existing utilities, or any resulting service disruption, shall be solely attributable to the Contractor, who shall bear full responsibility for all associated consequences, including repair, reinstatement, and mitigation measures.

Accordingly, all activities related to data collection, verification, modelling, coordination, and interface management shall be carried out under the sole responsibility of the Contractor and

shall constitute a fundamental requirement for the safe, continuous, and efficient execution of the Works. Any information or documentation provided by the Employer shall be for information purposes only, and the Contractor shall remain fully responsible for independently verifying and validating such information prior to its use for design and construction purposes.

### *5. Ground Water, Surface Water And Hydrological Information e.g.*

In accordance with the Flood and Sediment Control Regulation (Taşkın ve Rüsubat Kontrolü Yönetmeliği), approval of the State Hydraulic Works (DSİ) is required for railway construction works. In this context, the Contractor shall be solely responsible for the preparation and completion of all hydrological and hydraulic studies required for the obtaining of such approvals.

The Contractor shall carry out, inter alia, catchment area analyses, flood discharge and design discharge calculations, flow regime assessments, hydraulic design and sizing of structures, and the hydraulic design of culverts, bridges, and drainage systems. The Contractor shall further determine groundwater levels, assess variations in groundwater table levels, define diversion requirements, and undertake all other relevant hydrological and hydraulic engineering analyses.

The Contractor shall prepare all associated reports, calculations, and technical documentation required for submission to the relevant authorities.

All studies prepared by the Contractor shall be submitted to the competent authorities, and all necessary coordination shall be carried out by the Contractor. The Contractor shall obtain all required approvals from the relevant authorities, including DSİ. No permanent works design or construction activities shall commence prior to the completion and formal approval of the relevant hydrological and hydraulic studies.

All design, engineering, and construction activities shall be executed in accordance with the results of such analyses and the duly obtained official approvals. The Contractor shall take into account the effects of hydrological and hydraulic conditions on the Project, assess all associated risks, and incorporate all necessary protective and preventive measures into the design and implementation of the Works.

Any data or information provided by the Employer shall be for information purposes only, and the Employer shall bear no responsibility whatsoever for the accuracy, completeness, or adequacy of such data. The Contractor shall be fully responsible for independently verifying all hydrological and hydraulic data and for incorporating such verified data into the design basis of the Works.

The INRAIL Project is subject to a comprehensive set of orders, consents, permits, licenses, and compliance requirements arising from its scale, multi-year implementation period, and the complex environmental and social context of the project corridor. These requirements are defined through the ESIA, which constitutes the primary framework for identifying, assessing, and managing environmental and social risks in accordance with national legislation and the World

Bank Environmental and Social Framework. Compliance is operationalised through the ESMP and its associated sub-plans throughout construction and operation.

All structural design shall comply with the Turkish Seismic Code (Building 2018; Bridge and Buried Structures 2020). Seismic considerations constitute mandatory design and compliance requirements applicable across all Lots.

Excavation waste shall be managed in accordance with the Regulation on the Control of Excavation Soil, Construction and Demolition Waste (Official Gazette No. 25406, 2004). All transport and disposal activities shall be undertaken by licensed operators. The Contractor shall prepare and implement an Excavated Material and Waste Management Plan as part of its ESMP.

The Project alignment intersects or is in proximity to dams, reservoirs, streams, and floodplains. Compliance with the Water Basin Protection Regulation is required. All crossings and interventions affecting water bodies shall be coordinated with DSİ and other competent authorities.

As the Project is financed by the World Bank, adherence to ESS6 is required. A Critical Habitat Assessment has been undertaken to identify critical habitats, assess potential impacts, and guide the application of the mitigation hierarchy throughout the Project lifecycle.

### *6. As Built Records Of Existing Infrastructure*

The Contractor shall, within the framework of the authorization letters to be provided by the Employer, obtain all necessary permits from the relevant public authorities and institutions for the purpose of preparing as-built records, risk assessments, and condition analyses of existing structures, and shall collect all relevant data and documentation and carry out all required field investigations.

The Contractor shall collect all information relating to the location, dimensions, construction characteristics, and existing condition of existing structures, and shall carry out on-site inspections, measurements, and verification works where required. The Contractor shall evaluate all obtained data in a comprehensive manner, in order to determine the technical condition of such structures.

The Contractor shall be responsible for verifying the accuracy, adequacy, and currency of all data obtained. In the event of any missing, incomplete, or insufficient information, the Contractor shall carry out all additional investigations, inspections, and fieldworks required to complete the necessary information. All analyses and assessments prepared under this scope shall form an integral part of the design and construction works and shall be duly taken into account by the Contractor.

The Contractor shall assess the potential impact of the Project on existing structures, identify all associated risks, and design and implement all necessary engineering measures for their elimination or mitigation. The prevention of any damage to existing structures, the maintenance of continuity of services, and full compliance with all applicable legislation and standards shall be the sole responsibility of the Contractor.

Any data and documentation provided by the Employer shall be for information purposes only. The Employer shall bear no responsibility or liability for the accuracy, adequacy, or currency

of such information. The Contractor shall be fully responsible for independently verifying all such data and for ensuring its suitability for design and construction purposes.

As-built drawings represent the final recorded condition of constructed works and are typically prepared upon completion of construction activities. For existing structures, such records may not be available or may be incomplete, and shall be verified on site by the Contractor as part of the as-built record preparation process.

### *7. Any Other Physical Constraints*

Physical constraints affecting the Project area arise from a combination of land use characteristics, topography, subsurface conditions, existing infrastructure interfaces, sensitive receptors, protected and environmentally sensitive areas, and water-related features. Three constraints are of particular significance given their substantive impact on construction method, access, and working space: the Yavuz Sultan Selim (YSS) Bridge and Northern Marmara Highway concession corridor under Lot 3, where no structural modification to the bridge is anticipated and works are subject to the access, operational, and safety requirements of KGM and the Bridge Operator; the operational airside zones of Istanbul Airport, where the Lot 4 station is located within an underground structure already reserved for this purpose, and Sabiha Gökçen Airport under Lot 1, both imposing strict limitations on surface access, compound locations, and construction plant; and the Ömerli reservoir catchment traversed by the Lot 2 alignment, which restricts construction activities, compound placement, material storage, and water discharge within the catchment protection zone. These constraints collectively inform alignment selection, construction staging, access planning, and design decisions.

# 7. Design Requirements and Deliverables

## 1 General

This Chapter establishes the Contractor's design management obligations, design submission and review framework, design freeze milestones, third-party approval requirements, and BIM obligations under the Design and Build delivery model. It is to be read in conjunction with Annex E (Design Services Technical Specification), Annex O (BIM Technical Specification), and the interface management framework in Chapter 4. All detailed technical requirements governing design services — including design standards, report formats, geodetic survey requirements, and design submission content — are set out in Annex E, as applicable.

Climate projection studies constitute a set of strategies developed in response to potential extreme climate conditions. Utilizing the relevant projections during the project design phase strengthens projects in terms of climate resilience. Climate projections shall be evaluated over a period that reflects the full design life and operational lifespan of the infrastructure. Based on the outcomes of these studies, for hydraulic and flood-related assessments, the SSP2-4.5 scenario shall be adopted as the central design scenario for climate-sensitive design parameters. The SSP5-8.5 scenario shall be retained exclusively as a stress test verification scenario and shall not be applied universally to all design calculations. For assessments related to extreme heat, drought and wildfire, the design shall be based on the SSP5-8.5 scenario. The Contractor shall provide a clear justification for the selected uplift factors, as applicable, only for relevant climate-sensitive design parameters, including drainage systems, flood protection structures, slope stability, thermal expansion, and other climate-sensitive design elements.

The Contractor shall take the necessary measures to ensure climate resilience in relation to drought, extreme heat, and other relevant climate-related risks. The Contractor shall prepare a corridor-level screening study under the Climate Resilience Assessment (CRA) to identify sections of the alignment that may be vulnerable to projected long-term drying trends, reductions in groundwater recharge, and drought-related impacts associated with climate change. As part of the CRA, the Contractor shall also carry out a corridor-level wildfire exposure screening to identify open sections, tunnel portals, technical compounds, stations, depots, electrical installations, access roads, and other Project assets that may be exposed to wildfire risk. Where wildfire exposure is confirmed through the relevant risk assessment, the Contractor shall incorporate appropriate prevention, preparedness, vegetation management, emergency response, and asset protection measures into the detailed design and relevant management plans, within its design responsibility.

Where relevant risks are identified through the corridor-level screening and the CRA, the Contractor shall develop and implement appropriate mitigation or protective measures within its design responsibility. As part of the CRA and relevant geotechnical design obligations, the Contractor shall consider projected long-term drying trends and potential reductions in groundwater recharge, taking into account the findings and data gaps identified in the Geotechnical Design Report, where relevant.

The Contractor shall duly apply the 40°C threshold and the obligations of the Climate-Based Limited Operation System set out in the Design Technical Specifications where relevant to extreme heat conditions at the project site.

The Contractor shall prepare a Climate Resilience Management Plan (CRMP) for the Project, addressing the assessment and management of climate-related issues and risks within the Project

area, and the CRMP will be approved by the Engineer and the Employer, where necessary obtained no-objection by the World Bank. The CRMP shall be submitted prior to the commencement of the detailed design phase. The CRMP shall be developed in full alignment with the Contractor's Environmental and Social Management Plan (C-ESMP) and all relevant E&S sub-management plans. The Contractor shall also refer to Sections 1.13 and 1.17 of Annex E for further guidance on climate resilience considerations in the design

The Contractor bears full and exclusive responsibility for the adequacy, accuracy, completeness, constructability, fitness for purpose, and coordination of all design produced under the Contract. This liability extends to all permanent and temporary works design, across all disciplines and work packages, from the Preliminary Design stage through to As-Built documentation. The Contractor's obligations in relation to climate resilience requirements shall apply throughout the design, construction, testing, commissioning, and handover phases, as relevant. Neither review, comment, consent, nor acceptance by the Engineer or Employer shall relieve the Contractor of any design responsibility or liability under the Contract.

For any Section of any Contract (Lot), commencement of construction works within that Section shall be permitted once the Detailed Design has been approved by the Engineer and the PIOC has verified that the applicable Resettlement Plan (RP) has been implemented for that Section.

## 7.2 Design Management Obligations

### 7.2.1 Design Manager

The Contractor shall appoint a dedicated Design Manager with overall responsibility for the management, coordination, integration, and quality control of all design activities under the Contract. The Design Manager shall be a suitably qualified registered engineer with demonstrable experience in the design management of complex railway infrastructure projects of comparable scale and technical complexity, shall be permanently mobilised throughout the design phase, and shall have delegated authority to commit the Contractor on all design coordination and interface matters. The Design Manager shall serve as the primary point of contact with the Engineer on all design management matters and shall not be replaced without the Engineer's prior written consent.

### 7.2.2 Design Management System

No later than 28 days prior to the commencement of Design activities, the Contractor shall prepare and submit a Design Management System to the Engineer for review and consent. The Design Management System shall be maintained as a live document throughout the duration of the Contract and shall address, as a minimum:

- the organisational structure for design management, including lines of authority, responsibility, and communication between the Design Manager, discipline leads, sub-consultants, and the Engineer;
- design quality assurance and internal verification procedures, including independent checking protocols to be applied before any submission is made to the Engineer;
- design risk management procedures, including the identification, assessment, and mitigation of design risks, integrated with the Contract-wide risk register;

- design change management procedures, ensuring that all proposed changes to consented design are assessed for interface, programme, and cost implications before submission to the Engineer;
- document control procedures for all design submissions, revisions, and transmittals through the Common Data Environment; and
- procedures for coordinating design with adjacent Lot contractors, the Package 2 Signaling and Telecommunication contractor, and relevant third-party authorities and asset owners in accordance with Chapter 4.

The Design Management System constitutes the single contractual vehicle through which the Contractor discharges all design management, quality assurance, and design programme obligations under the Contract, including the Quality Assurance Manual and Design Management Plan obligations set out in Annex D (General Technical Specification). No separate Quality Assurance Manual or Design Management Plan shall be required as standalone submissions. The Design Management System shall additionally address the following content requirements of Annex D: the Quality Assurance Organisation Chart; job definitions and the number and availability of Quality Control personnel; the list of applicable design codes, regulations and standards; the design responsibility matrix; schedules of drawings to be produced by each discipline and specialist; the design programme including key dates for reviews and information exchanges; and initiating procedures for design changes.

### 7.2.3 Design Coordination

The Contractor shall ensure full integration and coordination of design across all disciplines and work packages throughout the duration of the Contract. The Contractor shall actively manage all design interfaces with adjacent Lot contractors and the Package 2 Signaling and Telecommunication contractor through the Interface Management Plan required under Chapter 4, Section 4.2. No construction activity shall commence before the design upon which it depends has been consented by the Engineer, and the Contractor shall ensure that this sequential dependency is explicitly reflected in the Construction Programme at all times.

## 7.3 Design Submission Schedule and Design Register

Within 28 days from the Commencement Date, the Contractor shall prepare and submit a Design Submission Schedule and Design Register to the Engineer for review and consent. This document shall be maintained as a live contractual record throughout the duration of the Contract and updated monthly as part of the Monthly Progress Report. Any revision to a previously consented submission date shall be highlighted and explained in the accompanying transmittal; revisions affecting the critical path or a Design Freeze Milestone shall require the Engineer's prior written consent.

The Design Submission Schedule and Design Register shall:

- identify all design deliverables required under the Contract, categorised by discipline, system, and design stage — Preliminary Design, Detailed Design, Construction-ready, and As-Built;

- include a requirement for the Contractor to prepare standard climate resilience documentation as part of each relevant design submission, either confirming how climate risks have been addressed or, where climate risks are not relevant to the specific submission, providing a reasoned justification for non-applicability. Such documentation shall confirm, as applicable, that the relevant climate resilience requirements have been considered and duly addressed for the design submission concerned. Where non-applicability is justified, the Contractor may proceed to the subsequent stages of the Project only subject to the acceptance of such justification by the Employer and, subsequently, by the World Bank;
- assign a unique document reference to each deliverable and state the planned submission date, review period, resubmission allowance, consent date, and construction release date;
- identify all interdependencies and sequencing constraints between deliverables across disciplines and design stages, and cross-reference each deliverable to the relevant activities in the Construction Programme;
- indicate that the Climate Resilience Management Plan (CRMP) shall be listed together with the BIM Execution Plan and the Design Management System documentation. The CRMP document shall be submitted at the outset of detailed design and prior to the approval of the relevant detailed design packages. The CRMP shall be cross-referenced, where relevant, with the C-ESMP and applicable environmental and social sub-management plans to ensure consistency between climate resilience requirements and project environmental and social management obligations;
- include the Climate Resilience Assessment (CRA) document. The CRA document shall be prepared and submitted as part of the Design Submission Schedule, subject to the approval of the Engineer and the Employer, and the World Bank shall retain the right to issue a "no-objection" during the document completion process. The CRA shall be submitted and approved prior to the approval of the relevant detailed design packages.;
- identify all deliverables subject to third-party statutory approvals, with realistic durations for those approval processes incorporated into the planned dates; and
- identify all Design Freeze Milestones required under Section 7.5, with submission dates aligned to ensure that design freeze is achieved in accordance with the interface target date schedule in Chapter 4, Section 4.4.2.
- The Detailed Design Submission Schedule shall specifically identify the twelve (12) month alignment freeze milestone required under Section 7.5 of the Employer's Requirements, with submission dates demonstrating that the relevant design deliverables will be available in sufficient time to enable the Employer to initiate the Resettlement Action Plan and land expropriation processes.

### 7.4 Design Review Periods and Engineer's Consent

All design deliverables shall be submitted to the Engineer through the Common Data Environment in accordance with the approved Design Submission Schedule. The review and resubmission periods applicable to each submission type are as set out in the table below.

| Submission Type | Review Period | Resubmission Period |
|---|---|---|
| **Standard design submissions** | 14 calendar days | 7 calendar days |

| | | |
|---|---|---|
| **Major structural submissions** | 21 calendar days | 10 calendar days |
| **Geotechnical submissions** | 21 calendar days | 10 calendar days |
| **Temporary works submissions** | 14 calendar days | 7 calendar days |
| **Submissions requiring third-party statutory approval** | 21 calendar days | 10 calendar days |
| **Construction-ready submissions** | 7 calendar days | 5 calendar days |

The review period commences only upon receipt by the Engineer of a complete submission that complies fully with the format, content, and quality requirements specified in the Contract. Incomplete or non-compliant submissions shall be returned without review and shall be deemed not submitted for the purposes of the Contract and the Design Submission Schedule.

Where a submission requires third-party statutory approval, the Engineer's review period runs concurrently with, and not consecutively to, the third-party approval process. The Engineer's consent to a submission does not constitute, substitute for, or waive any third-party statutory approval required under Section 7.6. No part of the Works shall proceed to construction unless the relevant design deliverables have received the required review status and all applicable third-party approvals have been formally obtained.

### 7.5 Design Freeze Milestones

The Contractor shall establish and achieve Design Freeze Milestones for all major design packages in accordance with the interface target date schedule in Chapter 4, Section 4.4.2. Design Freeze Milestones shall be incorporated into the Contractor's Construction Programme as Employer's Milestones and agreed with the Engineer and the Interface Managers of adjacent Lot contractors within 60 days of contract award. Design Freeze Milestones shall be coordinated with and shall not conflict with the Milestones defined in Sub-Clause 1.1.95 of the Particular Conditions of Contract and the Contract Data.

A Design Freeze Milestone marks the point beyond which no further change to the frozen design elements shall be implemented without the Engineer's prior written consent. Any proposed post-freeze design change affecting interfaces with adjacent Lots or with the Package 2 Signaling and Telecommunication contractor shall be notified to the Engineer and to the relevant Interface Managers before implementation and shall not proceed without the Engineer's written consent. Mandatory Design Freeze Milestones include, as a minimum:

- Overall horizontal and vertical alignment and footprint of all major underground and crossing infrastructure — to be frozen no later than twelve (12) months from the Commencement Date, to enable the Employer to initiate the Resettlement Action Plan and land expropriation processes
- TBM tunnel civil design — prior to TBM procurement or commencement of segment production;
- NATM tunnel cross-sections and support classes — prior to commencement of NATM excavation on each section;

- major bridges and viaducts — prior to commencement of foundation works for each structure;
- YSS Bridge interface and integration works (Lot 3) — prior to commencement of any works on or affecting the YSS Bridge;
- underground station structures — prior to commencement of excavation works on the station box;
- track alignment and slab track design — prior to commencement of track formation works on each section;
- civil provisions for the Package 2 Signaling and Telecommunication contractor — prior to construction of any element incorporating those provisions; and
- Lot boundary interface works — at least 60 days prior to the agreed Lot boundary handover milestone.

### 7.6 Third-Party Approval Obligations

The Contractor is fully responsible for identifying, pursuing, and obtaining all approvals, permits, consents, no-objection certificates, and authorisations required from third-party statutory authorities and asset owners in connection with the Works. This responsibility applies regardless of whether the relevant authority is identified in this Chapter; the Contractor shall independently determine all applicable approval requirements at the outset of design and shall not rely on the Engineer or Employer to identify outstanding approvals.

All third-party approval activities and their durations shall be incorporated into the Design Submission Schedule and Construction Programme from the outset of design. Third-party approval obligations include, but are not limited to, approvals from the following authorities where the Works fall within their respective jurisdictions:

- DSİ (Devlet Su İşleri) — for all works affecting water bodies, drainage basins, flood protection structures, watercourses, and hydraulic infrastructure, including hydraulic engineering reports and flood risk assessments for all relevant structures;
- TEİAŞ (Türkiye Elektrik İletim A.Ş.) — for traction power supply connections, grid connection agreements, protection coordination studies, and works in proximity to high-voltage transmission assets;
- KGM (Karayolları Genel Müdürlüğü) and the YSS Bridge Operator — for all design proposals and works on or affecting the Yavuz Sultan Selim Bridge and the North Marmara Motorway corridor, neither of which may be finalised without the written confirmation of both parties;
- DHMİ and airport operators — for works within or adjacent to Istanbul Airport (IST) and Sabiha Gökçen Airport (SAW), including any works within obstacle limitation surfaces or airport operational areas;
- TCDD — for all works affecting the operational TCDD network at the Çayırova and Çatalca connection points, in accordance with applicable rail safety and operational requirements;
- İBB (İstanbul Büyükşehir Belediyesi) — for municipal permits, road and traffic management approvals, and works within the metropolitan area; and

- defence and security asset owners — for works in proximity to military installations or assets designated under applicable national and NATO frameworks.

The Engineer's review and consent does not constitute, substitute for, or waive any third-party statutory approval. Design Freeze for any element subject to a mandatory third-party approval shall not be achieved until that approval has been formally received in writing.

### 7.7 BIM Obligations at Design Stage

The Contractor shall implement Building Information Modelling throughout the design and construction phases in accordance with Chapter 8 (Building Information Modelling Requirements) and Annex O (BIM Technical Specification). The full BIM framework — including Common Data Environment governance, 4D BIM, clash detection obligations, and As-Built model handover to TCDD — is set out in Chapter 8 and Annex O. The following obligations apply specifically at design stage and are set out here for contractual clarity.

The BIM Execution Plan (BEP) is a mandatory design-stage deliverable. The Contractor shall submit the BEP to the Engineer for review and consent within 28 days of contract award. The BEP shall be approved before the commencement of any Detailed Design activities and shall remain a live document throughout the duration of the Contract. The BEP shall define, as a minimum, the BIM organisational structure, software platforms and file formats, LOD and LOIN requirements by design stage and discipline in accordance with Annex O, the clash detection and coordination workflow, the 4D BIM methodology, and the As-Built model delivery strategy.

ISO 19650 is the applicable information management standard for this Contract. All BIM deliverables shall be managed through the Common Data Environment in accordance with ISO 19650 information status workflows. All design submissions to the Engineer shall be accompanied by the corresponding BIM model meeting the minimum LOD and LOIN requirements for the relevant design stage as specified in Annex O. Submissions not meeting the minimum requirements shall be returned as non-compliant and shall be deemed not submitted.

### 7.8 As-Built Documentation

The Contractor shall progressively prepare and submit As-Built documentation for all permanent works as each section is completed, and shall not defer As-Built preparation to the end of the construction period. As-Built documentation shall include: As-Built drawings produced directly from the as-built BIM model in accordance with Annex O; updated design calculations and reports reflecting the Works as constructed; records of all deviations from the consented design with the Engineer's endorsement; geotechnical and survey records including final alignment verification surveys; materials test reports, inspection records, and quality certificates; and Operation and Maintenance information in the format required for handover to TCDD.

The Engineer will not recommend issue of the Taking-Over Certificate for any Lot until the corresponding As-Built documentation has been submitted, accepted, and verified as consistent with the certified configuration in accordance with Chapter 9 (System Integration, RAMS and Safety). Prior to recommending Taking-Over, the Engineer shall confirm that the As-Built BIM model, the asset information delivered through the Common Data Environment, and all associated technical files are consistent with the findings and conclusions of the NoBo and AsBo.

Confidential

# 8 Building Information Modelling Requirements (New dedicated section)

## 8.1 General

The Contractor shall deliver the Works using Building Information Modelling throughout the design and construction phases and shall produce and hand over an As-Built information model as a mandatory deliverable at Taking-Over. Building Information Modelling shall be used as the primary platform for design coordination, clash detection, interface management between Lots and with the Package 2 Signaling and Telecommunication contractor, construction sequencing, and asset information management. Building Information Modelling requirements shall be read in conjunction with Annex E (Design Services Technical Specification), which sets out the detailed technical standards and Level of Information Need applicable to each design stage and discipline.

## 8.2 Building Information Modelling Execution Plan

Within 28 days of contract award, the Contractor shall prepare and submit a Building Information Modelling Execution Plan to the Engineer for review and consent. The Building Information Modelling Execution Plan shall remain a live document throughout the Contract and shall be updated to reflect changes in scope, delivery team, or technology. The Building Information Modelling Execution Plan shall address, as a minimum:

- The Contractor's Building Information Modelling organizational structure, including the designation of a Building Information Modelling Manager with sufficient authority and competence to lead Building Information Modelling delivery across all disciplines and subcontractors;
- The software platforms and file formats to be used, which shall be compatible with the Common Data Environment established under Section 4.9.3 and with the software used by the Engineer and the Construction Supervision Consultant;
- The Level of Information Need to be achieved at each design stage — Preliminary Design, Detailed Design, Construction, and As-Built — in accordance with Annex E;
- The BIM milestones to be achieved at each design stage, including the BEP (Building Information Modelling Execution Plan) submission, federated model development milestones, and the As-Built model handover, all of which shall constitute Employer's Milestones under the Contract and shall be incorporated into the Construction Programme accordingly;
- The Building Information Modelling coordination and clash detection workflow, including the frequency of federated model reviews, the process for logging and resolving clashes, and the escalation pathway for unresolved clashes to the Engineer;
- The process for coordinating the Contractor's Building Information Modelling model with those of adjacent Lot contractors and with the Package 2 Signaling and Telecommunication contractor, through the Common Data Environment;

Confidential

- The 4D Building Information Modelling methodology, setting out how the programme required under Section 4.7 will be linked to the Building Information Modelling model and used for construction sequencing, progress monitoring, and reporting; and
- The As-Built model delivery strategy, including the process for updating the model during construction, the format and content of the final handover model, and the asset information requirements to be met for handover to TCDD.

### 8.3 Common Data Environment

The Contractor shall establish and maintain a Common Data Environment as the single platform for the management, sharing, and control of all project information, including Building Information Modelling models, drawings, specifications, interface control documents, and correspondence. The Common Data Environment shall be accessible to the Engineer (Construction Supervision Consultant), AYGM, the Project Management Consultant, the Project Implementation Oversight Consultant, adjacent Lot contractors, and the Package 2 Signaling and Telecommunication contractor, with access rights defined in the Building Information Modelling Execution Plan. The Common Data Environment shall operate in accordance with a defined information management protocol, including version control, approval status codes, and audit trail requirements.

### 8.4 Design Coordination and Clash Detection

The Contractor shall use the federated Building Information Modelling model as the primary tool for identifying and resolving design clashes between disciplines, between Lots, and between civil infrastructure and Signaling and Telecommunication provisions. Formal clash detection reviews shall be carried out at the following minimum frequencies:

- Weekly during the detailed design phase for each discipline and at Lot boundaries; and
- Monthly during the construction phase, or more frequently as directed by the Engineer, to identify conflicts between as-built conditions and outstanding design or installation works.

A clash detection report shall be produced after each review, uploaded to the Common Data Environment, and submitted to the Engineer. All clashes classified as critical or major shall be resolved within the timescale agreed with the Engineer and shall not be closed out without the Engineer's written confirmation. Unresolved clashes that affect an interface with an adjacent Lot or with the Signaling and Telecommunication contractor shall be escalated to the Engineer immediately and treated as interface issues under Section 4.2.

### 8.5. 4D Building Information Modelling

The Contractor shall develop and maintain a 4D Building Information Modelling model — that is, a Building Information Modelling model linked to the Level 4 programme required under Section 4.9.2 — from the commencement of detailed design through to Taking-Over. The 4D model shall explicitly reflect the four Milestones defined in Sub-Clause 1.1.95 of the Particular Conditions of Contract and the Contract Data, and shall demonstrate the logical relationship between the construction sequence and the achievement of each Milestone. The 4D model shall be used to:

validate the construction sequence and identify programme conflicts before they arise on site; support progress monitoring and reporting by comparing planned and actual construction status; and coordinate construction sequencing at Lot boundaries and at civil-to-Signaling and Telecommunication interface points. The 4D model shall be updated monthly in line with the programme update required under Section 4.8.2 and submitted to the Engineer as part of the monthly progress report.

### 8.6. As-Built Model and Handover to TCDD

The Contractor shall progressively update the Building Information Modelling model throughout construction to reflect the as-built condition of the Works. The As-Built model shall be completed and submitted to the Engineer for review and consent no later than 60 days prior to the anticipated Taking-Over date for each Lot. The As-Built model shall meet the Level of Information Need specified in Annex E for the As-Built stage and shall include all asset information required by TCDD for the operation and maintenance of the completed railway infrastructure. The As-Built model, together with all associated asset information in the Common Data Environment, shall be formally transferred to TCDD at Taking-Over as a mandatory condition of the Taking-Over Certificate. The Engineer will not recommend issue of the Taking-Over Certificate for any Lot until the As-Built model has been accepted.

Confidential

# 9. System Integration, RAMS and Safety

## 9.1 General

This Chapter establishes the Contractor's obligations in respect of RAMS management, fire life safety design, and seismic safety under the Design and Build delivery model. Given the complexity of INRAIL — four Design and Build lots, extensive TBM and NATM tunnelling, two underground airport stations operating within live airport environments, and a high-seismicity corridor — these obligations shall be embedded in the design programme as continuous activities and shall not be deferred to the testing and commissioning phase.

This Chapter is to be read in conjunction with Annex N (Safety and RAMS Technical Specification), Annex K (Tunnel Electromechanical Works Technical Specification), Annex I (Station Electromechanical Systems Technical Specification), and Annex F (Civil Works (Infrastructure) Technical Specification). The NoBo, AsBo, and ISA (Independent Safety Assessor) engagement framework is established in Chapter 2 of these Employer's Requirements; this Chapter defines the corresponding programme milestones and deliverable gates applicable throughout design and construction.

## 9.2 RAMS Management

### 9.2.1 RAMS Management Plan

Prior to the commencement of Preliminary Design activities, the Contractor shall prepare and submit a RAMS Management Plan to the Engineer for review and consent. The RAMS Management Plan shall be fully integrated with the Design Management System required under Chapter 7 and with the Construction Programme, such that RAMS activities and gate milestones form an embedded and sequenced component of the overall project delivery programme.

The RAMS Management Plan shall comply with EN 50126 (Railway Applications — Specification and Demonstration of Reliability, Availability, Maintainability and Safety) as the governing standard. Where software-based systems are within scope, EN 50128 and EN 50129 shall additionally apply. The CSM-RA process under Commission Implementing Regulation (EU) No 402/2013 shall be embedded as a continuous design activity. The RAMS Management Plan shall address, as a minimum:

- the RAMS organisational structure, including the designation of a RAMS Manager with sufficient authority across all disciplines and sub-contractors;
- the RAMS programme mapped to the design stages and construction milestones in the Contract, including all hazard analysis deliverables and ISA review gates;
- the methodology for reliability prediction, availability analysis, and Failure Mode Effects and Criticality Analysis (FMECA) for each subsystem, using Technical Availability calculated as TA = MTBF / (MTBF + MTTR), Reliability Block Diagrams (RBD), and Fault Tree Analysis (FTA) as applicable;
- fail-operational design requirements, ensuring no single point of failure can cause a loss of safety-critical function, with redundant or hot-standby configurations and a defined Line Replaceable Unit (LRU) strategy for critical subsystems; and

- the interface between the RAMS process and the NoBo, AsBo, and ISA, including documentation to be shared with each body and the corresponding timescales.

The RAMS Management Plan shall include a RAMS targets table setting out the minimum Reliability, Availability, Maintainability and Safety targets for each principal subsystem, including as a minimum: traction power, overhead contact system, track, tunnel ventilation, fire detection and suppression, signalling, telecommunications, platform screen doors, and rolling stock interfaces. The RAMS targets table shall form part of the Taking-Over criteria for each Lot

### 9.2.2 Hazard Analysis Programme

The Contractor shall produce and submit the following mandatory hazard analysis deliverables to the Engineer and the ISA:

- Preliminary Hazard Analysis (PHA) — submitted at the completion of the Preliminary Design stage. The Engineer shall not issue design consent at Preliminary Design stage until the ISA has accepted the PHA as complete and adequate. The PHA shall identify all foreseeable hazards at system level, assign risk ratings in accordance with the severity and frequency classification defined in Annex N, and propose mitigation measures to be incorporated into the Detailed Design.
- System Hazard Analysis (SHA) — submitted at the completion of the Detailed Design stage. The Engineer shall not issue design consent at Detailed Design stage until the ISA has accepted the SHA as complete and adequate. The SHA shall demonstrate that all hazards identified in the PHA have been mitigated to an acceptable risk level and shall identify residual hazards to be managed through operational or maintenance measures.

The ISA's acceptance of the PHA and the SHA are hard gate conditions for the issue of the Engineer's design consent at each respective stage. The Contractor shall incorporate ISA review periods into the Design Submission Schedule required under Chapter 7.

### 9.2.3 Independent Safety Assessor (ISA)

The Contractor shall engage an Independent Safety Assessor in accordance with the obligations set out in Chapter 2, prior to the commencement of the PHA. The ISA shall issue a Safety Assessment Report as a mandatory deliverable prior to the commencement of Trial Operations. The ISA Safety Assessment Report is a condition precedent to the Engineer's recommendation to commence Trial Operations, and its findings shall be incorporated into the documentation submitted to the NoBo and AsBo.

### 9.2.4 NoBo and AsBo Engagement

The Contractor shall propose a Notified Body (NoBo) for the Engineer's review and consent within 56 days of the Commencement Date. The NoBo shall be engaged and contracted before the completion of Preliminary Design. The Contractor shall engage an Assessment Body (AsBo) on the same timescale. The Engineer will not recommend issue of the Taking-Over Certificate for any Lot until the EC Certificate of Verification from the NoBo and the national compliance certificate from the AsBo have both been received, and the ISA Safety Assessment Report has been accepted. The NoBo's final assessment report shall be submitted to the Engineer no later than 30 days before the anticipated Taking-Over date for the relevant Lot.

## 9.3 Fire Life Safety

### 9.3.1 Governing Standard and Design Basis

NFPA 130 (Standard for Fixed Guideway Transit and Passenger Rail Systems) is the governing fire life safety standard for this Contract, supplemented by NFPA 92 and NFPA 204 for smoke control design in station environments, and by the Turkish Regulation on Fire Protection of Buildings (BYKHY) where its provisions are more stringent. Where a conflict exists between NFPA 130 and BYKHY, the more stringent requirement shall apply. All fire life safety design shall comply with Annex K and Annex I.

The 4-minute station evacuation criterion — defined as the time required to evacuate all passengers from the most adverse platform location to a point of safety beyond the station environment — is an absolute design requirement for all underground stations. Compliance shall be demonstrated through mandatory evacuation modelling submitted as a Detailed Design deliverable and consented by the Engineer before the station fire and life safety design is finalised. The design fire for tunnel sections shall be based on a minimum heat release rate of 10 MW with a convective heat fraction of 0.8. Station smoke control design shall be based on a minimum 1 MW luggage fire load.

### 9.3.2 Tunnel Ventilation and CFD Modelling

The Contractor shall design the tunnel ventilation system to control smoke and temperature in all foreseeable emergency scenarios, ensuring safe evacuation conditions for passengers and access conditions for emergency responders throughout the evacuation period. During normal operation, tunnel ventilation shall be provided by the piston effect of trains; during emergency conditions, forced ventilation shall be provided in accordance with Annex K.

A Computational Fluid Dynamics (CFD) analysis shall be carried out for each tunnel section and underground station as a mandatory Detailed Design deliverable, in full compliance with NFPA 130. The CFD analysis shall demonstrate that suitable environmental conditions are maintained on all evacuation routes throughout the evacuation period, evaluated over a minimum simulation duration of 20 minutes covering both evacuation conditions and fire brigade intervention conditions. Maximum air velocity along all evacuation routes shall not exceed 11 m/s. CFD results shall be submitted to the Engineer for review and consent before tunnel boring commences on any section to which the analysis relates.

### 9.3.3 Fire Detection, Suppression, and SCADA Integration

The Contractor shall design, supply, install, and commission fire detection and suppression systems throughout all tunnel structures and underground stations in accordance with Annex K and Annex I. All fire detection and suppression systems shall be fully integrated with the SCADA systems such that a fire event triggers automatic activation of the applicable ventilation mode and initiates the defined emergency response sequence without manual intervention. The Contractor shall demonstrate this integration through factory acceptance testing and site acceptance testing before commissioning. Fire detection, suppression, and SCADA integration design shall be submitted as a single coordinated package at Detailed Design stage.

Confidential

### 9.3.4 Emergency Egress and Cross-Passage Requirements

For all twin-bore TBM tunnels, cross-passages connecting the two running bores shall be provided at a maximum spacing of 250 metres, measured along the track alignment, in accordance with NFPA 130. Cross-passage spacing, dimensions, and fire door specifications shall be confirmed through the Contractor's detailed design and consented by the Engineer before tunnel boring commences on the relevant section, in accordance with Section 5.9.2 of these Employer's Requirements.

All emergency egress routes — including cross-passages, escape tunnels, station emergency exits, and stairwells — shall remain smoke-free and accessible throughout the evacuation period and shall comply with the pressurisation and smoke control requirements of NFPA 130 and BYKHY. Emergency lighting, wayfinding, and communication systems shall be designed as integral components of the egress system.

### 9.3.5 Airport Station Fire Safety Coordination

For Sabiha Gökçen Airport Station (Lot 1) and Istanbul Airport Station (Lot 4), the Contractor shall coordinate the station fire safety design — including emergency evacuation routes, smoke control modes, and emergency access arrangements — with the relevant airport authority throughout the Detailed Design stage. For Lot 1, the relevant authority is TAV Airports; for Lot 4, İGA Istanbul Airport Operations.

The station fire safety design shall not be finalised without written confirmation from the relevant airport authority that the proposed evacuation arrangements are compatible with the airport's emergency response procedures. This written confirmation shall be submitted to the Engineer as a prerequisite for the Engineer's consent to the station fire safety design package. Any conflict between NFPA 130 requirements and airport authority requirements shall be reported to the Engineer immediately and shall not be resolved unilaterally by the Contractor.

## 9.4 Seismic Safety

The INRAIL alignment traverses a seismically active region. The Contractor shall treat seismic design as a foreseeable risk across all Lots and shall carry out site-specific seismic hazard assessments and soil classifications as part of the design investigation programme. All seismic design shall comply with the Turkish Seismic Code (Building 2018; Bridge and Buried Structures 2020) and the structural design requirements set out in Annex F. Seismic design parameters — including Peak Ground Acceleration (PGA) values for the relevant return periods — shall be determined from site-specific assessment and shall not be assumed from regional maps without site-specific verification.

Emergency systems — including tunnel ventilation, fire detection and suppression, emergency lighting, and evacuation systems — shall be designed and installed with seismic restraint measures sufficient to ensure that these systems remain operational following a seismic event corresponding to the design earthquake for the relevant site classification. Compliance shall be demonstrated through the seismic qualification documentation required under Annex F and through the RAMS Management Plan.

Confidential

Detailed structural and geotechnical design requirements governing seismic performance are set out in Chapter 5, Annex E and Annex F, which shall be read in conjunction with this Section.

### 9.4.1 YSS Bridge Seismic Compatibility (Lot 3)

For Lot 3, the Contractor shall carry out a seismic compatibility analysis for all railway integration works on the Yavuz Sultan Selim Bridge. This analysis shall demonstrate that the railway integration design — including track structure, electrification fixings, and all structural connections to the bridge deck — is compatible with the seismic design basis of the existing bridge. The seismic compatibility analysis shall be submitted to the Engineer and to KGM and the Bridge Operator as part of the Detailed Design package for the YSS Bridge. No structural connections to the YSS Bridge shall be finalised without the Engineer's consent and the written confirmation of both KGM and the Bridge Operator that the seismic compatibility analysis is acceptable.

Confidential

# 10. Testing, Commissioning and Trial Operations

## 10.1. General

### 10.1.1 Scope

This Section defines the minimum requirements for the planning, execution, management, monitoring, documentation, witnessing, acceptance and completion of all Testing, Commissioning and Trial Operations activities associated with the Works.

The requirements specified herein shall apply to every permanent and temporary system forming part of the Project, irrespective of whether the relevant equipment is supplied directly by the Contractor or by Subcontractors or Suppliers.

The Contractor shall be fully responsible for planning, coordinating, executing, supervising and documenting all Testing and Commissioning activities necessary to demonstrate that every element of the Works complies with:

- the Employer's Requirements;
- the Technical Specifications (Annex P and other);
- the Approved Design Documentation;
- the Contract;
- applicable European Union legislation;
- applicable National Regulations;
- Technical Specifications for Interoperability (TSIs);
- applicable European Standards (EN);
- International Electrotechnical Commission (IEC) Standards;
- International Organization for Standardization (ISO) Standards;
- applicable NFPA Standards where specified;
- the requirements of the Independent Safety Assessor (ISA); and
- all other statutory requirements applicable to the Project.

Testing and Commissioning shall demonstrate not only the satisfactory performance of individual items of equipment, but also the safe, reliable and integrated operation of the complete railway system under all normal, degraded, emergency and recovery operating conditions.

The Contractor shall plan and execute all Testing and Commissioning activities in a logical sequence progressing from individual component verification through subsystem testing, integrated system testing, trial running and trial operations, culminating in Final Acceptance.

No portion of the Works shall be deemed complete solely because installation has been completed. Completion shall only be achieved following successful demonstration that all contractual, functional, operational, safety, performance, reliability, maintainability and interoperability requirements have been fully satisfied.

The Contractor shall include within the Contract Price all labour, supervision, engineering, management, specialist personnel, manufacturers' representatives, temporary works, software, licences, calibration, instrumentation, temporary facilities, utilities, consumables, spare parts, replacement materials, temporary modifications, transportation, logistics, permits, insurances and any other resources required to successfully complete all Testing, Commissioning and Trial Operations.

No additional payment shall be made for any Testing or Commissioning activity reasonably required to demonstrate compliance with the Contract, irrespective of whether such activity is explicitly identified within this Section.
Testing and Commissioning activities shall include all interfaces between systems supplied under this Contract and systems supplied under other contracts, existing railway infrastructure, utility providers, third-party systems and operational organizations.
The Contractor shall coordinate all Testing and Commissioning interfaces with other Contractors, utility providers, railway operators, infrastructure managers, public authorities and the Employer.
Testing and Commissioning shall continue until the Employer is satisfied that the complete railway system is capable of entering passenger service safely, reliably and in full compliance with all contractual obligations.
Successful completion of Testing and Commissioning shall not relieve the Contractor from any responsibility for defects, latent defects, design deficiencies or failures occurring during the Defects Notification Period.
All activities described within this Section shall be read in conjunction with the Project Testing and Commissioning Technical Specifications, System Technical Specifications, RAMS Requirements, Safety Requirements, Interface Requirements and Operation & Maintenance Requirements. Where any discrepancy exists, the more onerous requirement shall apply unless otherwise instructed by the Employer.
The Project will be executed in four phases by different construction contractors. Except for the Signalling and Telecommunications System, all costs associated with the testing and commissioning of systems covered by the Testing and Commissioning Technical Specification, as well as any additional testing and commissioning activities required by the Administration and the Engineer, shall be borne by the Contractor responsible for the respective phase.
As the Signalling and Telecommunications System will be tested, commissioned, and placed into operation as an integrated system across all four phases, all associated testing and commissioning costs shall be borne by the Signalling and Telecommunications Subcontractor.

### 10.1.2 Objectives

The objectives of the Testing, Commissioning and Trial Operations activities are to systematically verify, validate and demonstrate that the Works, including all individual systems, subsystems and integrated railway functions, have been designed, manufactured, installed, configured, tested and commissioned in full compliance with the Contract requirements and are capable of safe, reliable and efficient operation throughout their intended service life.
Testing and Commissioning shall provide objective evidence that the completed Works satisfy all specified functional, operational, technical, safety, environmental, performance, maintainability, reliability and interoperability requirements prior to their acceptance by the Employer and commencement of passenger service.
Without limitation, the objectives of the Testing, Commissioning and Trial Operations shall include the following:
**a)** To verify that every item of equipment has been correctly manufactured, delivered, installed, identified, protected and commissioned in accordance with the Approved Design Documentation, manufacturer's recommendations, applicable Technical Specifications and the Contract.
**b)** To demonstrate that all electrical, mechanical, civil, structural and software-based systems perform their intended functions safely, efficiently and continuously under all specified operating conditions.

Confidential

**c)** To verify that all hardware, software, firmware, communication networks, programmable electronic systems and digital applications have been correctly configured, integrated and validated.
**d)** To demonstrate that all interfaces between systems supplied under this Contract, systems supplied under other contracts, existing railway infrastructure, utility providers and third-party organisations operate correctly without degradation of functionality, safety or performance.
**e)** To verify that the complete railway system complies with all applicable Technical Specifications for Interoperability (TSIs), European Standards (EN), International Standards (IEC and ISO), applicable National Regulations and all statutory requirements governing railway operation.
**f)** To demonstrate compliance with the Project RAMS requirements, including Reliability, Availability, Maintainability and Safety objectives established for the Project.
**g)** To demonstrate that all fail-safe principles, redundancy arrangements, protection systems and emergency operating modes perform as intended under normal, degraded, abnormal and emergency operating conditions.
**h)** To confirm that all safety-related systems achieve the required Safety Integrity Levels (SIL), Safety Integrity Requirements and Safety Case obligations where specified by the Contract.
**i)** To demonstrate that all operational scenarios, degraded operating modes, emergency procedures, recovery procedures and contingency arrangements function correctly and safely.
**j)** To verify that all automatic and manual operational sequences perform correctly under simulated and actual operating conditions.
**k)** To demonstrate the satisfactory operation of all communications between signalling, telecommunications, SCADA, traction power, station systems, depot systems, tunnel systems, rolling stock interfaces and other operational systems.
**l)** To verify the correct operation of all supervisory, monitoring, control, alarm and event recording functions.
**m)** To verify that all data acquisition, historical logging, cyber security measures, time synchronisation and remote-control functions perform in accordance with the Contract requirements.
**n)** To demonstrate that all operational and maintenance personnel have received adequate training and are capable of safely operating and maintaining the completed Works.
**o)** To confirm that all Operation and Maintenance Manuals, maintenance procedures, spare parts lists, software documentation, configuration records, asset registers and as-built documentation accurately reflect the completed installation.
**p)** To demonstrate that all environmental performance requirements, including energy efficiency, noise, vibration, air quality, water consumption and emissions, comply with the applicable contractual and statutory requirements.
**q)** To verify that all fire detection, fire alarm, smoke control, fire suppression, emergency lighting, evacuation, emergency communications and life safety systems operate correctly both individually and as part of the integrated railway safety strategy.
**r)** To demonstrate that all electrical power systems, including High Voltage (HV), Medium Voltage (MV), Low Voltage (LV), Traction Power Supply Systems (TPSS), Overhead Contact Systems (OCS), earthing and bonding systems, standby generators, UPS installations and associated protection systems operate safely and reliably under all anticipated operating conditions.
**s)** To verify the satisfactory operation of all railway operational systems, including signalling, train control, telecommunications, SCADA, Passenger Information Systems (PIS), Public Address

(PA), Closed-Circuit Television (CCTV), Automatic Fare Collection (AFC), Platform Screen Doors (PSD), tunnel ventilation systems, station ventilation systems, lifts, escalators, pumping stations, drainage systems, plumbing systems, lighting systems and all other systems forming part of the Works.

**t)** To verify that all track systems, switches and crossings, point operating equipment, axle counters, track circuits, train detection systems and associated interfaces perform safely and reliably throughout the specified operational envelope.

**u)** To demonstrate that the completed railway system achieves the contractual performance criteria, including journey times, headways, operational availability, system capacity, response times, power quality, communication performance, environmental conditions and passenger service requirements.

**v)** To verify that all defects, deficiencies, non-conformities and outstanding works identified during Testing and Commissioning have been corrected, retested and accepted prior to Trial Operations.

**w)** To demonstrate through Trial Running and Trial Operations that the complete railway system can sustain continuous operation over the specified demonstration period while meeting all contractual Key Performance Indicators (KPIs), RAM targets and operational performance requirements.

**x)** To provide the Employer with sufficient objective evidence to support the issue of Taking-Over Certificates, Operational Acceptance, Final Acceptance and all other contractual milestones.

The Contractor shall ensure that Testing, Commissioning and Trial Operations are planned and executed using a structured systems engineering approach, progressing in a logical sequence from component verification through subsystem testing, system integration, operational validation, Trial Running and Trial Operations until Final Acceptance is achieved.

Successful completion of any individual testing stage shall not constitute acceptance of the Works or any part thereof. Acceptance shall only occur upon successful completion of all contractual testing stages, correction of all identified deficiencies, submission of the required documentation, acceptance by the Employer and, where applicable, endorsement by the Independent Safety Assessor (ISA) and the relevant regulatory authorities.

The Contractor shall recognise that the primary objective of Testing and Commissioning is not merely to demonstrate compliance of individual equipment items, but to prove that the complete railway system operates safely, reliably, efficiently and as a fully integrated transport system capable of supporting continuous passenger service throughout the intended operational life of the Project.

### 10.1.3 General Principles

The Contractor shall plan, manage, coordinate, execute and complete all Testing, Commissioning and Trial Operations in a systematic, controlled and fully documented manner, ensuring that the completed Works satisfy all contractual, statutory, operational, technical and safety requirements prior to being placed into passenger service.

Testing and Commissioning shall be based upon a structured systems engineering approach that progressively demonstrates compliance from individual components through to the fully integrated railway system. Each testing stage shall provide documented evidence that the applicable acceptance criteria have been achieved before progression to the subsequent stage.

The Contractor shall develop, implement and maintain a comprehensive Testing and Commissioning programme that clearly identifies all testing activities, dependencies, interfaces, resources, responsibilities, milestones and acceptance criteria. The programme shall be fully

integrated with the overall Project Programme and shall demonstrate the logical sequence of all Testing and Commissioning activities.

Testing activities shall be planned and executed in accordance with approved Testing and Commissioning Plans, Inspection and Test Plans (ITPs), Method Statements, Risk Assessments, Safe Systems of Work and Permit-to-Work procedures, as applicable.

Testing shall not commence until the Employer has reviewed the relevant documentation and all prerequisite conditions have been satisfied. The Contractor shall be responsible for demonstrating that all prerequisites for each testing stage have been achieved prior to requesting permission to proceed.

Each testing activity shall be performed only after successful completion of the preceding testing stage unless otherwise approved in writing by the Employer. The general testing hierarchy shall comprise, as a minimum:

- Design Verification;
- Factory Acceptance Tests (FAT);
- Factory Integration Tests (FIT), where applicable;
- Site Acceptance Tests (SAT);
- Installation Verification;
- Pre-Commissioning;
- Static Testing;
- Dynamic Testing;
- Subsystem Testing;
- Integrated System Testing;
- Operational Scenario Testing;
- Emergency Scenario Testing;
- Trial Running;
- Trial Operations;
- Reliability, Availability and Maintainability (RAM) Demonstration;
- Safety Validation; and
- Final Acceptance.

The successful completion of one testing stage shall not relieve the Contractor from responsibility for the satisfactory performance of subsequent testing stages or the overall compliance of the Works.

Testing and Commissioning shall be undertaken using calibrated instruments, certified measuring equipment and validated software tools appropriate for the intended purpose. Calibration certificates shall remain valid throughout the testing period and shall be made available to the Employer upon request.

The Contractor shall ensure that all Testing and Commissioning personnel possess appropriate qualifications, competence, training and authorisation relevant to the activities being undertaken. Personnel performing specialised testing shall hold recognised professional certifications where required by applicable standards or statutory regulations.

Testing shall be performed under representative operating conditions that accurately simulate the intended operational environment. Where specified by the Contract, testing shall include normal operation, degraded operation, emergency operation, recovery operation, maintenance operation and failure scenarios.

Confidential

The Contractor shall verify both the functional performance of individual systems and the correct operation of all interfaces between systems. Interface testing shall include equipment supplied by different manufacturers, different subcontractors and third-party organisations where such interfaces form part of the operational railway system.

No system shall be considered complete until its interfaces with all associated systems have been successfully demonstrated.

Testing shall verify compliance with all functional, operational, performance, environmental, safety, cybersecurity, electromagnetic compatibility (EMC), maintainability and reliability requirements specified within the Contract.

Where software-controlled systems are provided, the Contractor shall demonstrate correct software functionality, software version control, configuration management, cybersecurity protection, redundancy, fault recovery and data integrity throughout all applicable testing stages.

Testing shall include verification of all automatic operating sequences, manual operating procedures, operator interventions, alarms, event recording, supervisory functions, diagnostics and fail-safe mechanisms.

The Contractor shall ensure that all protective devices, safety interlocks, emergency shutdown systems, emergency stop devices, protective relays, safety barriers and warning systems are tested under both normal and abnormal operating conditions.

Testing shall include verification of complete operational scenarios rather than isolated equipment functions. Such scenarios shall demonstrate the interaction between signalling, traction power, telecommunications, SCADA, platform systems, tunnel systems, rolling stock interfaces, depot systems and all other operational subsystems.

Testing shall include verification of complete emergency response scenarios, including but not limited to:

- Fire events;
- Smoke extraction operation;
- Emergency ventilation operation;
- Emergency power transfer;
- Utility supply failures;
- Communication failures;
- SCADA failures;
- Signalling failures;
- Traction power failures;
- Rolling stock evacuation;
- Station evacuation;
- Tunnel evacuation;
- Equipment failures;
- Network communication failures;
- Cybersecurity incidents affecting operational systems; and
- Recovery to normal operational status.

The Contractor shall ensure that all identified defects, deficiencies, software anomalies, configuration errors, non-conformities and outstanding works are recorded within a controlled Defect Management System. No testing stage shall be considered complete until all defects affecting the objectives of that stage have been rectified or formally accepted by the Employer.

Confidential

Where temporary modifications, bypasses, software overrides or temporary operating procedures are required to facilitate testing, these shall be subject to formal approval by the Employer prior to implementation. All temporary arrangements shall be fully documented, risk assessed and removed upon completion of the relevant testing activities.

The Contractor shall implement comprehensive configuration management procedures to ensure that all tested equipment, software, firmware, documentation and operational data remain under strict configuration control throughout the Testing and Commissioning period. No hardware or software modifications shall be introduced following successful testing without prior approval of the Employer and completion of any additional testing considered necessary.

Testing and Commissioning activities shall be undertaken in close coordination with the Employer, Independent Safety Assessor (ISA), Railway Operator, Infrastructure Manager, relevant Authorities, utility providers, third-party contractors and all other stakeholders having responsibilities or interfaces with the Works.

The Employer reserves the right to witness any testing activity, require additional demonstrations, repeat tests, suspend testing or request supplementary verification where considered necessary to establish compliance with the Contract. Such rights shall not diminish the Contractor's responsibility for the successful completion of the Works.

The Contractor shall provide all temporary facilities, access arrangements, personnel, specialist equipment, test instruments, software licences, temporary power supplies, temporary communications, test loads, rolling stock, consumables and all other resources necessary to undertake Testing and Commissioning. Unless otherwise expressly stated in the Contract, all such provisions shall be deemed to be included within the Contract Price.

The completion of any individual test, subsystem or testing stage shall not constitute acceptance of the Works. Acceptance shall only be achieved following successful completion of all Testing, Commissioning and Trial Operations activities, submission and approval of all required documentation, closure of all outstanding non-conformities and issuance of the applicable contractual acceptance certificates by the Employer.

Throughout all Testing and Commissioning activities, the overriding principles shall be the protection of life, the safety of railway operations, the integrity of railway assets, compliance with statutory requirements, minimisation of disruption to existing railway operations and the delivery of a safe, reliable, maintainable and fully interoperable railway system capable of meeting the long-term operational objectives of the Project.

**10.1.4 Contractor's Overall Responsibilities**

The Contractor shall have full responsibility for the planning, management, coordination, execution, supervision, monitoring, documentation and successful completion of all Testing, Commissioning and Trial Operations required to demonstrate compliance of the Works with the Contract.

The Contractor's responsibilities shall extend to every system, subsystem, equipment item, software application, interface, temporary installation and operational function forming part of the Works, irrespective of whether such items are designed, manufactured, supplied or installed directly by the Contractor or by any Subcontractor, Supplier or Specialist engaged under the Contract.

The Contractor shall remain solely responsible for the successful completion of all Testing and Commissioning activities, including those undertaken by manufacturers, suppliers, specialist subcontractors or third parties acting on the Contractor's behalf.

Confidential

The Contractor shall prepare, implement, maintain and regularly update a fully integrated Testing and Commissioning Programme demonstrating the logical sequence, interfaces, dependencies, milestones, critical path activities and completion dates for all testing stages. The programme shall be coordinated with the overall Project Programme and shall identify all activities affecting possession planning, access arrangements, utility outages, railway operations, third-party interfaces and regulatory approvals.

The Contractor shall appoint a suitably qualified and experienced Testing and Commissioning Manager who shall have overall authority and responsibility for planning, coordinating and managing all Testing and Commissioning activities. The Testing and Commissioning Manager shall act as the primary point of contact with the Employer regarding all Testing and Commissioning matters and shall not be replaced without the Employer's prior written approval.

The Contractor shall establish a dedicated Testing and Commissioning organisation comprising suitably qualified engineers, supervisors, technicians, safety personnel, software specialists, commissioning engineers, system integration engineers and administrative personnel in sufficient numbers to successfully complete the Works within the Contract Time.

The Contractor shall ensure that manufacturers' representatives and specialist subcontractors attend all Testing and Commissioning activities where their presence is necessary to support testing, fault investigation, software configuration, equipment adjustment, warranty obligations or acceptance of the relevant systems.

The Contractor shall prepare and submit for the Employer's review and acceptance all Testing and Commissioning documentation, including but not limited to:

- Master Testing and Commissioning Plan;
- Detailed Testing and Commissioning Procedures;
- Inspection and Test Plans (ITPs);
- Method Statements;
- Test Specifications;
- Test Schedules;
- Interface Test Plans;
- Operational Scenario Test Procedures;
- Emergency Scenario Test Procedures;
- Trial Running Procedures;
- Trial Operation Procedures;
- Reliability Demonstration Plans;
- Inspection Checklists;
- Calibration Records;
- Risk Assessments;
- Safe Systems of Work;
- Permit-to-Work documentation;
- Test Reports;
- Defect Registers;
- Non-Conformance Reports (NCRs);
- Corrective Action Records;
- Configuration Management Records; and

Confidential

- Final Testing and Commissioning Dossiers.

The Contractor shall provide all temporary works, facilities, utilities, services, equipment and resources necessary to undertake Testing and Commissioning, including temporary electrical supplies, temporary communications, temporary lighting, temporary ventilation, temporary water supplies, temporary drainage, temporary safety systems, test instruments, calibrated measuring equipment, software licences, data logging equipment, communication devices, lifting equipment, access equipment, barriers, signage, personal protective equipment, temporary fencing and all other items required for the safe and efficient execution of testing activities.

The Contractor shall provide, at no additional cost to the Employer, all consumables required for Testing and Commissioning, including electrical energy, fuel, lubricants, hydraulic fluids, refrigerants, chemicals, compressed gases, cleaning materials, replacement filters, batteries, printer consumables, calibration materials, temporary wiring, temporary pipework, temporary fittings and any other materials consumed during testing.

The Contractor shall make all necessary arrangements for obtaining access to the Works, railway possessions, utility connections, permits, approvals, licences and authorisations necessary to undertake Testing and Commissioning activities, unless otherwise expressly stated within the Contract.

The Contractor shall coordinate all Testing and Commissioning activities with the Employer, the Engineer, the Independent Safety Assessor (ISA), Railway Operator, Infrastructure Manager, utility providers, public authorities, adjacent contractors and any third parties whose activities may affect or be affected by the testing programme.

The Contractor shall be responsible for identifying, managing and resolving all interfaces between systems supplied under this Contract and systems supplied under separate contracts. The Contractor shall actively participate in interface coordination meetings and shall cooperate fully with other contractors to ensure successful integrated testing.

The Contractor shall provide all labour, supervision, management, technical support and specialist expertise necessary to execute Factory Acceptance Tests (FAT), Factory Integration Tests (FIT), Site Acceptance Tests (SAT), installation verification, static testing, dynamic testing, subsystem testing, integrated system testing, operational scenario testing, emergency scenario testing, Trial Running, Trial Operations and Reliability Demonstration.

The Contractor shall be responsible for organising and coordinating the attendance of all manufacturers, suppliers and specialist subcontractors at Factory Acceptance Tests and Site Acceptance Tests, including all associated travel, accommodation, interpretation services and logistical arrangements where required.

The Contractor shall ensure that all equipment, software and systems are fully configured prior to testing. No incomplete installation, temporary configuration or provisional software version shall be presented for contractual testing unless specifically authorised in writing by the Employer.

The Contractor shall ensure that all software, firmware and configuration data remain under strict configuration control throughout the Testing and Commissioning period. Any modification introduced following successful testing shall be subject to formal change control, impact assessment and such additional testing as may be required to demonstrate continued compliance.

The Contractor shall investigate, record, classify and rectify all defects, failures, anomalies, software faults, interface issues, non-conformities and performance deficiencies identified during Testing and Commissioning. Following completion of corrective actions, the Contractor shall repeat all affected tests to demonstrate satisfactory resolution of the identified issues.

The Contractor shall ensure that no defect is concealed, deferred or accepted without the prior written approval of the Employer.
The Contractor shall maintain a continuously updated Defect Register identifying the status of every outstanding defect, corrective action, responsible party, target completion date and verification status. The Defect Register shall be submitted to the Employer at intervals specified within the Contract or upon request.
The Contractor shall provide all rolling stock, specialist vehicles, test trains, simulation equipment, portable instrumentation, communication equipment and temporary software necessary to undertake system integration testing and operational demonstrations where such resources are not expressly stated to be provided by the Employer.
The Contractor shall ensure that all Testing and Commissioning activities are undertaken under controlled safety conditions in accordance with approved Risk Assessments, Method Statements, Safe Systems of Work, Permit-to-Work procedures and applicable railway safety rules.
The Contractor shall provide competent safety personnel to supervise all Testing and Commissioning activities and shall ensure that emergency arrangements, first aid facilities, rescue equipment and emergency communications remain available throughout the testing period.
The Contractor shall be responsible for protecting completed Works from damage during Testing and Commissioning and shall immediately repair, replace or reinstate any damage resulting from testing activities at no additional cost to the Employer.
The Contractor shall prepare and deliver comprehensive training programmes for the Employer's operating, maintenance and engineering personnel. Training shall include classroom instruction, practical demonstrations, operational simulations, emergency procedures, fault diagnosis, maintenance procedures, software operation and hands-on participation during Testing and Commissioning activities.
The Contractor shall prepare and submit complete Operation and Maintenance Manuals, maintenance schedules, spare parts catalogues, software documentation, configuration records, asset registers, calibration records, test certificates and as-built documentation prior to commencement of Trial Operations.
The Contractor shall provide all engineering support necessary during Trial Running and Trial Operations, including specialist personnel capable of responding immediately to equipment failures, software issues, operational incidents and interface problems.
The Contractor shall remain responsible for monitoring system performance throughout Trial Operations and shall immediately investigate and rectify any failure to achieve the specified contractual performance criteria, reliability targets, availability targets or safety requirements.
The Contractor shall cooperate fully with the Independent Safety Assessor (ISA) and shall provide all documentation, records, calculations, software evidence, test reports, demonstrations and technical assistance required to support independent safety assessment activities.
The Contractor shall provide unrestricted access to all testing activities, documentation, equipment, software and personnel required by the Employer, the Engineer, the Independent Safety Assessor and authorised regulatory authorities for the purpose of witnessing, inspection, auditing or verification.
The Contractor shall recognise that the review, witnessing, observation or acceptance of any Testing and Commissioning activity by the Employer shall not relieve the Contractor of any contractual responsibility for the adequacy, completeness or successful performance of the Works.
Unless expressly stated otherwise within the Contract, all obligations described in this Section, together with all associated labour, supervision, engineering, management, temporary works,

Confidential

specialist personnel, manufacturers' representatives, software, licences, consumables, utilities, transportation, accommodation, logistics, insurance, testing equipment, calibration, documentation, training and all other resources necessary to complete Testing, Commissioning and Trial Operations, shall be deemed to be fully included within the Contract Price. No additional payment shall be made by the Employer for the fulfilment of these obligations.

**10.1.5 Employer's Rights**

The Employer shall have the unrestricted right to monitor, inspect, witness, review, audit and verify all Testing, Commissioning and Trial Operations activities carried out under the Contract. The exercise of such rights shall not relieve the Contractor of any obligation or responsibility under the Contract, nor shall it constitute acceptance of the Works or any part thereof.

The Employer may be represented during Testing and Commissioning activities by the Engineer, authorised representatives, the Independent Safety Assessor (ISA), the Railway Operator, the Infrastructure Manager, regulatory authorities or any other persons nominated by the Employer.

The Contractor shall provide all reasonable assistance required to enable the Employer and its representatives to exercise their rights, including unrestricted access to the Works, testing locations, workshops, factories, software environments, temporary facilities, records, documentation, equipment and personnel relevant to the Testing and Commissioning activities.

The Employer shall have the right to witness any Factory Acceptance Test (FAT), Factory Integration Test (FIT), Site Acceptance Test (SAT), installation verification, subsystem test, integrated system test, static test, dynamic test, Trial Running activity, Trial Operation or any other demonstration required under the Contract.

The Contractor shall provide written notification to the Employer of all contractual testing activities within the notice periods specified in the Contract. Unless otherwise stated, notification shall be submitted sufficiently in advance to allow the Employer adequate time to arrange attendance. Failure to provide the required notice may result in the Employer rejecting the test and requiring it to be repeated at the Contractor's expense.

The Employer reserves the right to designate specific testing activities as Witness Points or Hold Points.

For activities designated as Witness Points, the Contractor may proceed with the test if the Employer elects not to attend, provided that the required notice has been given and no written instruction to postpone the test has been issued.

For activities designated as Hold Points, the Contractor shall not proceed until written authorisation has been issued by the Employer. Any work undertaken beyond an approved Hold Point without written authorisation may be rejected and shall be subject to removal, repetition or reinstatement at the Contractor's sole cost.

The Employer shall have the right to suspend, postpone or terminate any testing activity where, in the Employer's opinion:

- the prerequisites for the test have not been satisfied;
- the Works are incomplete or unsuitable for testing;
- the testing procedures have not been approved where approval is required;
- the testing personnel are not suitably qualified or authorised;
- the testing equipment is defective, unsuitable or inadequately calibrated;
- unsafe conditions exist;
- statutory or railway safety requirements are not being complied with;

Confidential

- the testing activity may adversely affect existing railway operations, adjacent infrastructure or third-party assets; or
- continuation of the testing activity may compromise safety, quality, reliability or the integrity of the Works.

Any suspension or postponement resulting from the Contractor's failure to satisfy the Contract requirements shall not entitle the Contractor to additional payment or extension of time, except where expressly provided elsewhere in the Contract.

The Employer shall have the right to require any test to be repeated where:

- the original test has not been conducted in accordance with the approved procedure;
- measuring equipment or instrumentation is found to be defective or improperly calibrated;
- software or configuration changes have been introduced following completion of the original test;
- defects have been rectified that may affect previously demonstrated performance;
- the original test results are incomplete, inconsistent or unreliable;
- witness attendance was prevented due to insufficient notice or failure by the Contractor to provide the agreed testing conditions; or
- there is reasonable doubt that the Contract requirements have been fully demonstrated.

Unless otherwise stated in the Contract, all costs associated with repeated testing resulting from deficiencies attributable to the Contractor shall be borne entirely by the Contractor.

The Employer shall have the right to require additional verification, inspection, demonstration or performance testing where reasonably necessary to establish compliance with the Contract, particularly in relation to safety-critical systems, operational interfaces, software-controlled functions, cybersecurity measures, RAM performance or statutory obligations.

Where deficiencies are identified, the Employer may instruct the Contractor to undertake additional investigations, engineering analyses, simulations, calculations, software verification, root cause analysis or corrective actions before further testing is permitted.

The Employer shall have the right to inspect and audit the Contractor's quality management system, Testing and Commissioning organisation, configuration management procedures, calibration records, training records, competency records, inspection records and all documentation relating to Testing and Commissioning activities.

The Contractor shall make available all test records, raw data, electronic files, software logs, event records, communication traces, measurement results, configuration data and supporting documentation necessary for independent verification by the Employer.

The Employer shall have the right to require access to any software version, source configuration records, parameter settings, firmware versions and cybersecurity documentation necessary to verify that the tested configuration corresponds to the approved design baseline.

The Employer shall have the right to observe any testing activity undertaken by manufacturers, specialist subcontractors or suppliers where such testing forms part of the contractual acceptance process.

The Employer may require the Contractor to demonstrate the operation of any individual item of equipment, subsystem or integrated railway function at any reasonable time during the Testing and Commissioning period where such demonstration is necessary to verify contractual compliance.

The Employer shall have the right to require additional operational scenario testing, degraded mode testing, emergency scenario testing, recovery testing or interface testing where operational

experience, safety assessments or regulatory requirements indicate that further verification is necessary.
The Employer shall have the right to reject any equipment, software, documentation, test procedure, test result or completed testing stage that fails to satisfy the requirements of the Contract, regardless of whether such activity has previously been witnessed or reviewed.
The Employer's review or acceptance of any Testing and Commissioning documentation shall not relieve the Contractor from responsibility for the technical accuracy, completeness or adequacy of such documentation.
The Employer shall have the right to withhold approval for progression to the next testing stage where the acceptance criteria for the preceding stage have not been fully achieved or where outstanding defects, non-conformities or documentation deficiencies could adversely affect subsequent testing activities.
The Employer may require all Category 1 (Critical) and Category 2 (Major) defects identified during Testing and Commissioning to be fully rectified and successfully retested before Trial Running or Trial Operations may commence. Category 3 (Minor) defects may only remain outstanding where expressly accepted in writing by the Employer and where such defects do not affect safety, functionality, reliability, maintainability or statutory compliance.
The Employer reserves the right to require the Contractor to extend the duration of Trial Running, Trial Operations or Reliability Demonstration where the specified contractual performance criteria, reliability targets, availability targets or operational readiness requirements have not been achieved.
The Employer shall have the right to require the attendance of the Contractor's senior management, specialist engineers, manufacturers' representatives or key subcontractors at meetings, inspections, demonstrations or testing activities where their participation is necessary to resolve technical issues or facilitate acceptance of the Works.
Nothing contained within this Section shall be interpreted as limiting any other right, remedy, authority or entitlement available to the Employer under the Contract, applicable legislation or governing law.
The exercise, or failure to exercise, any right by the Employer under this Section shall not constitute a waiver of any other contractual right or remedy, nor shall it relieve the Contractor from any obligation, responsibility or liability arising under the Contract.

### 10.1.6 Coordination Requirements

The Contractor shall be solely responsible for the planning, management, coordination and execution of all activities necessary to ensure the orderly and efficient delivery of the Testing, Commissioning and Trial Operations programme.
The Contractor shall establish and maintain effective coordination with the Employer, the Engineer, the Independent Safety Assessor (ISA), the Railway Operator, the Infrastructure Manager, Notified Body (NoBo), Designated Body (DeBo), Assessment Body (AsBo), regulatory authorities, utility providers, public authorities, emergency services, adjacent contractors, suppliers and all other organisations whose activities may affect, or be affected by, the Testing and Commissioning programme.
The Contractor shall appoint a dedicated Testing and Commissioning Coordination Manager who shall be responsible for the day-to-day management of all interfaces associated with Testing and Commissioning activities. The Coordination Manager shall have sufficient authority to coordinate

Confidential

activities across all engineering disciplines, subcontractors, suppliers and third-party organisations.

The Contractor shall prepare and maintain a comprehensive Testing and Commissioning Interface Register identifying all technical, operational, contractual and organisational interfaces associated with the Works. The Interface Register shall identify the responsible organisation, interface owner, prerequisites, dependencies, constraints, target dates, risks and interface status for each identified interface.

The Contractor shall identify all interface requirements during the design stage and shall continuously update the Interface Register throughout the Contract. Any change affecting an established interface shall be subject to formal configuration and change management procedures.

The Contractor shall coordinate all Testing and Commissioning activities with the overall Project Programme to ensure that testing activities do not adversely affect construction activities, system installation, inspections, regulatory approvals, operational readiness or the achievement of contractual milestones.

Where the Works interface with existing operational railway infrastructure, the Contractor shall coordinate all testing activities with the Infrastructure Manager and Railway Operator. Such coordination shall include possession planning, isolation arrangements, operational restrictions, temporary operating procedures, emergency arrangements and restoration of normal railway operations.

The Contractor shall prepare detailed possession requests, access requests and isolation requests within the timeframes specified by the Employer and the Infrastructure Manager. All requests shall clearly identify the purpose of the activity, affected assets, duration, required resources, safety precautions and restoration arrangements.

The Contractor shall recognise that access to operational railway infrastructure may be restricted by operational requirements. The Contractor shall plan the Testing and Commissioning programme accordingly and shall not be entitled to additional payment arising from foreseeable access restrictions, possession limitations or operational constraints.

Where Testing and Commissioning activities require temporary interruption of railway services, electrical supplies, communications systems, signalling systems, ventilation systems or other operational facilities, the Contractor shall coordinate such activities sufficiently in advance to obtain all necessary approvals.

The Contractor shall coordinate all electrical isolation activities with the relevant power supply authorities, electrical control centres and authorised electrical personnel. No electrical testing requiring isolation shall commence without formal approval and implementation of the applicable isolation procedures.

The Contractor shall coordinate all communications testing with telecommunications service providers, network operators, radio authorities and other relevant organisations where external communications infrastructure forms part of the testing scope.

Where utility services are affected by Testing and Commissioning activities, the Contractor shall coordinate with the relevant utility providers to minimise disruption and ensure continuity of essential services.

The Contractor shall actively participate in all Testing and Commissioning coordination meetings organised by the Employer and shall convene additional coordination meetings as necessary to ensure effective management of testing activities. The Contractor shall prepare agendas, distribute supporting documentation, record meeting minutes and monitor completion of all agreed actions.

Confidential

The Contractor shall ensure effective coordination between all subcontractors, manufacturers and suppliers participating in Testing and Commissioning activities. No subcontractor or supplier shall undertake contractual testing without the knowledge and coordination of the Contractor.
Where multiple systems supplied by different organisations require integrated testing, the Contractor shall assume overall responsibility for planning, coordinating and managing the integrated testing activities, irrespective of contractual boundaries.
The Contractor shall ensure that all interface documentation, software versions, configuration data, communication protocols, operating parameters and technical documentation are available to all relevant parties sufficiently in advance of integrated testing activities.
The Contractor shall coordinate the attendance of manufacturers' representatives, specialist engineers, software developers and commissioning specialists whenever their participation is required to support contractual testing or fault investigation.
The Contractor shall coordinate all witness testing activities with the Employer and shall issue formal notifications within the notice periods specified in the Contract. The Contractor shall ensure that all prerequisite conditions have been satisfied prior to inviting the Employer or other authorised parties to witness any testing activity.
The Contractor shall prepare and maintain a detailed Testing and Commissioning Master Schedule identifying all testing stages, milestones, interfaces, witness points, hold points, regulatory inspections, certification activities, Trial Running, Trial Operations and planned acceptance dates.
The Contractor shall continuously monitor the progress of Testing and Commissioning activities and shall promptly notify the Employer of any event that may affect the approved programme, contractual milestones or planned operational commencement.
Where delays occur, the Contractor shall prepare and submit recovery programmes identifying proposed mitigation measures, revised sequencing, additional resources and revised completion dates.
The Contractor shall coordinate all Testing and Commissioning activities with safety management processes. Risk assessments, Method Statements, Safe Systems of Work and Permit-to-Work procedures shall be coordinated across all participating organisations to ensure a consistent and controlled approach to safety management.
The Contractor shall coordinate emergency preparedness arrangements with the Employer, Railway Operator, emergency services and relevant public authorities. Emergency response procedures shall be validated through practical demonstrations and emergency scenario testing where specified by the Contract.
The Contractor shall ensure that all operational staff participating in Trial Running and Trial Operations have received appropriate training prior to commencement of operational activities. Training schedules shall be coordinated with the Employer to ensure operational readiness.
The Contractor shall coordinate all documentation required for independent assessment, certification and regulatory approval. All information requested by the Independent Safety Assessor (ISA), Notified Body (NoBo), Designated Body (DeBo), Assessment Body (AsBo) or regulatory authorities shall be provided in a timely manner to avoid delays to the Testing and Commissioning programme.
The Contractor shall coordinate all activities associated with safety certification, interoperability verification and authorisation for placing the railway system into service. Any observations, comments or non-conformities raised by the relevant assessment or certification bodies shall be promptly addressed by the Contractor.

Confidential

The Contractor shall maintain effective communication with all stakeholders throughout the Testing and Commissioning period. Communication protocols, reporting arrangements, escalation procedures and decision-making responsibilities shall be clearly defined and documented.
The Contractor shall establish formal procedures for managing interface issues, conflicts and technical disagreements arising during Testing and Commissioning. Such procedures shall include issue identification, allocation of responsibilities, target resolution dates, escalation routes and verification of corrective actions.
The Contractor shall ensure that all completed testing records, interface approvals, acceptance certificates, regulatory approvals and operational authorisations are fully coordinated and incorporated into the final Testing and Commissioning documentation submitted to the Employer.
The Contractor shall recognise that effective coordination is fundamental to the successful completion of the Works. Any failure to adequately coordinate Testing and Commissioning activities that results in delays, disruption, repeated testing, operational restrictions or additional costs shall remain the sole responsibility of the Contractor unless otherwise expressly provided for under the Contract.

### 10.1.7 Applicable Specifications

The Testing, Commissioning and Trial Operations of the Works shall be executed in full compliance with all applicable specifications, standards, codes, regulations and technical requirements as defined in the Contract.
The Contractor shall ensure that all Testing and Commissioning activities are carried out in accordance with the most stringent requirements arising from applicable European Union legislation, Technical Specifications for Interoperability (TSIs), European Standards (EN), International Electrotechnical Commission (IEC) standards, International Organization for Standardization (ISO) standards, relevant national regulations, and any additional requirements specified within the Employer's Requirements or other Contract Documents.
Where conflicts or inconsistencies exist between applicable documents, the following order of precedence shall apply unless otherwise instructed by the Employer:

1. The Contract Agreement and Conditions of Contract;
2. The Employer's Requirements (including all Sections relating to Testing, Commissioning and Trial Operations);
3. System Technical Specifications and Particular Specifications;
4. Applicable Technical Specifications for Interoperability (TSIs);
5. Applicable European Standards (EN);
6. Applicable IEC Standards;
7. Applicable ISO Standards;
8. National laws, regulations and statutory requirements;
9. Industry codes of practice and recognised best engineering practice.

In the event that two or more applicable requirements conflict, the Contractor shall immediately notify the Employer in writing and shall obtain clarification prior to proceeding with the affected Testing or Commissioning activity. In the absence of such clarification, the more onerous requirement shall apply.
The Contractor shall be responsible for identifying all applicable standards and regulatory requirements relevant to the Works and shall ensure that these are fully incorporated into all

Testing and Commissioning procedures, Inspection and Test Plans (ITPs), Method Statements and test documentation.
The Contractor shall ensure that all Testing and Commissioning activities comply with the relevant Technical Specifications for Interoperability (TSIs), including but not limited to:

- TSI Infrastructure (INF);
- TSI Energy (ENE);
- TSI Control-Command and Signalling (CCS);
- TSI Operation and Traffic Management (OPE);
- TSI Persons with Reduced Mobility (PRM);
- TSI Safety in Railway Tunnels (SRT), where applicable.

The Contractor shall ensure compliance with applicable RAMS requirements in accordance with EN 50126, EN 50128 and EN 50129, including demonstration of Reliability, Availability, Maintainability and Safety targets during Testing, Commissioning and Trial Operations.
All electrical Testing and Commissioning activities shall comply with applicable IEC standards, including but not limited to IEC 60364, IEC 60076, IEC 62271, IEC 61439, IEC 60255 and IEC 61850, as relevant to the systems under test.
All signalling and control-command testing shall comply with applicable CENELEC standards, including EN 50126, EN 50128, EN 50129, EN 50159 and related interoperability specifications.
All fire detection, fire alarm, smoke control and fire suppression system testing shall comply with EN 54 series standards, EN 12101 series standards, NFPA standards where specified in the Contract, and applicable national fire safety regulations.
All mechanical, HVAC, ventilation and environmental control system testing shall comply with relevant EN, ISO and ASHRAE standards as specified in the Contract Documents.
All platform screen door systems, lifts and escalators shall comply with EN 81, EN 115 and relevant machinery safety directives and associated harmonised standards.
All telecommunications, data transmission, SCADA, CCTV, public address, passenger information and related systems shall comply with applicable IEC, EN and ITU-T standards, including cybersecurity and data integrity requirements where specified.
All track, turnout and permanent way testing shall comply with relevant EN standards, UIC codes and applicable national railway infrastructure standards.
The Contractor shall ensure that all Testing and Commissioning activities comply with applicable health, safety and environmental legislation, including but not limited to occupational safety regulations, environmental protection requirements and railway safety legislation in force in the country of the Works.
The Contractor shall also comply with all requirements issued by competent authorities, regulatory bodies, safety authorities and certification bodies, including any conditions imposed as part of authorisation for placing into service.
Where any applicable standard is updated, replaced or superseded during the execution of the Contract, the Contractor shall assess the impact of such changes and shall implement the most recent version where required to ensure compliance with statutory obligations and safety requirements. Any resulting change affecting cost or programme shall be subject to the change control provisions of the Contract.
The Contractor shall be responsible for maintaining a comprehensive register of all applicable specifications and standards relevant to Testing, Commissioning and Trial Operations. This register shall be updated throughout the duration of the Contract and shall be subject to review by the Employer upon request.

Confidential

Compliance with applicable specifications shall not relieve the Contractor of its obligation to ensure that the Works are fit for purpose, safe, reliable and capable of achieving the performance requirements defined in the Contract.

**10.1.8 Definitions**

For the purposes of this Section, the following terms shall have the meanings assigned to them below. Where terms are used in other Sections of the Contract, such terms shall, unless otherwise stated, have the same meaning throughout the Contract.

**Acceptance:** The formal written confirmation issued by the Employer that the Works, or a defined part thereof, have successfully completed all required Testing, Commissioning and Trial Operations activities and comply with the Contract requirements.

**Availability:** The proportion of time during which a system or asset is in a functioning condition and capable of performing its required function under specified conditions, expressed in accordance with EN 50126 or other applicable standards.

**Commissioning:** The process of bringing installed systems and equipment into operation, including adjustment, calibration, configuration, verification and functional testing to demonstrate compliance with the Contract requirements.

**Contractor:** The party responsible for the design, supply, installation, testing, commissioning and completion of the Works under the Contract.

**Defect:** Any failure, non-conformity, deficiency, fault, omission or deviation from the Contract requirements, including design, installation, material, workmanship, software, documentation or performance deficiencies.

**Factory Acceptance Test (FAT):** Testing performed at the manufacturer's premises to verify that equipment or systems comply with the specified requirements prior to delivery to Site.

**Factory Integration Test (FIT):** Testing performed at factory level to verify the correct integration and interaction of subsystems prior to installation at Site.

**Hold Point:** A defined stage in the Testing and Commissioning process beyond which no further activity shall proceed without written authorization from the Employer.

**Independent Safety Assessor (ISA):** An independent organization appointed to assess the safety of the railway system in accordance with applicable safety standards and regulatory requirements.

**Interface:** A physical, functional, operational, electrical, mechanical, software or organisational point of interaction between two or more systems, subsystems, contractors or stakeholders.

**Interoperability:** The ability of the railway system to operate safely and efficiently across different subsystems and networks in compliance with applicable Technical Specifications for Interoperability (TSIs).

**Installation Verification:** Inspection and testing activities undertaken to confirm that equipment and systems have been correctly installed in accordance with design requirements and manufacturer instructions.

**Integrated System Testing:** Testing undertaken to verify the correct interaction and performance of multiple subsystems operating together as a complete railway system.

**Method Statement:** A documented procedure describing how a specific Testing or Commissioning activity shall be carried out safely and in compliance with the Contract requirements.

**Notified Body (NoBo):** An organisation designated to assess conformity with Technical Specifications for Interoperability (TSIs) in accordance with applicable EU legislation.

Confidential

**Operational Scenario Testing:** Testing performed to demonstrate system performance under defined operational conditions, including normal, degraded and emergency scenarios.
**Overhead Contact System (OCS):** The system providing electrical power to trains via overhead conductors.
**Performance:** The ability of the Works or any system to achieve the functional, operational, reliability, availability and capacity requirements specified in the Contract.
**Pre-Commissioning:** Activities undertaken following installation verification and prior to commissioning to prepare systems for functional operation.
**RAM (Reliability, Availability, Maintainability):** A set of characteristics describing the ability of a system to perform its required function under stated conditions over a specified period.
**Safety Integrity Level (SIL):** A discrete level (SIL 1 to SIL 4) corresponding to the target level of safety risk reduction required for safety-related systems.
**Site Acceptance Test (SAT):** Testing performed at Site to verify that installed systems operate in accordance with the Contract requirements under real installation conditions.
**Subsystem:** A defined functional or physical part of the railway system forming part of a larger integrated system.
**System Integration:** The process of combining and testing subsystems to ensure they function together as a complete and coherent railway system.
**Testing and Commissioning:** The full process of verification, validation, inspection, adjustment, configuration, functional testing, performance testing and demonstration activities required to prove that the Works comply with the Contract and are fit for operational use.
**Test Procedure:** A detailed documented sequence of steps defining how a specific test shall be executed, including prerequisites, method, equipment, acceptance criteria and reporting requirements.
**Trial Operations:** A defined period of controlled railway operation under near-real operating conditions undertaken to demonstrate that the complete railway system meets all operational, safety, reliability and performance requirements prior to Final Acceptance.
**Trial Running:** A period of operational testing during which trains and systems are operated under simulated or real conditions to validate system performance and integration.
**Witness Point:** A defined stage in the Testing and Commissioning process at which the Employer has the right to observe the activity, but may elect not to attend.
**Works:** All permanent and temporary works, systems, equipment, structures, software, documentation and services required to be designed, supplied, installed, tested, commissioned and completed under the Contract.

### 10.1.9 Abbreviations

For the purposes of this Section, the following abbreviations shall have the meanings assigned below. These abbreviations shall apply throughout the Contract Documents unless otherwise stated.
**ATO** – Automatic Train Operation
**ATP** – Automatic Train Protection
**ATS** – Automatic Train Supervision
**AsBo** – Assessment Body
**AFC** – Automatic Fare Collection
**CCTV** – Closed Circuit Television
**CCS** – Control Command and Signalling (TSI Subsystem)

**CBI** – Computer-Based Interlocking
**CMS** – Condition Monitoring System
**COC** – Certificate of Conformity
**DC** – Direct Current
**DeBo** – Designated Body
**EN** – European Norm (European Standard)
**EMC** – Electromagnetic Compatibility
**ENE** – Energy (TSI Subsystem)
**E&M** – Electrical and Mechanical
**FAT** – Factory Acceptance Test
**FIT** – Factory Integration Test
**GIS** – Gas Insulated Switchgear
**HV** – High Voltage
**HVAC** – Heating, Ventilation and Air Conditioning
**IEC** – International Electrotechnical Commission
**ISO** – International Organization for Standardization
**ISA** – Independent Safety Assessor
**ITP** – Inspection and Test Plan
**LV** – Low Voltage
**MV** – Medium Voltage
**NFPA** – National Fire Protection Association
**NoBo** – Notified Body
**OCS** – Overhead Contact System
**O&M** – Operation and Maintenance
**OPE** – Operation and Traffic Management (TSI Subsystem)
**PA** – Public Address System
**PIS** – Passenger Information System
**PRM** – Persons with Reduced Mobility (TSI Subsystem)
**RAM** – Reliability, Availability, Maintainability
**RAMS** – Reliability, Availability, Maintainability and Safety
**SCADA** – Supervisory Control and Data Acquisition
**SAT** – Site Acceptance Test
**SIL** – Safety Integrity Level
**SRT** – Safety in Railway Tunnels (TSI Subsystem)
**TCMS** – Train Control and Monitoring System
**T&C** – Testing and Commissioning
**TOM** – Trial Operations Management / Trial Operation Period
**TPSS** – Traction Power Supply System
**TSI** – Technical Specifications for Interoperability
**UPS** – Uninterruptible Power Supply
**VLD** – Very Low Delay (communication performance parameter where applicable)
**WAN** – Wide Area Network
**WMS** – Water Mist System
**WI** – Witness Inspection
**HP** – Hold Point

Confidential

**EIM** – Infrastructure Manager Entity
**RU** – Railway Undertaking (Operator)
**EU** – European Union
Where additional abbreviations are introduced in later Sections of the Contract, such abbreviations shall be interpreted in accordance with their commonly accepted meaning in railway engineering practice or as defined in the relevant Contract Section.

### 10.1.10 Interpretation of Requirements

The requirements set out within this Section shall be interpreted in a hierarchical, risk-based and functionally consistent manner, with the overriding objective of ensuring the safe, reliable, interoperable and compliant operation of the completed railway system.
In the event of any ambiguity, inconsistency, conflict or discrepancy within or between the Contract Documents, the Contractor shall immediately notify the Employer in writing and shall seek formal clarification prior to proceeding with the affected design, procurement, installation, testing or commissioning activity.
Unless otherwise directed by the Employer, the following principles shall apply for the interpretation of the Contract Requirements:
**a)** The requirements shall be interpreted in a manner that achieves full compliance with all applicable safety, operational, technical and statutory obligations.
**b)** Where two or more requirements conflict, the more stringent, more conservative or higher safety requirement shall prevail, unless otherwise instructed in writing by the Employer.
**c)** Requirements related to safety, interoperability, RAM (Reliability, Availability, Maintainability), and statutory compliance shall take precedence over functional, operational or performance optimisation considerations.
**d)** The absence of a specific requirement shall not relieve the Contractor of its obligation to deliver a complete, safe, functional and fully operational railway system in accordance with best international railway engineering practice.
**e)** The Contract Documents shall be interpreted as defining performance-based requirements. It shall be the Contractor's responsibility to ensure that all necessary design, engineering, testing and verification activities are undertaken to achieve the required performance outcomes.
**f)** References to standards, codes and specifications shall be understood to include all subsequent revisions, amendments or replacements, unless otherwise specified or instructed by the Employer.
**g)** The use of terms such as "shall", "shall be", or "is required to" denotes mandatory requirements. The terms "should" or "may" shall be interpreted as advisory or permissive only and shall not relieve the Contractor of compliance with mandatory obligations.
**h)** Any approval, acceptance, review, witness or non-objection by the Employer, Engineer, Independent Safety Assessor (ISA), Notified Body (NoBo), Designated Body (DeBo), Assessment Body (AsBo), or any other authorised party shall not relieve the Contractor of any responsibility, obligation or liability under the Contract.
**i)** Any clarification issued by the Employer shall be binding and shall take precedence over any prior interpretation, assumption or assumption-based planning made by the Contractor.
**j)** The Contractor shall not rely on omissions, ambiguities or inconsistencies in the Contract Documents as a basis for additional payment, extension of time or variation, unless such entitlement is explicitly provided for under the Contract.
**k)** All Testing, Commissioning and Trial Operations activities shall be interpreted in a manner that ensures full system integration across all disciplines, including but not limited to signalling,

traction power, SCADA, telecommunications, fire safety systems, mechanical and electrical systems, rolling stock interfaces and civil infrastructure.

**l)** In all cases, the Contract shall be interpreted in accordance with internationally recognised good engineering practice applicable to modern railway systems, including but not limited to TEN-T requirements, Technical Specifications for Interoperability (TSIs), relevant EN, IEC and ISO standards, and established RAMS principles.

The Contractor shall ensure that all personnel involved in the interpretation of the Contract Documents, including design engineers, testing engineers, commissioning engineers and subcontractors, are fully aware of and comply with the interpretation principles defined herein.

Failure by the Contractor to correctly interpret the Contract requirements shall not relieve the Contractor of any obligation to deliver the Works in full compliance with the Contract, nor shall it entitle the Contractor to any adjustment to the Contract Price or completion schedule.

### 10.1.11 General Provisions

The Testing, Commissioning, Trial Running, Trial Operations and Acceptance requirements specified in this Employer's Requirements define the minimum contractual obligations of the Contractor and shall not be construed as limiting the Contractor's overall responsibility for delivering a complete, safe, reliable, fully integrated and operational railway system.

The Contractor shall be solely responsible for identifying, planning, executing and documenting any additional inspections, tests, simulations, analyses, demonstrations, commissioning activities, software verification, interface validation, operational scenarios, performance verification, safety validation or other activities which may be necessary to demonstrate full compliance with the Contract, the Employer's Requirements, applicable Technical Specifications for Interoperability (TSIs), European and International Standards (including EN, IEC, ISO and NFPA where applicable), national regulations, statutory authority requirements, manufacturers' recommendations and recognised international railway engineering practice.

Where any system, subsystem, equipment, interface or operational scenario has not been explicitly described within this Specification, but is necessary to achieve a complete, interoperable, maintainable, safe and operational railway system, the Contractor shall perform all necessary design verification, testing, commissioning, integration, reliability demonstration and acceptance activities in accordance with the same principles, procedures, quality requirements and acceptance criteria specified for comparable systems within the Contract.

Furthermore, the Contractor shall comply with any reasonable additional testing, commissioning, verification or validation activities requested by the Employer, the Engineer, the Independent Safety Assessor (ISA), the Notified Body (NoBo), the Designated Body (DeBo), the Assessment Body (AsBo), relevant Competent Authorities or the future Infrastructure Manager and Railway Undertaking, where such activities are necessary to demonstrate compliance with the Contract or to obtain statutory approvals, authorisations or acceptance for entry into service.

The Contractor shall not be entitled to any extension of time, additional payment, variation or other compensation arising from the performance of such additional activities where they are reasonably required to achieve the intended functionality, safety, interoperability, reliability, maintainability, statutory compliance or contractual completeness of the Works.

The Contract Price shall be deemed to include all labour, supervision, engineering services, temporary works, specialist personnel, test equipment, measuring instruments, software tools, licences, utilities, consumables, spare parts, calibration, documentation, reports, training, re-testing, corrective actions and any other resources necessary to successfully complete all Testing,

Confidential

Commissioning, Trial Running, Trial Operations, Reliability Demonstration, Handover and Final Acceptance of the Works, whether expressly stated in this Employer's Requirements or reasonably inferred as being necessary for the proper execution and completion of the Contract.

## 10.2. Testing Philosophy

### 10.2.1 General

The Testing Philosophy defines the fundamental engineering approach to be adopted by the Contractor for the planning, execution and control of all Testing, Commissioning and Trial Operations activities. The philosophy is based on a structured systems engineering approach and shall ensure full compliance with the Contract requirements, applicable standards, RAMS objectives and safety obligations.

The Contractor shall adopt a rigorous, traceable and verifiable testing methodology consistent with the V-model of systems engineering, ensuring that each stage of verification and validation is directly linked to corresponding design, implementation and requirements definition activities.

### 10.2.2 Systems Engineering and V-Model Approach

Testing and Commissioning shall be implemented in accordance with the V-model systems engineering lifecycle. The left side of the V-model shall represent the decomposition of requirements, design development and implementation, while the right side shall represent verification, validation and acceptance activities.

Each level of system decomposition shall have a corresponding level of verification, as follows:

- User and operational requirements shall be validated through Trial Operations;
- System requirements shall be verified through Integrated System Testing;
- Subsystem requirements shall be verified through Subsystem Testing;
- Equipment and component requirements shall be verified through Factory Acceptance Tests (FAT) and Site Acceptance Tests (SAT).

The Contractor shall ensure full traceability between requirements, design documentation, test specifications and test results throughout the entire lifecycle of the Works.

No system, subsystem or component shall be considered complete unless all associated verification and validation activities have been successfully completed and documented.

### 10.2.3 Testing Hierarchy and Sequence

Testing shall be executed in a structured sequence reflecting increasing levels of system integration and operational realism. The minimum testing hierarchy shall be as follows:

1. Design Verification and Review
2. Factory Acceptance Testing (FAT)
3. Factory Integration Testing (FIT), where applicable
4. Delivery and Installation Verification
5. Site Acceptance Testing (SAT)
6. Pre-Commissioning Activities
7. Static Testing
8. Dynamic Testing
9. Subsystem Testing
10. System Integration Testing

Confidential

11. Operational Scenario Testing
12. Emergency Scenario Testing
13. System demonstration tests.
14. Trial Running
15. Trial Operations
16. Reliability Demonstration
17. Final Acceptance

The Contractor shall ensure that progression between stages is strictly controlled and subject to formal completion of all prerequisite requirements.
No stage shall commence without formal confirmation that all preceding stages have been successfully completed, unless otherwise approved in writing by the Employer.

### 10.2.4 Witness and Hold Point Strategy

The Contractor shall implement a structured Witness and Hold Point system to ensure appropriate Employer involvement in critical Testing and Commissioning activities.
**Hold Points** represent mandatory control points beyond which no further activity may proceed without the Employer's written approval. Hold Points shall typically apply to safety-critical systems, system integration activities, commissioning of energised systems, signalling systems, traction power systems and other high-risk activities.
**Witness Points** represent inspection or observation points at which the Employer has the right to attend Testing and Commissioning activities. Where the Employer elects not to attend a Witness Point after proper notification, the Contractor may proceed with the activity provided all prerequisites have been satisfied.
The Contractor shall prepare and maintain a comprehensive Witness and Hold Point Register, which shall be submitted for Employer approval prior to commencement of Testing and Commissioning activities.
Failure to comply with Witness and Hold Point requirements shall constitute a contractual non-conformance and may result in rejection and repetition of the affected tests at the Contractor's cost.

### 10.2.5 Safety Validation Approach

Safety validation shall be an integral part of all Testing and Commissioning activities. The Contractor shall demonstrate that all safety-related systems comply with applicable Safety Integrity Level (SIL) requirements and that all hazards identified in the hazard log have been adequately controlled or mitigated.
Safety validation shall include, as a minimum:

- Verification of fail-safe principles;
- Validation of emergency operating modes;
- Verification of safety interlocks and protective functions;
- Demonstration of emergency shutdown and isolation procedures;
- Validation of fire and life safety system performance;
- Verification of degraded and abnormal operation modes;
- Confirmation of safe recovery procedures.

The Contractor shall ensure full compliance with EN 50126, EN 50128 and EN 50129 requirements throughout the safety validation process. All safety validation activities shall be coordinated with the Independent Safety Assessor (ISA) and relevant regulatory authorities.
No system shall be accepted into Trial Operations unless all safety validation activities have been successfully completed and endorsed by the ISA where applicable.

### 10.2.6 RAMS Verification Approach

The Contractor shall ensure that all Testing and Commissioning activities support the verification and demonstration of RAMS requirements, including Reliability, Availability, Maintainability and Safety performance.
RAMS verification shall include:

- Demonstration of system availability under operational conditions;
- Measurement and analysis of failure rates during testing phases;
- Verification of maintainability through maintenance simulations and interventions;
- Confirmation of redundancy and fault tolerance performance;
- Assessment of system recovery times following failures;
- Validation of diagnostic and condition monitoring systems.

The Contractor shall ensure that RAMS data collected during Testing, Trial Running and Trial Operations is complete, accurate and traceable, and shall be used to support final acceptance and operational readiness certification.
Failure to achieve RAMS targets shall require corrective actions, re-testing and extension of Trial Operations if necessary.

### 10.2.7 Software and Configuration Control Approach

All software, firmware, configuration data and parameter settings shall be subject to strict configuration management throughout the Testing and Commissioning process. The Contractor shall ensure that:

- All software versions are uniquely identified and controlled;
- Configuration baselines are established prior to testing;
- Any modification is subject to formal change control procedures;
- All changes are fully documented, reviewed and approved prior to implementation;
- Testing is performed only on approved and recorded configurations.

No system shall be accepted if configuration traceability cannot be demonstrated.
The Contractor shall maintain a complete configuration management database covering all systems, subsystems, software versions, hardware configurations and interface parameters.
Cybersecurity controls shall be verified during Testing and Commissioning, including access control, authentication, data integrity, network segregation and system resilience against cyber threats.

### 10.2.8 Interface Testing Philosophy

Interface testing shall be a fundamental element of the Testing and Commissioning strategy. The Contractor shall ensure that all interfaces between systems are fully identified, documented, tested and validated.
Interface testing shall include, but not be limited to:

- Electrical interfaces (power supply, earthing, bonding);

- Mechanical interfaces (physical connections and structural integration);
- Software interfaces (data exchange, protocols, APIs);
- Communication interfaces (SCADA, signalling, telecoms networks);
- Operational interfaces (control centres, operator workstations);
- Safety interfaces (fire systems, emergency systems, signalling interlocks).

The Contractor shall prepare and maintain an Interface Test Plan covering all inter-system interactions. No integrated system shall be accepted until all defined interfaces have been successfully tested under normal, degraded and emergency conditions.
Interface failures shall be treated as system-level defects and shall require full root cause analysis and re-validation of affected systems.
The Contractor shall ensure that interface testing is conducted progressively, starting from subsystem-level interfaces through to full system integration and operational scenario validation.

**10.2.9 Summary Principle**

The overarching principle of the Testing Philosophy is that no system shall be considered complete, safe or operational until it has been fully verified, validated and demonstrated under conditions representative of real railway operation, including normal, degraded, emergency and recovery scenarios.
The Contractor shall ensure that Testing, Commissioning and Trial Operations are executed as an integrated, traceable and safety-driven engineering process, fully aligned with the V-model lifecycle and RAMS-based system assurance principles.

## 10.3. Testing Stages Overview

This Chapter defines the mandatory sequence, minimum requirements and acceptance principles for all Testing, Commissioning and Trial Operations activities. The Contractor shall ensure that all testing stages are executed in a structured, progressive and fully documented manner in accordance with the Testing Philosophy defined in Chapter 2.
No system, subsystem or integrated railway function shall be considered complete unless all applicable testing stages have been successfully executed, verified and accepted in accordance with the Contract.

### 10.3.1 Factory Acceptance Testing (FAT)

Factory Acceptance Testing (FAT) shall be conducted at the manufacturer's premises prior to delivery of equipment to Site. The purpose of FAT is to verify that each item of equipment or system complies with the functional, technical, performance and safety requirements specified in the Contract.
FAT shall include, as a minimum:

- Verification of design compliance against approved specifications;
- Functional testing of individual components and assemblies;
- Verification of software functionality and version control;
- Verification of protection, interlocking and safety functions;
- Performance testing under simulated operating conditions;
- Verification of diagnostic and monitoring functions;

- Verification of communication interfaces where applicable;
- Inspection of manufacturing quality and workmanship;
- Verification of calibration of measuring instruments;
- Review of documentation, manuals and configuration records.

The Contractor shall ensure that all FAT procedures are submitted to the Employer for review prior to execution. The Employer shall have the right to witness any FAT activity.
No equipment shall be shipped to Site without successful completion and formal acceptance of FAT, unless otherwise approved in writing by the Employer.

**10.3.2 Site Acceptance Testing (SAT)**
Site Acceptance Testing (SAT) shall be conducted after installation of equipment at Site to verify correct installation, configuration and readiness for commissioning.
SAT shall include, as a minimum:

- Verification of correct installation in accordance with design documentation;
- Mechanical and electrical inspection of installed systems;
- Continuity, insulation and earthing tests where applicable;
- Verification of communication links and network connectivity;
- Functional testing of individual systems under site conditions;
- Verification of software installation and configuration;
- Verification of safety interlocks and protective devices;
- Verification of integration readiness with other systems.

The Contractor shall ensure that all SAT activities are fully documented and witnessed in accordance with the approved Witness and Hold Point strategy.
No system shall proceed to commissioning without successful completion of SAT.

**10.3.3 Static Testing**
Static Testing shall be performed to verify the correct installation, configuration and basic functionality of systems without dynamic or operational loading conditions.
Static Testing shall include:

- Point-to-point verification of electrical circuits;
- Verification of signalling logic and control functions;
- Verification of SCADA monitoring and control functions;
- Verification of fire detection and alarm system operation;
- Verification of telecommunications and data transmission systems;
- Verification of HVAC, lighting and auxiliary systems;
- Verification of software logic and configuration parameters;
- Verification of safety systems under non-operational conditions.

Static Testing shall ensure that all systems are correctly installed and ready for energisation and dynamic operation.

**10.3.4 Dynamic Testing**

Dynamic Testing shall be performed under operational or near-operational conditions to verify system behaviour under load, movement or real-time operation.
Dynamic Testing shall include:

- Energised operation of traction power systems;
- Movement of rolling stock under controlled conditions;
- Operation of signalling systems under train movements;
- Verification of platform screen door synchronisation;
- Operation of tunnel ventilation under airflow conditions;
- Verification of emergency braking and protection systems;
- Real-time SCADA monitoring under system load;
- Verification of communication systems under operational traffic.

Dynamic Testing shall demonstrate the correct interaction of systems under realistic railway operating conditions.

### 10.3.5 Integrated System Testing

Integrated System Testing (IST) shall demonstrate the correct interaction and performance of all subsystems operating together as a complete railway system.
IST shall include, as a minimum:

- End-to-end train operation scenarios;
- Interaction between signalling, traction power and rolling stock systems;
- SCADA integration across all subsystems;
- Fire detection and emergency response integration;
- Passenger information and communication system integration;
- Tunnel and station systems coordination;
- Power supply failure and recovery scenarios;
- Communication failure and redundancy scenarios;
- Multi-system alarm and event coordination;
- Central control room operational scenarios.

Integrated System Testing shall be performed under controlled conditions representing realistic operational scenarios, including normal, degraded and failure conditions.
No subsystem shall be accepted for Trial Running unless all Integrated System Testing activities have been successfully completed.

### 10.3.6 System Demonstration Tests

Following successful completion of Integrated System Testing, the Contractor shall conduct System Demonstration Tests in the presence of the Employer prior to commencement of Trial Running. System Demonstration Tests shall constitute a full stress-test of the integrated railway

system under conditions representative of normal, degraded and emergency operations and shall demonstrate to the Employer's satisfaction that the system is ready to enter Trial Running. The detailed requirements for System Demonstration Tests are set out in Annex P.

### 10.3.7 Trial Running

Trial Running shall consist of continuous or scheduled railway operation under conditions representative of normal service, without passengers, for the purpose of validating system performance, operational readiness and integration stability.

During Trial Running, the Contractor shall demonstrate:

- Stable operation of all railway systems under repeated cycles;
- Compliance with timetable and operational scenarios;
- Correct interaction between all subsystems;
- Reliability of signalling, traction power and control systems;
- Correct operation of emergency and degraded modes;
- Stability of communication and SCADA systems;
- Absence of critical system failures affecting operation.

Trial Running shall be conducted over a duration specified in the Contract and may be extended by the Employer if performance criteria are not fully achieved.

### 10.3.8 Trial Operations

Trial Operations shall consist of operation of the railway system under conditions closely simulating full commercial passenger service.

During Trial Operations, the Contractor shall demonstrate:

- Full operational readiness of all systems;
- Compliance with operational performance requirements;
- Achievement of RAM targets (Reliability, Availability, Maintainability);
- Safe operation under normal and abnormal conditions;
- Effective emergency response capability;
- Full integration of operational staff, procedures and systems;
- Stability of passenger-facing systems (where applicable).

Trial Operations shall be used as the final validation phase prior to acceptance of the Works for passenger service.

Any failure affecting safety, system availability or operational performance shall require immediate corrective action and repetition of affected Trial Operations activities.

### 10.3.9 Acceptance Sequence

The acceptance of the Works shall follow a structured and progressive sequence based on successful completion of all preceding Testing and Commissioning stages.

The minimum acceptance sequence shall be as follows:

1. Successful completion of Factory Acceptance Testing (FAT)
2. Successful completion of Site Acceptance Testing (SAT)
3. Completion of Installation Verification
4. Completion of Static Testing

Confidential

5. Completion of Dynamic Testing
6. Completion of Integrated System Testing
7. Completion of Trial Running
8. Completion of Trial Operations
9. Demonstration of RAMS requirements compliance
10. Closure of all Category 1 and Category 2 defects
11. Submission and acceptance of all Testing and Commissioning documentation
12. Employer's Taking-Over Certificate

No stage of acceptance shall be deemed achieved unless all preceding stages have been completed and formally accepted in writing by the Employer.
The Employer reserves the right to require repetition of any testing stage where evidence of compliance is deemed insufficient, incomplete or not representative of actual system performance.
The Contractor shall remain fully responsible for the Works until Final Acceptance has been granted in accordance with the Contract.

### 10.4. System Integration Testing and Operational Scenarios

This Chapter defines the mandatory system integration testing requirements and operational scenario demonstrations to be executed by the Contractor. The objective is to verify that all railway subsystems operate safely, reliably and in a fully coordinated manner under normal, degraded, failure and emergency conditions.
System Integration Testing shall demonstrate not only correct functional operation, but also the safe behaviour of the railway system under all foreseeable operational and fault conditions.
All scenarios defined in this Chapter shall be tested under controlled conditions and shall be witnessed in accordance with the Employer's requirements, the Independent Safety Assessor (ISA) requirements, and applicable regulatory obligations.

#### 10.4.1 Fail-Safe Scenarios

The Contractor shall demonstrate that all safety-related systems operate on a fail-safe principle, ensuring that any detected fault, loss of power, communication failure or system malfunction results in a safe state.
Fail-safe scenario testing shall include, as a minimum:

- Loss of signalling control and safe train stopping behaviour;
- Activation of emergency braking systems upon system fault detection;
- Default safe states for interlocking and route setting systems;
- Safe response of platform screen doors in failure mode;
- Safe shutdown of traction power systems under fault conditions;
- Safe fallback operation of critical control systems.

The Contractor shall demonstrate that no single failure leads to an unsafe condition and that all safety-critical functions revert to a predefined safe state.

#### 10.4.2 Fire Scenarios

Fire scenario testing shall demonstrate the coordinated response of all relevant subsystems under fire conditions within stations, tunnels, technical rooms and other railway facilities.
Fire scenario testing shall include:

- Detection of fire by automatic fire detection systems;
- Activation of fire alarm and public warning systems;
- Automatic triggering of smoke extraction and ventilation systems;
- Interface between fire systems and signalling systems for train control;
- Isolation of traction power systems where required;
- Operation of emergency lighting and evacuation signage systems;
- Coordination with passenger information and communication systems.

The Contractor shall demonstrate that fire detection results in a controlled and safe system response supporting safe evacuation and emergency management.

**10.4.3 Energy Loss Scenarios**

Energy loss scenarios shall demonstrate system behaviour under complete or partial loss of electrical power supply, including traction power and auxiliary power systems.
Energy loss testing shall include:

- Complete loss of traction power supply;
- Partial power loss in selected sections of the network;
- Activation of UPS-backed critical systems;
- Safe shutdown and restart procedures;
- Emergency lighting and communication system operation;
- Restoration of power supply and system recovery procedures.

The Contractor shall demonstrate that all critical safety functions remain operational or transition to safe states during power loss conditions.

**10.4.4 SCADA Failure Scenarios**

SCADA failure scenarios shall demonstrate system resilience and safe operation in the event of failure of the central control and monitoring system.
SCADA failure testing shall include:

- Loss of SCADA communication with field equipment;
- Failure of central control room SCADA servers;
- Network communication disruption between subsystems;
- Transition to local or manual control modes;

- Safe monitoring and control of critical systems under degraded conditions;
- Recovery of SCADA functionality and system re-synchronisation.

The Contractor shall demonstrate that loss of SCADA does not compromise safety or result in uncontrolled system behaviour.

**10.4.5 Signalling Degradation Scenarios**

Signalling degradation scenarios shall demonstrate the safe operation of train control systems under partial or complete degradation of signalling functionality.

Signalling degradation testing shall include:

- Failure of interlocking systems;
- Loss of trackside detection systems;
- Communication-based signalling degradation (where applicable);
- Transition to restricted speed or degraded operation modes;
- Safe train separation under degraded signalling conditions;
- Restoration of normal signalling operation.

The Contractor shall ensure that all degraded modes maintain safe train separation and prevent conflicting movements.

**10.4.6 Platform Screen Door (PSD) – Train Interface Scenarios**

PSD–train interface scenarios shall demonstrate correct coordination between platform screen doors and train operations under all operational conditions.

PSD interface testing shall include:

- Synchronised opening and closing of PSD and train doors;
- Failure of train door or PSD door interlock conditions;
- Misalignment detection between train and platform doors;
- Emergency opening of PSD systems;
- Safe handling of PSD communication failure with signalling systems;
- Prevention of train departure with open or obstructed PSD conditions.

The Contractor shall demonstrate that PSD systems operate in full coordination with train control systems to ensure passenger safety at all times.

**10.4.7 Tunnel Emergency Ventilation Scenarios**

Tunnel emergency ventilation scenarios shall demonstrate the performance of ventilation systems under emergency conditions, including fire and smoke propagation scenarios.

Tunnel ventilation testing shall include:

- Activation of emergency ventilation modes during fire scenarios;

- Directional smoke control and extraction performance;
- Coordination between fire detection and ventilation control systems;
- Airflow management for passenger evacuation routes;
- Operation under partial ventilation system failure;
- Interface with SCADA and fire control systems.

The Contractor shall demonstrate that tunnel ventilation systems maintain safe conditions for evacuation and emergency response operations.

**10.4.8 Evacuation Scenarios**

Evacuation scenario testing shall demonstrate the ability of the railway system to support safe and efficient evacuation of passengers and operational staff under emergency conditions.

Evacuation testing shall include:

- Activation of emergency communication and public address systems;
- Operation of emergency lighting and evacuation signage;
- Coordination between fire systems, signalling and access control systems;
- Safe opening of emergency exits, gates and evacuation routes;
- Passenger flow management under emergency conditions;
- Coordination with emergency services response procedures.

The Contractor shall demonstrate that evacuation routes remain safe, accessible and clearly indicated under all defined emergency scenarios.

**10.4.9 General Integration Requirement**

The Contractor shall ensure that all operational scenarios defined in this Chapter are executed as fully integrated system tests involving all relevant subsystems, including but not limited to signalling, traction power, SCADA, telecommunications, fire detection and suppression systems, HVAC, PSD systems, passenger information systems and emergency systems.

All scenarios shall be demonstrated under realistic operational conditions and shall be fully documented, witnessed and validated in accordance with the Contract requirements.

No system shall be accepted for Trial Operations unless all applicable operational scenarios have been successfully demonstrated and approved by the Employer and relevant safety authorities.

The Contractor shall ensure that system integration testing provides full evidence of safe system behaviour under all normal, degraded, failure and emergency conditions.

The Contractor shall conduct Interface Acceptance Tests with adjacent Lot contractors and the Package 2 Signalling and Telecommunication contractor to verify correct operation at all contractual interface points, in accordance with the interface coordination framework in Chapter 4 and Annex P.

**10.5. Trial Running and Trial Operations Requirements**

This Chapter defines the detailed requirements for Trial Running and Trial Operations activities, which constitute the final validation phases prior to acceptance of the railway system for commercial service.
The purpose of these phases is to demonstrate that the fully integrated railway system is capable of sustained, safe, reliable and efficient operation under realistic operational conditions, including normal service, degraded operation and failure scenarios.

### 10.5.1 Daily Operation Scenarios

During Trial Running and Trial Operations, the Contractor shall execute daily operation scenarios simulating real-life railway operations.
Daily operation scenarios shall include:

- Full timetable-based train operations;
- Peak and off-peak service simulations;
- Station dwell time operations;
- Turnback and terminal operations;
- Depot entry and exit operations;
- Planned maintenance windows;
- Operational interruptions and recovery procedures.

The Contractor shall demonstrate that all systems function consistently under continuous daily operational cycles without degradation of safety, performance or reliability.

### 10.5.2 Timetable Simulation

The Contractor shall perform timetable-based simulation of railway operations using realistic service schedules representative of planned commercial operations.
Timetable simulation shall include:

- Peak-hour service density simulations;
- Minimum headway operation scenarios;
- Schedule recovery following delays;
- Coordination of multiple train movements across the network;
- Interaction with signalling, traction power and control systems;
- Platform and station operational capacity validation.

The Contractor shall demonstrate that the railway system is capable of meeting the required operational capacity and timetable adherence targets under all defined operational conditions.

### 10.5.3 Performance Key Performance Indicators (KPIs)

The Contractor shall demonstrate compliance with all operational performance KPIs defined in the Contract during Trial Running and Trial Operations.

Performance KPIs shall include, as a minimum:

- Service punctuality and timetable adherence;
- System availability and operational uptime;
- Train service reliability and failure rates;
- Mean time between failures (MTBF);
- Mean time to repair (MTTR);
- Passenger system functionality (where applicable);
- Energy efficiency and system performance metrics.

The Contractor shall continuously monitor, record and report all KPI data throughout the Trial Operations period. Failure to achieve required KPI thresholds shall result in corrective actions and extension of Trial Operations if necessary.

### 10.5.4 Reliability Demonstration

The Contractor shall conduct reliability demonstration activities to verify that all systems achieve the required reliability levels under operational conditions.
Reliability demonstration shall include:

- Continuous operation of railway systems over defined operational periods;
- Recording and analysis of all system failures;
- Identification of failure trends and root causes;
- Verification of redundancy and fault tolerance mechanisms;
- Demonstration of stable performance under repeated operational cycles.

The Contractor shall ensure that no critical system failure affecting safety or core operations occurs during the reliability demonstration period, or that such failures are appropriately addressed and rectified.

### 10.5.5 Delay and Failure Handling

The Contractor shall demonstrate the ability of the railway system and operational staff to effectively manage delays, failures and disruptions during Trial Running and Trial Operations.
Delay and failure handling scenarios shall include:

- Train delays due to system faults or operational constraints;
- Recovery of timetable following disruption events;
- Equipment failures affecting signalling, traction power or communication systems;
- Emergency operational procedures;
- Re-routing or service adjustment scenarios;

- Coordination between control centre and field operations.

The Contractor shall demonstrate that the system can safely recover from disruptions while maintaining operational continuity and minimizing impact on service performance.

### 10.5.6 Operator Training Validation

The Contractor shall validate the effectiveness of all operator training programmes during Trial Running and Trial Operations.
Operator training validation shall include:

- Verification of competence of control room operators;
- Validation of station staff operational readiness;
- Assessment of emergency response capabilities;
- Hands-on operation under real-time conditions;
- Execution of operational procedures and safety protocols;
- Fault response and recovery training validation.

The Contractor shall ensure that all operational personnel demonstrate sufficient competence to safely operate and maintain the railway system prior to Final Acceptance.

### 10.5.7 Passenger Readiness Criteria

The Contractor shall demonstrate that the railway system is fully prepared for safe and efficient passenger service prior to Final Acceptance.
Passenger readiness criteria shall include:

- Full functionality of passenger information systems;
- Operational readiness of ticketing and access control systems (where applicable);
- Safe operation of platform screen doors and access systems;
- Functionality of emergency communication and evacuation systems;
- Station environmental systems (lighting, HVAC, ventilation);
- Accessibility compliance for persons with reduced mobility (PRM);
- Operational readiness of customer-facing systems and interfaces.

The Contractor shall ensure that all passenger-related systems are fully integrated, tested and validated under operational conditions before commencement of commercial service.

### 10.5.8 General Requirement for Trial Phases

The Contractor shall ensure that Trial Running and Trial Operations are conducted as fully integrated, end-to-end operational simulations of the railway system.
All activities shall be executed under conditions representative of actual commercial service, including normal, peak, degraded and emergency operations.

No system shall be accepted for Final Acceptance unless all Trial Running and Trial Operations requirements have been successfully completed and all performance, safety and reliability criteria have been demonstrated to the satisfaction of the Employer and relevant regulatory authorities. The Contractor shall remain fully responsible for the Works throughout the entire Trial Operations period and until Final Acceptance has been formally granted.

Confidential

## 10.6. Acceptance and Completion Requirements

This Chapter defines the requirements, criteria and procedural conditions for Provisional Acceptance, Final Acceptance and Contractual Completion of the Works, including all obligations relating to documentation, RAMS performance, configuration management and handover requirements.

No acceptance shall be deemed effective unless all requirements defined in this Chapter have been fully satisfied and formally confirmed in writing by the Employer.

### 10.6.1 Provisional Acceptance

Provisional Acceptance shall be granted when the Contractor has successfully demonstrated that the Works are substantially complete and capable of safe and reliable operation under Trial Operations conditions.

Provisional Acceptance shall be subject to, as a minimum:

- Successful completion of all Testing and Commissioning activities;
- Successful completion of Trial Running and Trial Operations;
- Demonstration of compliance with all safety requirements;
- Closure or agreed mitigation of all Category 1 (Critical) defects;
- Closure or Employer-accepted management plan for Category 2 (Major) defects;
- Submission of all required testing and commissioning documentation;
- Demonstration of system integration across all subsystems.

Upon achievement of the above requirements, the Employer may issue a Provisional Acceptance Certificate confirming that the Works are fit for limited operational use under defined conditions.

### 10.6.2 Taking-Over Certificate

The Taking-Over Certificate shall be issued by the Employer to confirm formal transfer of responsibility for operation and maintenance of the Works to the Railway Operator or designated entity.

The issuance of the Taking-Over Certificate shall require:

- Completion of Trial Operations with satisfactory performance results;
- Confirmation of operational readiness of all systems;
- Acceptance of RAMS performance demonstration results;
- Completion of safety validation and ISA endorsement where applicable;
- Availability of trained operational and maintenance personnel;
- Availability of approved Operation and Maintenance procedures.

Upon issuance of the Taking-Over Certificate, operational responsibility for the railway system shall transfer in accordance with the Contract provisions, without prejudice to the Contractor's remaining obligations during the Defects Liability Period.

Confidential

### 10.6.3 Final Acceptance

Final Acceptance shall be granted when all contractual obligations of the Contractor have been fully satisfied, including the completion of all remedial works, defect rectification and outstanding documentation requirements.

Final Acceptance shall require:

- Closure of all outstanding defects, including Category 2 and Category 3 defects;
- Completion of all outstanding corrective works and punch list items;
- Successful completion of reliability demonstration requirements;
- Confirmation of sustained RAMS performance compliance;
- Submission and acceptance of all final documentation deliverables;
- Completion of all contractual training obligations;
- Final validation of system configuration and as-built records.

Upon Final Acceptance, the Contractor shall be released from further obligations under the Contract, except for any surviving warranties or legal obligations.

### 10.6.4 Defects Liability Period

The Defects Liability Period (DLP) shall commence upon issuance of the Taking-Over Certificate and shall continue for the period defined in the Contract.

During the Defects Liability Period, the Contractor shall remain responsible for:

- Rectification of all defects arising from design, materials, workmanship or installation;
- Correction of software faults and configuration errors;
- Maintenance of system performance and reliability;
- Response to operational failures affecting system integrity;
- Support for emergency interventions where required.

All defects identified during the Defects Liability Period shall be rectified by the Contractor at no additional cost to the Employer, unless otherwise specified in the Contract.

The Contractor shall maintain sufficient technical and engineering support resources throughout the Defects Liability Period to ensure timely resolution of all defects.

### 10.6.5 RAMS Acceptance Thresholds

The Works shall only be accepted where the required RAMS (Reliability, Availability, Maintainability and Safety) performance thresholds have been demonstrated during Trial Operations and reliability demonstration activities.

RAMS acceptance shall include, as a minimum:

- Achievement of minimum system availability targets;
- Achievement of defined Mean Time Between Failures (MTBF);

- Achievement of defined Mean Time To Repair (MTTR);
- Demonstration of safe failure modes and fault tolerance;
- Verification of maintainability performance within defined limits;
- Confirmation that no safety-critical system failures remain unresolved.

Failure to achieve RAMS thresholds shall require corrective actions, additional testing and possible extension of Trial Operations until compliance is demonstrated.

### 10.6.6 Documentation Handover Requirements

The Contractor shall provide complete and final documentation handover prior to Final Acceptance.
Documentation handover shall include, as a minimum:

- Final Testing and Commissioning Dossiers;
- Complete test reports and results;
- Operation and Maintenance manuals;
- Maintenance schedules and procedures;
- Spare parts lists and catalogues;
- Training records and certification documentation;
- Safety validation reports and ISA approvals;
- RAMS analysis and verification reports;
- Configuration management records;
- Software documentation and version control records;
- Asset registers and equipment inventories.

All documentation shall be provided in both hard copy and electronic formats, fully indexed, traceable and approved by the Employer.

### 10.6.7 As-Built and Configuration Baseline

The Contractor shall produce complete and accurate as-built documentation reflecting the final installed condition of all systems, subsystems and components.
As-built documentation shall include:

- Updated engineering drawings reflecting actual installation;
- Final system architecture and interface diagrams;
- Electrical, mechanical and civil as-built records;
- Software configuration and version records;

- Communication and network architecture details;
- Final parameter settings and calibration records.

A formal Configuration Baseline shall be established at the point of Final Acceptance, capturing the exact system configuration under which acceptance was achieved.
The Contractor shall ensure full traceability between design baseline, construction records, testing records and final as-built configuration.
Any deviation between design and as-built condition shall be formally documented, assessed and approved by the Employer prior to Final Acceptance.

### 10.6.8 Completion Principle

Completion of the Works shall only be considered achieved when all requirements of this Chapter, together with all preceding Testing, Commissioning and Trial Operations requirements, have been fully satisfied.
The Contractor shall remain fully responsible for the Works until Final Acceptance has been formally granted in accordance with the Contract.
No partial acceptance, operational use or Employer approval shall relieve the Contractor of its obligations unless expressly stated in the Contract.

## 10.7. Electrical Systems

### 10.7.1 General Requirements

This Section defines the requirements for the design, supply, installation, testing, commissioning, energization and acceptance of all Electrical Systems forming part of the railway infrastructure. The Electrical Systems shall include, but not be limited to, MV/HV/LV distribution networks, traction power supply systems, overhead contact systems, substations, transformers, earthing and bonding systems, UPS systems, generator system, lighting systems, power quality systems and associated protection and control systems.
Testing and commissioning activities for systems not specifically covered by this document or by Annex P – Testing and Commissioning Specifications, but deemed necessary by the Administration or the Engineer, shall also be carried out by the Contractor at no additional cost to the Employer.
All Electrical Systems shall be designed and tested in accordance with applicable EN, IEC and TSI requirements and shall ensure safe, reliable and uninterrupted operation of the railway system under all operating conditions.

### 10.7.2 MV / HV / LV Distribution Systems

The Contractor shall be responsible for the complete design, supply, installation and testing of Medium Voltage (MV), High Voltage (HV) and Low Voltage (LV) distribution systems.
The systems shall ensure:

- Safe and reliable power distribution across all railway facilities;
- Full selectivity and coordination of protection devices;
- Redundancy where required for critical loads;
- Segregation between traction and non-traction power systems;

- Compliance with IEC 60364, IEC 61936 and applicable national regulations.

Testing requirements shall include insulation resistance tests, continuity tests, protection coordination studies, switchgear functional tests and full energisation verification under controlled conditions.

**10.7.3 Traction Power Supply System (TPSS)**

The Traction Power Supply System (TPSS) shall provide continuous and reliable electrical power for railway traction operations under all defined operational conditions.
The Contractor shall ensure:

- Design compliance with load demand and operational scenarios;
- Redundant feeding arrangements where specified;
- Integration with SCADA and control systems;
- Safe fault isolation and sectionalising capability;
- Compliance with EN 50388 and relevant traction power standards.

Testing shall include load testing, short-circuit simulations, protection relay coordination, energisation sequences and system stability verification under dynamic train operation conditions.

**10.7.4 Overhead Contact System (OCS) / Catenary System**

The Overhead Contact System (OCS) shall be designed to ensure safe and uninterrupted power supply to rolling stock under all operational speeds and environmental conditions.
The Contractor shall ensure:

- Mechanical and electrical compliance with EN 50119;
- Correct tensioning and alignment of catenary systems;
- Thermal and dynamic performance under train passage;
- Integration with traction power supply and protection systems;
- Safe isolation and sectionalisation capability.

Testing shall include geometric alignment verification, contact wire height and stagger measurements, pantograph interaction testing and dynamic energised testing under train operation conditions.

**10.7.5 Transformers & Substations**

All transformers and substations shall be designed to ensure safe, efficient and reliable transformation and distribution of electrical energy.
The Contractor shall ensure:

- Compliance with IEC 60076 and applicable standards;
- Adequate thermal performance and cooling systems;
- Protection against overload, short circuit and fault conditions;

- Integration with SCADA monitoring systems;
- Provision of redundancy for critical supply points.

Testing shall include factory acceptance testing of transformers, oil tests (where applicable), dielectric strength tests, functional testing of switchgear, and energisation under controlled conditions.

### 10.7.6 Earthing and Bonding Systems

The earthing and bonding system shall ensure safety of personnel, equipment protection and proper fault current dissipation.
The Contractor shall ensure:

- Compliance with IEC 60364-5-54 and EN 50122 series;
- Continuous equipotential bonding across all railway infrastructure;
- Proper integration with signalling and telecommunications systems to avoid interference;
- Low resistance earthing network design.

Testing shall include earth resistance measurements, continuity tests, step and touch voltage verification, and fault current dissipation analysis under simulated fault conditions.

### 10.7.7 Uninterruptible Power Supply (UPS) Systems

UPS systems shall provide continuous power supply to critical railway systems including signalling, SCADA, communication, fire detection and safety systems.
The Contractor shall ensure:

- Battery autonomy as per operational requirements;
- Seamless transition during power failure;
- Redundant UPS architecture for critical loads;
- Monitoring and alarm integration with SCADA systems.

Testing shall include load bank testing, autonomy duration testing, transfer time verification, and failure simulation tests.

### 10.7.8 Lighting Systems

Lighting systems shall ensure safe visibility in all railway environments including stations, tunnels, technical rooms and external facilities.
The Contractor shall ensure:

- Compliance with relevant EN lighting standards;
- Emergency lighting operation during power failure;
- Integration with fire and evacuation systems;
- Energy efficient design principles.

Testing shall include illumination level measurements, emergency lighting autonomy tests, switching tests and SCADA integration verification.

### 10.7.9 Power Quality Tests

The Contractor shall ensure that all Electrical Systems maintain acceptable power quality levels to prevent disruption to sensitive railway systems.
Power quality testing shall include:

- Voltage stability and fluctuation analysis;
- Harmonic distortion measurements;
- Frequency stability verification;
- Load balancing analysis;
- Electromagnetic compatibility (EMC) verification.

All results shall comply with applicable EN 50160 standards and system-specific requirements.

### 10.7.10 Load Flow and Fault Analysis Tests

The Contractor shall perform comprehensive load flow and fault analysis studies and validate results through testing where applicable.
Testing shall include:

- Verification of system performance under peak load conditions;
- Simulation and validation of fault current conditions;
- Verification of protection device coordination;
- System stability under single and multiple fault conditions.

The Contractor shall ensure that the system remains safe and operationally stable under all defined fault scenarios.

### 10.7.11 Protection Relay Coordination

Protection systems shall be fully coordinated to ensure selective isolation of faults without affecting unaffected sections of the railway network.
The Contractor shall ensure:

- Proper grading and coordination of all protection relays;
- Fast fault isolation with minimal service disruption;
- Integration with SCADA for real-time monitoring;
- Compliance with IEC 60255 standards.

Testing shall include relay injection tests, coordination verification studies, and end-to-end protection system testing under simulated fault conditions.

### 10.7.12 FAT, SAT and Energisation Procedures

All Electrical Systems shall be subject to structured Factory Acceptance Testing (FAT), Site Acceptance Testing (SAT) and controlled energisation procedures.

**Factory Acceptance Testing (FAT)**

FAT shall verify compliance of equipment at manufacturer premises prior to delivery and shall include functional, electrical and performance testing.

**Site Acceptance Testing (SAT)**

SAT shall verify correct installation, wiring, configuration and readiness for energisation of all Electrical Systems at Site.

**Energisation Procedures**

Energisation shall be executed in a controlled, step-by-step sequence under approved procedures and witnessed by the Employer. Energisation shall only commence upon successful completion of SAT and approval of all safety documentation.

Energisation shall include:

- Pre-energisation safety checks;
- Progressive energisation of system sections;
- Monitoring of load behaviour and system response;
- Verification of protection system performance;
- Final stabilisation and acceptance of energized systems.

No Electrical System shall be energised without formal written approval from the Employer.

### 10.7.13 General Acceptance Requirement

All Electrical Systems shall only be accepted when:

- All FAT and SAT activities have been successfully completed;
- All energisation procedures have been executed without incident;
- All protection systems are fully functional and coordinated;
- All interface systems (SCADA, signalling, fire systems) are fully integrated;
- All safety and RAMS requirements are demonstrated and validated.

The Contractor shall remain fully responsible for the Electrical Systems until Final Acceptance is granted in accordance with the Contract.

## 10.8. Signalling & SCADA Systems

### 10.8.1 General Requirements

This Section defines the minimum requirements for the design, manufacture, software development, installation, integration, testing, commissioning, Trial Operations and acceptance of the complete Signalling and Supervisory Control and Data Acquisition (SCADA) Systems. The Contractor shall provide a complete, fully integrated and interoperable Signalling and SCADA System capable of supporting safe, reliable, maintainable and efficient railway operation throughout the design life of the Project.

The Contractor shall be fully responsible for the design, implementation, verification, validation, testing, safety assurance, cybersecurity, documentation and successful commissioning of all signalling and SCADA equipment, software and interfaces. Testing and commissioning activities for systems not specifically covered by this document or by Annex P – Testing and Commissioning Specifications, but deemed necessary by the Administration or the Engineer, shall also be carried out by the Contractor at no additional cost to the Employer.

The requirements of this Section shall apply to all signalling assets, including but not limited to:

- Interlocking systems;
- Automatic Train Protection (ATP);
- European Train Control System (ETCS), where applicable;
- Train Detection Systems;
- Object Controllers;
- Wayside Equipment;
- Point Machines and Point Detection Systems;
- Trackside Signals (where applicable);
- Axle Counters and/or Track Circuits;
- Platform Screen Door (PSD) interfaces;
- Control Centre Systems;
- SCADA servers and workstations;
- Communication interfaces;
- Time Synchronisation Systems;
- Data Networks supporting signalling functions;
- Maintenance terminals and diagnostic systems.

The Contractor shall ensure complete interoperability between signalling, traction power, telecommunications, platform systems, fire safety systems, tunnel ventilation, passenger information systems and all other railway subsystems.

### 10.8.2 RAMS and Safety Lifecycle Requirements (EN 50126 / EN 50128 / EN 50129)

The Contractor shall implement a complete RAMS lifecycle in accordance with EN 50126 throughout the design, implementation, testing, commissioning and operational validation phases.

The Contractor shall prepare, maintain and obtain approval for the following minimum safety documentation:

- RAMS Management Plan;
- System Definition;
- Hazard Identification Reports;
- Hazard Log;
- Preliminary Hazard Analysis (PHA);
- System Hazard Analysis (SHA);
- Failure Modes, Effects and Criticality Analysis (FMECA);
- Fault Tree Analysis (FTA);
- Common Cause Failure Analysis;
- Software Safety Plan;

Confidential

- Software Verification Plan;
- Validation Plan;
- Safety Case;
- Safety Justification Report.

Software associated with safety-related functions shall be developed in accordance with EN 50128.
The Contractor shall demonstrate compliance with the required Software Safety Integrity Level (SIL) through documented software development, verification and validation activities.
Safety-related hardware shall comply with EN 50129.
The Contractor shall demonstrate:

- Safe system architecture;
- Hardware fault tolerance;
- Safe degradation;
- Fail-safe operation;
- Integrity of safety communications;
- Independence of safety functions;
- Compliance with required Safety Integrity Levels.

The Independent Safety Assessor (ISA) shall be provided with unrestricted access to all safety documentation and testing activities.
No signalling equipment shall be accepted until the ISA has confirmed successful completion of the required safety assessments.

**10.8.3 ETCS / ATP / Interlocking Systems**

The signalling system shall ensure safe train separation, movement authority management and protection against unsafe train movements under all operational conditions.
Where ETCS is specified, the Contractor shall demonstrate compliance with the applicable Technical Specifications for Interoperability (TSI CCS) and relevant ERA requirements. The Contractor shall provide complete testing and validation of:

- Movement Authorities;
- Route Setting;
- Route Locking;
- Route Release;
- Approach Locking;
- Flank Protection;
- Overlap Protection;
- Point Detection;
- Point Locking;
- Train Detection;
- Train Integrity (where applicable);
- Automatic Route Setting;
- Manual Route Setting;
- Emergency Route Cancellation;
- Emergency Point Operation.

ATP testing shall include:

- Overspeed protection;
- Target speed supervision;
- Emergency brake intervention;
- Temporary speed restriction handling;
- Train stop functions;
- Safe train restart procedures.

Interlocking validation shall demonstrate:

- Absence of conflicting routes;
- Correct route release logic;
- Safe response to equipment failures;
- Safe degraded operation;
- Correct interaction with field equipment;
- Safe recovery after power interruption.

Dynamic testing shall be carried out using representative train movements under normal, degraded and emergency operating conditions.

**10.8.4 Platform Screen Door (PSD) Interlocking Logic**

The Contractor shall ensure complete functional integration between Platform Screen Doors (PSD), signalling, train control systems and station operational systems. PSD operation shall be fully interlocked with train position and movement authority. The Contractor shall demonstrate, as a minimum:

- PSD opening only when the train is correctly berthed within the permitted stopping tolerance;
- Prevention of PSD opening in the absence of a correctly positioned train;
- Prevention of train departure while any PSD or train door remains open;
- Safe response to PSD communication failure;
- Safe response to train door failure;
- Emergency door release operation;
- Recovery following communication restoration;
- Platform emergency evacuation mode;
- Manual override functionality with appropriate authorisation.

Integrated testing shall include:

- Normal passenger boarding scenarios;
- Door obstruction scenarios;
- Incorrect train stopping position;
- Train rollback scenarios;
- Communication loss between PSD controller and signalling system;
- Power supply interruption;
- SCADA supervision of PSD status.

The Contractor shall demonstrate that PSD failures cannot create unsafe train movement conditions.

### 10.8.5 SCADA System Requirements

The SCADA System shall provide centralised monitoring, control, alarm management, event recording and operational supervision of all railway infrastructure systems. The SCADA System shall interface with, as a minimum:

- Traction Power Supply System (TPSS);
- HV/MV/LV Distribution;
- UPS Systems;
- Tunnel Ventilation;
- HVAC Systems;
- Fire Detection and Fire Fighting Systems;
- Lighting Systems;
- Water Supply and Drainage Systems;
- Platform Screen Doors;
- Passenger Information Systems;
- Telecommunications Systems;
- Signalling Status Monitoring.

The Contractor shall provide:

- Redundant SCADA Servers;
- Redundant Communication Networks;
- Hot Standby Operation;
- Time Synchronisation;
- Historical Data Logging;
- Event Recording;
- Alarm Prioritisation;
- Operator Workstations;
- Engineering Workstations;
- Remote Maintenance Facilities.

SCADA testing shall include:

- Alarm handling;
- Operator commands;
- Failover testing;
- Server redundancy;
- Database integrity;
- Communication loss recovery;
- Network recovery;
- Time synchronisation;
- Cybersecurity event monitoring.

### 10.8.6 Cybersecurity Requirements

All signalling and SCADA systems shall be designed to protect against unauthorised access, cyber attacks, malware, data corruption and loss of operational integrity. The Contractor shall implement a cybersecurity management framework based upon IEC 62443 and other applicable railway cybersecurity standards.

The Contractor shall provide:

- Secure System Architecture;
- Network Segmentation;
- Secure Authentication;
- Role-Based Access Control;
- Password Management;
- Security Logging;
- Secure Remote Access;
- Encryption of critical communications where applicable;
- Patch Management Procedures;
- Backup and Disaster Recovery Procedures;
- Security Incident Response Procedures.

Cybersecurity testing shall include:

- Vulnerability Assessment;
- Penetration Testing;
- Network Segmentation Verification;
- Access Control Verification;
- Authentication Testing;
- Recovery Following Cyber Incidents;
- Security Logging Validation.

The Employer reserves the right to appoint independent cybersecurity specialists to witness or repeat cybersecurity testing.

### 10.8.7 Fail-Safe Architecture

The signalling system shall employ a fail-safe architecture ensuring that any detected fault results in a predefined safe condition. The Contractor shall demonstrate compliance with fail-safe principles under all operating conditions.

The fail-safe philosophy shall include:

- Safe response to processor failures;
- Safe response to communication failures;
- Safe response to power failures;
- Safe response to data corruption;
- Safe response to field equipment failures;
- Safe response to software faults;
- Safe response to loss of train detection.

The Contractor shall demonstrate that:

- No single failure can result in an unsafe train movement;

- All safety-critical outputs revert to safe states;
- Fault detection is automatic;
- Diagnostic coverage is adequate;
- Recovery procedures maintain system integrity.

Failure injection testing shall be carried out to validate the fail-safe architecture under representative operational conditions.

### 10.8.8 Factory Acceptance Testing (FAT)

The Contractor shall perform comprehensive FAT for all signalling and SCADA equipment prior to shipment. FAT shall include:

- Hardware functionality;
- Software functionality;
- Interface verification;
- Communication protocols;
- Redundancy testing;
- Alarm functions;
- Diagnostic functions;
- Safety functions;
- Configuration verification;
- Cybersecurity baseline verification.

The Employer shall be entitled to witness all FAT activities.

### 10.8.9 Site Acceptance Testing (SAT)

Following installation, SAT shall verify:

- Installation quality;
- Equipment configuration;
- Cable termination;
- Communication integrity;
- Power supplies;
- Functional operation;
- Integration readiness.

No signalling subsystem shall proceed to Integrated System Testing unless SAT has been successfully completed.

### 10.8.10 Integrated System Testing

Integrated System Testing shall demonstrate correct interaction between signalling, SCADA and all interfacing railway systems. Testing shall include:

- Train operation scenarios;
- Emergency scenarios;
- Fire scenarios;

- Power failure scenarios;
- Communication loss scenarios;
- PSD integration;
- Tunnel ventilation interaction;
- Traction power interaction;
- Passenger information coordination.

All integrated testing shall be carried out under both normal and degraded operating conditions.

### 10.8.11 Acceptance Requirements

The Signalling and SCADA Systems shall be accepted only when the Contractor has demonstrated that:

- All FAT and SAT activities have been successfully completed;
- All software has been verified and validated in accordance with EN 50128;
- All safety-related hardware complies with EN 50129;
- The RAMS lifecycle defined by EN 50126 has been successfully completed;
- All Safety Integrity Level (SIL) requirements have been achieved;
- All cybersecurity tests have been successfully completed;
- All fail-safe scenarios have been validated;
- All integrated operational scenarios have been successfully demonstrated;
- The Independent Safety Assessor (ISA) has accepted the Safety Case;
- All as-built documentation, software configuration records, cybersecurity documentation, test reports and operational manuals have been submitted and approved.

No Signalling or SCADA System shall be placed into Trial Operations or commercial service until all acceptance requirements have been satisfied and the Employer has issued formal written approval.

## 10. 9. MEP SYSTEMS

### 10.9.1 General

This Section specifies the minimum requirements for the design verification, installation, testing, commissioning, Trial Operations and acceptance of all Mechanical, Electrical and Plumbing (MEP) Systems associated with railway stations, technical buildings, tunnels, depots and other operational facilities.

The Contractor shall provide a complete, fully integrated and operational MEP system, including all equipment, accessories, control systems, software, interfaces, temporary facilities, labour, tools, consumables and documentation necessary for successful completion of the Works.

Testing and commissioning activities for systems not specifically covered by this document or by Annex P – Testing and Commissioning Specifications, but deemed necessary by the Administration or the Engineer, shall also be carried out by the Contractor at no additional cost to the Employer.

All MEP systems shall comply with the latest applicable editions of the Technical Specifications for Interoperability (TSIs), EN Standards, IEC Standards, NFPA Standards, ISO Standards, national regulations and the Employer's Requirements.

Testing and Commissioning shall demonstrate that each individual system, and the complete integrated station environment, operates safely, reliably and continuously under normal, degraded and emergency operating conditions.

### 10.9.2 Electrical Systems

The Contractor shall design, install, test and commission all station electrical systems, including High Voltage (HV), Medium Voltage (MV), Low Voltage (LV), transformers, switchgear, distribution boards, UPS systems, standby power interfaces, cable installations, earthing and bonding systems.

Testing shall include Factory Acceptance Tests (FAT), Site Acceptance Tests (SAT), insulation resistance measurements, continuity testing, protection relay testing, earth resistance testing, load testing, energisation procedures, power quality measurements, voltage drop verification and functional testing of all electrical equipment.

Electrical systems shall demonstrate safe operation under normal supply conditions, emergency supply conditions and power restoration following total or partial loss of supply.

### 10.9.3 Lighting Systems

The Contractor shall provide normal lighting, emergency lighting, escape route lighting, external lighting and architectural lighting where specified.

Testing shall verify illumination levels, uniformity, emergency operation, battery autonomy, automatic changeover, emergency evacuation lighting, SCADA monitoring and compliance with the applicable EN lighting standards.

### 10.9.4 Fire Detection and Fire Suppression Systems

The Contractor shall provide fully integrated fire detection, fire alarm, fire suppression and smoke management systems.

Testing shall include detector functional tests, alarm verification, cause-and-effect verification, sprinkler and water mist systems, hydrants, hose reels, gaseous extinguishing systems where applicable, fire pumps, valve monitoring, fire water storage, emergency shutdown sequences and interface testing with HVAC, SCADA, signalling, passenger information systems and emergency communication systems.

Fire scenario testing shall demonstrate full compliance with the applicable NFPA Standards, EN Standards and local fire authority requirements.

### 10.9.5 HVAC Systems

Heating, Ventilation and Air Conditioning (HVAC) systems shall maintain the environmental conditions required for passenger comfort, equipment protection and operational reliability.
Testing shall include airflow balancing, temperature control, pressure measurements, smoke control operation, automatic control sequences, emergency ventilation, equipment redundancy, noise measurements, vibration measurements, energy performance verification and Building Management System (BMS) or SCADA integration.

### 10.9.6 Water Supply, Plumbing and Drainage Systems

The Contractor shall provide potable water systems, sanitary plumbing, wastewater systems, stormwater drainage, sump pumps, lifting stations, oil separators where applicable and all associated pipework and equipment.
Testing shall include hydrostatic pressure testing, leakage testing, flow testing, pump performance testing, automatic operation, backup operation, water quality verification, drainage capacity testing and alarm monitoring through SCADA.

### 10.9.7 Vertical Transportation Systems

Elevators, escalators and passenger lifting equipment shall be fully tested and commissioned in accordance with the applicable EN and IEC standards.
Testing shall include operational performance, emergency operation, overload protection, emergency evacuation, fire service mode, accessibility functions, automatic rescue operation, communication systems, power failure operation and interface testing with fire alarm and SCADA systems.

### 10.9.8 Station Systems

The Contractor shall test and commission all station operational systems including CCTV, Public Address (PA), Passenger Information System (PIS), access control systems, automatic fare collection (AFC), ticket gates, clocks, emergency telephones, help points and station communication systems.
Integrated testing shall verify communication with SCADA, signalling, fire alarm systems and station control facilities.
System performance shall be demonstrated under normal, degraded and emergency operating conditions.

### 10.9.9 System Integration Testing

Following completion of subsystem testing, the Contractor shall perform Integrated System Testing (IST) to verify the correct interaction between all MEP systems and interfacing railway systems.
Integrated testing shall include power failure scenarios, fire scenarios, smoke extraction, emergency ventilation, emergency lighting, evacuation procedures, CCTV operation, access control, ticket gates, elevators, escalators, public address announcements, passenger information updates and SCADA monitoring.

Confidential

The Contractor shall demonstrate that all systems operate correctly as a complete integrated station environment.

### 10.9.10 Trial Operations

During Trial Operations, all MEP systems shall operate continuously under representative operational conditions.
The Contractor shall demonstrate system availability, maintainability, reliability, energy performance, operational stability and successful interaction with railway operational systems.
Any failure affecting passenger safety, operational continuity or system availability shall be investigated, rectified and successfully re-tested before acceptance.

### 10.9.11 Documentation and Acceptance

Prior to Provisional Acceptance, the Contractor shall submit complete Testing and Commissioning documentation including approved test procedures, FAT and SAT reports, Integrated System Test reports, commissioning records, calibration certificates, operation and maintenance manuals, training records, RAMS verification documents, software and configuration records, as-built drawings and asset registers.
Final Acceptance shall only be granted when all MEP systems have successfully completed Testing, Commissioning, Integrated System Testing and Trial Operations, all non-conformities have been closed, all contractual performance requirements have been achieved and the Employer has issued formal written acceptance.

### 10.9.12 MEP systems

In addition to the overall Trial Operations duration, individual subsystems shall meet the minimum continuous malfunction-free operation periods specified in Annex P, including as a minimum: escalators (40 hours), elevators (24 hours), fire suppression systems (30 days), and SCADA (360 hours at $\geq$ 99.5% availability).

## 10.10. TRIAL OPERATION, RELIABILITY & HANDOVER

### 10.10.1 General

This Section specifies the minimum requirements for Trial Running, Trial Operations, Reliability Demonstration, System Performance Verification, Operational Readiness, Handover and Final Acceptance of the Works.
The Contractor shall demonstrate that all railway systems have been fully integrated, tested and commissioned and are capable of safe, reliable, maintainable and efficient operation under normal, degraded and emergency operating conditions.
Trial Operations shall be performed only after successful completion of Factory Acceptance Testing (FAT), Site Acceptance Testing (SAT), Static Testing, Dynamic Testing and Integrated System Testing (IST).
The Contractor shall remain fully responsible for the Works until Final Acceptance has been formally granted by the Employer.

Confidential

### 10.10.2 Trial Running

The Contractor shall prepare and submit a Trial Running Programme for the Employer's approval. Trial Running shall demonstrate the capability of the complete railway system to operate under simulated revenue service conditions without passengers unless otherwise approved by the Employer. Trial Running shall include, as a minimum:

- Timetable simulation;
- Peak and off-peak operating conditions;
- Normal service operation;
- Degraded mode operation;
- Emergency operation;
- Recovery following equipment failures;
- Operational interface validation between all railway subsystems;
- Verification of operating procedures.

All operational events shall be recorded and analysed. Any failure affecting safety, reliability or operational performance shall be investigated, corrected and successfully re-tested.

### 10.10.3 Trial Operations

Following successful completion of Trial Running, the Contractor shall conduct Trial Operations to demonstrate sustained operational performance under representative service conditions.

Trial Operations shall verify:

- Continuous operation of all railway systems;
- Operational stability;
- Passenger service readiness;
- System availability;
- Timetable adherence;
- Safe operation under normal and degraded conditions;
- Emergency response capability;
- Correct interaction between infrastructure, rolling stock and operational personnel.

The duration of Trial Operations shall be as specified in the Contract or until all contractual performance requirements have been achieved.

### 10.10.4 Reliability Demonstration

The Contractor shall demonstrate that all systems comply with the contractual Reliability, Availability, Maintainability and Safety (RAMS) requirements.
Reliability Demonstration shall include:

- Continuous operational monitoring;
- Recording of all failures and defects;
- Failure trend analysis;

Confidential

- Root cause investigations;
- Verification of corrective actions;
- Confirmation of stable system performance.

The Contractor shall demonstrate compliance with the specified reliability targets, including Mean Time Between Failures (MTBF), Mean Time To Repair (MTTR), system availability and maintainability requirements.
Failure to achieve the specified RAMS performance shall require corrective actions, additional testing and extension of Trial Operations where directed by the Employer.

### 10.10.5 Performance Verification

The Contractor shall demonstrate that the completed railway system satisfies all contractual performance requirements.
Performance verification shall include, as applicable:

- Train service performance;
- Headway verification;
- Traction power performance;
- Signalling system performance;
- SCADA functionality;
- Communications system performance;
- Station systems functionality;
- Environmental control performance;
- Fire and life safety system performance;
- Passenger information systems;
- Vertical transportation systems;
- Energy consumption and power quality;
- System response under degraded operating conditions.

Performance measurements shall be recorded, analysed and submitted to the Employer for review and approval.

### 10.10.6 Operational Readiness

The Contractor shall demonstrate that the railway system is fully prepared for safe commercial operation.
Operational Readiness shall include verification of:

- Completion of all Testing and Commissioning activities;
- Completion of operator and maintenance staff training;
- Availability of Operation and Maintenance Manuals;
- Completion of emergency response procedures;
- Availability of spare parts, tools and maintenance equipment;
- Completion of operational documentation;
- Completion of all statutory inspections and approvals;
- Readiness of Control Centres, stations, depots and maintenance facilities.

No system shall enter commercial service until Operational Readiness has been accepted by the Employer.

### 10.10.7 Defects and Corrective Actions

All defects identified during Trial Running, Trial Operations or Reliability Demonstration shall be recorded in a Defect Register.

Each defect shall be classified according to its impact on safety, operational performance and contractual compliance.

The Contractor shall investigate each defect, identify its root cause, implement corrective actions and demonstrate successful rectification through re-testing.

Critical safety-related defects shall be rectified prior to continuation of Trial Operations unless otherwise authorised by the Employer.

### 10.10.8 Handover Requirements

Upon successful completion of Trial Operations, the Contractor shall formally request Handover of the Works.

The request shall include evidence demonstrating completion of all contractual obligations, including:

- Approved FAT and SAT Reports;
- Static and Dynamic Test Reports;
- Integrated System Test Reports;
- Trial Running Reports;
- Trial Operations Reports;
- Reliability Demonstration Reports;
- RAMS Verification Reports;
- Safety Validation Documentation;
- Cybersecurity Verification Records;
- Configuration Management Records;
- As-Built Documentation;
- As-Built Climate Resilience Report;
- Operation and Maintenance Manuals;
- Asset Registers;
- Training Records;
- Spare Parts Lists;
- Warranty Documentation;
- Climate Resilience Assessment (CRA) completion records, where relevant;
- Climate Resilience Management Plan (CRMP) implementation and close-out records, where relevant.

The Employer reserves the right to reject any Handover request where documentation is incomplete or contractual requirements have not been satisfied. The completion of handover shall be conditional upon the Contractor's preparation and submission of the As-Built Climate Resilience Report, demonstrating compliance with the Climate Resilience Assessment (CRA) and the Climate Resilience Management Plan (CRMP), and its subsequent approval by the Engineer and the Employer.

### 10.10.9 Provisional Acceptance

Provisional Acceptance may be granted following successful completion of Trial Operations and demonstration that the Works are substantially complete and fit for their intended purpose.
Prior to Provisional Acceptance, the Contractor shall demonstrate that:

- All contractual Testing and Commissioning activities have been completed;
- All safety-critical systems have been accepted;
- Integrated railway operation has been successfully demonstrated;
- Outstanding defects do not adversely affect safety or operational performance;
- All statutory approvals have been obtained;
- Required documentation has been submitted and accepted.

Provisional Acceptance shall not relieve the Contractor of any remaining contractual obligations.

### 10.10.10 Final Acceptance

Final Acceptance shall be granted only after:

- Completion of the Defects Liability Period;
- Rectification of all outstanding defects;
- Demonstration of continued compliance with RAMS requirements;
- Completion of all outstanding contractual obligations;
- Approval of all final documentation;
- Acceptance of the final configuration baseline by the Employer.

The Employer shall issue the Final Acceptance Certificate when satisfied that all contractual requirements have been fulfilled.

### 10.10.11 Documentation and Configuration Management

The Contractor shall establish and maintain complete configuration management throughout the Project.
Prior to Final Acceptance, the Contractor shall submit:

- Final As-Built Drawings;
- Configuration Baseline Records;
- Software Version Registers;
- Equipment Configuration Records;
- Calibration Certificates;
- Test Certificates;
- Inspection Records;
- Asset Management Data;
- Digital Engineering Records, where specified.

All submitted documentation shall accurately reflect the final installed configuration of the Works.

### 10.10.12 General Acceptance Requirements

The Works shall not be considered complete until the Contractor has successfully demonstrated compliance with all contractual requirements relating to safety, functionality, reliability, availability, maintainability, interoperability and operational performance.
Successful completion of Trial Operations, Reliability Demonstration and Handover activities shall constitute evidence that the railway system is capable of supporting safe and reliable passenger and freight operations throughout its intended service life.
The Contractor shall remain fully responsible for the Works until the Employer has issued the relevant Taking-Over Certificate and Final Acceptance Certificate in accordance with the Contract.

**10.10.13. O&M Supervision Period**

Following issuance of the Taking-Over Certificate, the Contractor shall provide an Operation and Maintenance Supervision Period of twenty-four (24) months, during which the Contractor shall supervise revenue service, support operational staff, monitor system performance and respond to system failures. The Contractor's maintenance liability during the supervision period shall be assessed against the performance baseline established in the final two months of the period. The obligations of the O&M Supervision Period are set out in Annex P.

Confidential

# Environmental and Social (E&S) Requirements

The Environmental and Social Requirements set out herein form an integral and binding part of the Employer's Requirements and shall be read in conjunction with the Conditions of Contract, Technical Specifications, and all other Contract documents.

## 11.1. Overarching Objectives of the Environmental and Social Requirements

The overarching objectives of the E&S Requirements are to ensure that the INRAIL Project is designed, constructed, and completed in full compliance with the World Bank Environmental and Social Framework (ESF), applicable national legislation, and Good International Industry Practice (GIIP).

These E&S Requirements form an integral part of the Employer's Requirements and define, in a clear and enforceable manner, the Environmental, Social, Health and Safety (ESHS) obligations of the Contractor under the Design–Build Contract.

The objectives set out herein apply to all Project activities, including design development, construction works, Associated Facilities, Project Facilities, subcontracted activities, and supply chain-related activities.

The involvement of the Employer, PMC, CSC/Engineer, or PIOC shall not relieve the Contractor of any E&S obligation or liability.

## 11.2. Applicable Legal, Policy and Contractual Framework

- World Bank Environmental and Social Framework (ESF) (https://www.worldbank.org/en/projects-operations/environmental-and-social-framework)
- Environmental and Social Commitment Plan (ESCP) (https://aygm.uab.gov.tr/istanbul-kuzey-demiryolu-gecisi-projesi)

ESCP, agreed with the World Bank, establishes binding E&S commitments, actions, and timelines for the Project.

The Contractor acknowledges that:

  - the ESCP forms part of the financing framework of the Project;
  - obligations arising from the ESCP that relate to Project implementation are transferred to the Contractor through this Contract;
  - compliance with applicable ESCP commitments is mandatory.

Failure by the Contractor to comply with obligations derived from the ESCP shall constitute non-compliance with the E&S Requirements under the Contract.

- National Laws, Regulations and Permits applicable in Türkiye as of date of Contract signature, with subsequent amendments as may be enacted in the country.

Where differences exist between national legislation and the World Bank ESF, the more stringent requirement shall apply, unless otherwise agreed in writing with the Employer and the World Bank.

The Contractor shall obtain and maintain all permits and approvals required for the execution of the Works, including those related to Associated Facilities and Project Facilities.

The E&S obligations of the Contractor are defined by and derived from the following Contract documents, which shall be read together:

- the Employer's Requirements, including these Environmental and Social Requirements;
- the Conditions of Contract;
- the Environmental and Social Commitment Plan (ESCP);
- the Environmental and Social Impact Assessment (ESIA);
(https://aygm.uab.gov.tr/istanbul-kuzey-demiryolu-gecisi-projesi)
- the Environmental and Social Management Plan (ESMP);
(https://aygm.uab.gov.tr/istanbul-kuzey-demiryolu-gecisi-projesi)
- the Stakeholder Engagement Plan (SEP);
(https://aygm.uab.gov.tr/istanbul-kuzey-demiryolu-gecisi-projesi)
- the Labor Management Procedures (LMP);
(https://aygm.uab.gov.tr/istanbul-kuzey-demiryolu-gecisi-projesi)
- the Resettlement Framework (RF) and Resettlement Plan / Livelihood Restoration Plan (RP/LRP);
(https://aygm.uab.gov.tr/istanbul-kuzey-demiryolu-gecisi-projesi)[30]
- the Cultural Heritage Management Plan;
(https://aygm.uab.gov.tr/istanbul-kuzey-demiryolu-gecisi-projesi)
- applicable World Bank Group Environmental, Health and Safety Guidelines (EHSGs);
(https://documents.worldbank.org/en/publication/documents-reports/documentdetail/157871484635724258/environmental-health-and-safety-general-guidelines/)
- Good International Industry Practice (GIIP).

E&S requirements are not advisory but contractually binding. Compliance with the above framework is included in the Contract Price. The Contractor acknowledges that all above-mentioned documents form an integral part of the Contract scope.

The Contractor shall ensure that all subcontractors, suppliers, and service providers are contractually bound to comply with the same E&S framework.

The Contractor shall ensure that all E&S requirements under the Contract are fully incorporated into all subcontracts, supply agreements, and service contracts.

The Contractor shall remain fully responsible for ensuring compliance by all subcontractors, suppliers, and service providers with the applicable E&S requirements throughout Project implementation. Without prejudice to the Contractor's obligations under FIDIC Sub-Clause 4.4 in respect of Subcontractors, the Contractor shall ensure that all relevant E&S requirements are incorporated into subcontracts, purchase orders, and service agreements, as applicable. The Contractor shall monitor, supervise, enforce, and report on compliance with such requirements on a regular basis. Any non-compliance by subcontractors, suppliers, or service providers shall not relieve the Contractor of its obligations under the Contract.

---

30 *The RF has been prepared and is available at the relevant link. The RP/LRP will be prepared and finalized by the Employer following the development of the final design by the Contractor. The Contractor shall provide timely and accurate design information, construction methodologies, sequencing of works, and any other relevant inputs required for the preparation and finalization of the RP/LRP. The Contractor acknowledges that the RP/LRP will be developed progressively, in line with design finalization, and may be issued in phases corresponding to specific sections of the Project. The Contractor shall fully cooperate with the Employer in this process and shall ensure that its work programme and construction planning are aligned with the preparation and implementation of the RP/LRP. No works shall commence on any section of the Project unless and until the relevant RP/LRP measures have been fully implemented and land access has been formally cleared in accordance with the Contract. The Contractor shall not be entitled to any claim for additional time or cost arising from the progressive preparation, finalization, or phased implementation of the RP/LRP.*

### 11.3. Design–Build Model

The Contractor acknowledges that E&S risks related to design development and construction execution are inherent to Design–Build contracts.

Such risks include, but are not limited to:

- impacts arising from design refinement;
- changes in construction methods or logistics;
- site-specific conditions identified during detailed design or construction;
- impacts associated with Project Facilities and Associated Facilities.

Any change in design, construction methodology, sequencing of works, or Project/Associated Facilities after approval of the ESIA, ESMP and relevant E&S instruments shall be subject to prior E&S screening by the Contractor. This shall follow the E&S Change Management Procedure to be prepared by the Contractor as part of the C-ESMP, and approved by the Engineer and the Employer prior to implementation. The procedure shall be aligned with the Contractor's design management and change control processes and shall include screening, assessment, approval, documentation, and reporting of E&S risks and impacts associated with any change in design, construction methodology, sequencing of works, Project Facilities, Associated Facilities, or other implementation arrangements. Where any change is proposed before approval of the ESIA or relevant lot-specific E&S instruments, the potential E&S risks and impacts of such change shall be assessed and addressed within the applicable ESIA and/or lot-specific E&S instrument.

The Contractor shall prepare an E&S Screening Report (and documents required under the E&S Change Management Procedure) and submit it to the Engineer and the Employer for review and approval prior to implementation. Material changes, and any changes for which the E&S screening identifies material E&S risks or impacts, shall also be subject to the prior no-objection of the World Bank, as applicable.

Where the screening identifies new or increased E&S risks or impacts, the Contractor shall update the relevant E&S instruments or prepare supplementary instruments, as required.

No such change shall be implemented unless and until the required E&S approvals are obtained and, where applicable, the World Bank's no-objection is secured.

Such activities shall be deemed included in the Contract Price and shall not constitute a Variation, unless such measures qualify as supplementary E&S measures in accordance with the relevant Provisional Sum provisions under the Contract.

### 11.4. ESS1 – Assessment and Management of Environmental and Social Risks and Impacts

#### 11.4.1 Status of ESIA and ESMP

The ESIA and ESMP were prepared prior to final design and are indicative in nature. The Contractor acknowledges that the ESIA and ESMP provided by the Employer:

- were prepared prior to finalization of the design;
- are based on preliminary assumptions regarding alignment, construction methods, and facilities;
- constitute baseline E&S documents only.

The ESIA and ESMP do not represent finalized E&S instruments for the purposes of Project implementation.

### 11.4.2 Finalization of the ESIA and ESMP by the Contractor

The Contractor shall be responsible for the finalization of the ESIA and the ESMP for the Project.

Finalization shall be based on the final design, construction methodology, sequencing of works, and implementation arrangements to be developed by the Contractor.

Finalization of the ESIA and ESMP shall include, as a minimum:

- incorporation of final design and engineering details and associated land acquisition requirements;
- assessment of E&S risks and impacts arising from construction methods, sequencing, and logistics;
- inclusion of all Project Facilities and Associated Facilities;
- assessment of cumulative E&S risks and impacts, taking into account other existing, planned, or reasonably foreseeable developments and activities within the Project area of influence;
- identification of any additional mitigation, monitoring, and management measures required to comply with the World Bank ESF.

The finalized ESIA and ESMP shall be submitted by the Contractor to the Engineer and/or the Employer for review and approval in accordance with the Contract and shall thereafter form part of the Contract documents.

Updates, refinements, or additional mitigation measures arising from the finalization of the ESIA and ESMP, including those related to final design, construction methodology, or Project Facilities and Associated Facilities, shall not in themselves constitute a Variation or give rise to entitlement to additional time or cost.

### 11.4.3 Management and Mitigation Measures

The Contractor shall define and implement appropriate avoidance, mitigation and management measures to address identified E&S risks and impacts.

Such measures shall be:

- proportionate to the level of risk;
- technically feasible;
- integrated into construction planning, method statements, and site management.

E&S management measures shall be operationalized through the finalized ESMP, the Contractor's Environmental and Social Management Plan (C-ESMP), and relevant sub-management plans.

### 11.4.4 C-ESMP

The Contractor shall prepare, submit, obtain approval for, and implement a C-ESMP prior to commencement of any physical works on site.

The C-ESMP shall constitute the primary operational instrument through which the Contractor implements all E&S obligations under the Contract and shall be fully aligned with the finalized ESIA and ESMP, the ESCP, World Bank ESF, and Good International Industry Practice (GIIP).

The C-ESMP shall reflect the final design, construction methodology, sequencing of works, workforce size, logistics arrangements, Project Facilities, and Associated Facilities. The C-ESMP shall also incorporate measures to prevent, minimize, monitor, and manage cumulative E&S risks and impacts identified during the finalization of the ESIA, ESMP, RP/LRP, and SEP.

No method statement for activities involving material E&S risks shall be deemed complete unless it incorporates all relevant mitigation, monitoring, emergency response, and community protection measures required under the finalized ESIA, ESMP, SEP, RP/LRP, C-ESMP, and applicable sub-management plans.

The Contractor shall ensure that such measures are fully integrated into the planning and execution of the relevant activities.

### 11.4.5 Sub-Management Plans under C-ESMP

The following site-specific sub-management plans and procedures, as a minimum, shall be prepared by the Contractor and tailored to the Project:

- Biodiversity Management Plan (including, where required, Biodiversity Action Plan)
- Occupational Health & Safety Plan and Procedures
- Emergency Preparedness and Response Plan
- Traffic and Transportation Management Plan
- Community Health and Safety Management Plan
- Sexual Exploitation, Abuse and Sexual Harassment (SEA/SH) Prevention and Response Action Plan
- Cultural Heritage Management Plan and Chance Find Procedure
- Contractor's Labor Management Plan (C-LMP) (including Labor Influx Management and Workers' Camp Management)
- Security Management Plan
- E&S Change Management Procedure

The final number, scope, structure, consolidation or separation of the sub-management plans may be adjusted, merged or revised through mutual agreement between the Engineer, the Employer and the Contractor. The definitive list and structure of sub-management plans shall be confirmed and formalized within the finalized ESMP approved by the Engineer and the Employer with no-objection confirmed from the World Bank.

### 11.4.6 Status of SEP

The SEP provided by the Employer has been prepared prior to finalization of the Project design and is indicative in nature. The Contractor acknowledges that the SEP:

- is based on preliminary Project information, including alignment, construction methods, sequencing of works, and identification of stakeholders;

- reflects initial stakeholder mapping and engagement activities carried out during the preparation phase;
- constitutes a baseline document for stakeholder engagement only.

The SEP does not represent a finalized instrument for the purposes of Project implementation.

The Contractor shall be responsible for the update and finalization of the SEP in line with the final design, construction methodology, sequencing of works, and implementation arrangements.

Finalization of the SEP shall include, as a minimum:

- updating stakeholder identification and analysis based on the final Project footprint and areas of influence;
- defining detailed stakeholder engagement strategies and methods tailored to different stakeholder groups;
- establishing and operationalizing a Project-level grievance mechanism accessible to all stakeholders;
- planning and implementing consultation and disclosure activities throughout the Project lifecycle;
- ensuring that the disclosure and consultation requirements, including the applicable disclosure periods, for the E&S instruments are reflected and implemented in accordance with the requirements of the World Bank;
- consideration of cumulative social risks and impacts, including those arising from the interaction of the Project with other existing, planned, or reasonably foreseeable developments, and integration of appropriate stakeholder engagement and disclosure measures in response thereto;
- ensuring alignment with the ESCP, ESIA, ESMP, and other relevant E&S instruments.

The updated and finalized SEP shall be submitted to the Engineer and the Employer for review and approval. The Contractor shall implement the SEP as an integral part of the Project's E&S management system.

The SEP shall be treated as a living document and shall be updated annually, or as required, to reflect changes in Project design, stakeholder context, or emerging risks and impacts.

### 11.4.7 World Bank No-Objection as a Condition Precedent to Construction

The Contractor explicitly acknowledges and agrees that:

No construction activities of any kind shall commence unless and until the World Bank has issued its written no-objection to the finalized ESIA, finalized ESMP, finalized SEP, C-ESMP, and all applicable sub-management plans.

For the avoidance of doubt, World Bank no-objection is a mandatory condition precedent to:

- mobilization to the relevant site section,
- establishment of Project Facilities or Associated Facilities,
- commencement of any physical works.

No works shall commence on any section of the Project where land acquisition and resettlement impacts are present, unless and until the relevant RP/LRP measures have been fully implemented and land access has been formally cleared in accordance with the Contract. This shall include the preparation of Sectional RP Completion Reports by the Engineer, approval by the Employer, and receipt of the World Bank's no-objection confirming that the applicable RP and/or LRP measures for the relevant section have been implemented in accordance with ESS5 requirements.

No claim for Extension of Time, additional payment, or compensation shall arise from delays associated with preparation, revision, correction, resubmission or approval of E&S documents.

### 11.4.8 Integration of E&S Requirements into the Work Programme

The Contractor shall integrate all E&S requirements into the Work Programme in a clear, logical, and traceable manner.

The Work Programme shall include, as mandatory and binding milestones, all E&S-related approvals, permits, studies, stakeholder engagement activities, and clearances required under the Contract.

No construction activity, work front, or establishment of any Project Facility or Associated Facility shall commence unless the corresponding E&S preconditions, approvals, and clearances have been fully satisfied.

Such E&S milestones shall constitute hold points in the Work Programme and shall be subject to verification by the Engineer.

## 11.5. Additional Environmental and Social Studies and Surveys

### 11.5.1 General Requirement

The Contractor shall be responsible for identifying, carrying out, and financing any additional E&S studies and surveys required to ensure full compliance with the World Bank ESF, the finalized ESIA and ESMP, and applicable national legislation.

### 11.5.2 Types of Additional Studies and Surveys

Additional E&S studies and surveys for any Project Facility and Associated Facility may include, but shall not be limited to:

- baseline noise and vibration measurements and impacts assessment modelling and monitoring;
- air quality baseline measurements, impact assessment modelling and monitoring;
- climate change adaptations and other climate resilience related studies;
- surface water and groundwater quality assessments;
- soil quality or contamination assessments;
- spoil management studies (including identification of storage sites, preparation of construction spoil generation schedule and spoil & excavated material management plan including final destination of surplus spoil);
- biodiversity surveys, including flora, fauna, avifauna, bat surveys, and seasonal surveys;
- community health and safety risk assessments;

- traffic and road safety assessments related to construction activities.

The list above is non-exhaustive and shall be interpreted broadly.

### 11.5.3 Timing and Integration

Additional studies and surveys shall be carried out:

- during design finalization, where required to support ESIA and ESMP finalization;
- prior to commencement of specific construction activities, where required;
- during construction, where monitoring results or site conditions indicate the need for further assessment.

The results of such studies and surveys, including where relevant the assessment of cumulative E&S risks and impacts, shall be integrated into the finalized ESIA, the finalized ESMP, the finalized SEP, C-ESMP, and relevant sub-management plans, as applicable.

### 11.5.4 Standards and Methodology

All additional E&S studies and surveys shall be:

- conducted by suitably qualified and experienced specialists;
- undertaken in accordance with GIIP;
- consistent with World Bank Group EHSGs;
- aligned with applicable national standards and permit requirements.

### 11.5.5 Review, Approval and Disclosure

The Contractor shall submit the results of additional studies and surveys to the Engineer and the Employer for review and approval in accordance with the Contract. Where required, such studies shall also be submitted to the World Bank.

The Contractor shall support any required disclosure and stakeholder engagement activities associated with such studies.

### 11.5.6 Cost and Responsibility

All costs associated with additional E&S studies and surveys, including fieldwork, laboratory analysis, reporting, review, and approvals, shall be borne by the Contractor.

The need to undertake additional studies or surveys shall not relieve the Contractor of any E&S obligation under the Contract.

For the avoidance of doubt, routine and reasonably foreseeable studies, surveys, monitoring, and assessments required for compliance with the Contractor's Design–Build obligations shall be deemed included in the Contract Price. Only exceptional supplementary studies, surveys, assessments, or monitoring that were not reasonably foreseeable at Contract signature, and are expressly approved by the Employer and instructed by the Engineer in accordance with the Contract, may be payable under the relevant Provisional Sum item.

## 11.6. Associated Facilities and Project Facilities

### 11.6.1 Definition and Scope

For the purposes of this Contract:

Project Facilities shall mean all temporary or permanent facilities that are designed, constructed, operated, or controlled by the Contractor (or its subcontractors) and are required for the execution of the Works. The final binding decision on inclusion of a facility in the list of Project Facilities is made by the Engineer and the Employer.

These include, but are not limited to:

- worker camps and accommodation facilities;
- borrow pits, quarries, and material extraction sites (developed or operated by the Contractor);
- spoil disposal, storage, and stockpile areas;
- batching plants, crushing plants, asphalt plants, and workshops;
- access roads, haul roads, and temporary connections constructed for the Works;
- utilities established by the Contractor, including water abstraction points, wastewater discharge points, and temporary power supply facilities.

Associated Facilities shall mean facilities or activities that:

- are not funded as part of the Project;
- are directly and significantly related to the Project;
- would not have been constructed or expanded if the Project did not exist; and
- are necessary for the Project to be viable.

The final binding decision on inclusion of a facility in the list of Associated Facilities is made by the Engineer and the Employer.

### 11.6.2 Environmental and Social Scope

All Project Facilities shall be considered an integral part of the Project and shall be fully covered under the Contractor's E&S obligations.

The Contractor shall ensure that:

- all Project Facilities are identified during design finalization;
- their E&S risks and impacts are assessed;
- they are included in the finalized ESIA, the finalized ESMP, the finalized SEP, and C-ESMP;
- appropriate avoidance, mitigation, monitoring, and management measures are implemented. This shall include alternatives analysis for their siting in order to avoid and minimize impacts on sensitive receptors.

For Associated Facilities, the Contractor shall:

- identify such facilities to the extent reasonably known or reasonably foreseeable;
- assess related E&S risks and impacts where relevant, including the analysis of alternatives within the finalized ESIA;
- where such facilities are under the Contractor's control or influence, include them, as applicable, in the finalized ESIA, the finalized ESMP, the finalized SEP, and C-ESMP;

- coordinate with the Employer and seek to influence relevant third parties regarding their management in line with applicable E&S Standards, where such facilities are not under the Contractor's control.

### 11.6.3 Approval, Permits and Land Access (Project Facilities)

The Contractor shall ensure that:

- all necessary permits, approvals, and land access arrangements for Project Facilities are obtained prior to establishment. No land access or construction works shall commence on any section of the Project Facility, where land acquisition and resettlement impacts are present, unless and until the relevant RP/LRP measures have been fully implemented and land access has been formally granted in accordance with the Contract. This shall include the Sectional RP Completion Reports prepared by the Engineer (and approved by the Employer) confirming that the (sectional) RP and LRP have been implemented to ESS5 requirements and these have received no objection from the World Bank;
- facilities are established only after approval of the relevant E&S documentation by the Engineer and the Employer and receipt of no-objection from the World Bank;
- affected communities are informed and consulted, as required.

Temporary facilities shall be restored to conditions acceptable to the Employer and relevant authorities and provided that no significant residual E&S impacts remain. Without prejudice to the Contractor's obligations under FIDIC Sub-Clause 4.22 in respect of the Site and the Works, the Contractor shall ensure that all temporary facilities, including those located outside the Site, are decommissioned, cleared, made safe, and restored in accordance with the Contract, applicable E&S requirements, and the approvals of the Employer and relevant authorities. All decommissioning and restoration costs shall be borne by the Contractor.

For the avoidance of doubt, no Contractor's Facility, whether classified as a Project Facility or an Associated Facility, as applicable, including but not limited to camps, quarries, borrow areas, spoil disposal areas, batching plants, access roads, haul roads, or temporary utilities, shall be established unless:

(i) all required permits, approvals, and land access arrangements are in place;

(ii) all applicable E&S requirements and approvals under the Contract have been satisfied; and

(iii) where required, the relevant E&S instruments have received the World Bank's no-objection.

### 11.6.4 Subcontractors and Third Parties

The Contractor shall ensure that all subcontractors and contracted third parties involved in the establishment or operation of Project Facilities comply with the E&S requirements set out in the Contract. The Contractor shall incorporate the applicable E&S requirements directly into all relevant subcontracts, agreements, purchase orders, and service arrangements. Without prejudice to the Contractor's obligations under FIDIC Sub-Clause 4.4, the Contractor shall remain responsible for the works, acts, defaults, agents, and employees of its subcontractors as if they were the works, acts, defaults, agents, and employees of the Contractor, including with respect to compliance with the applicable E&S requirements.

The Contractor shall remain fully responsible for E&S performance related to such facilities.

For Associated Facilities outside the Contractor's control, where third parties are involved, the Contractor shall cooperate with the Employer and relevant stakeholders and use reasonable efforts to support alignment with applicable E&S requirements, without assuming responsibility for facilities outside its control.

### 11.7. ESS2 – Labor and Working Conditions

#### 11.7.1 Contractor's Labor Management Plan (C-LMP)

The Contractor shall prepare, submit, and implement a C-LMP in accordance with ESS2, applicable national labor legislation, and the ESCP.

The C-LMP shall be prepared prior to commencement of construction activities and prior to the establishment of any Project Facilities, which includes workers' camps and accommodation facilities, and updated as required during Project implementation.

As a minimum, the C-LMP shall address:

- workforce planning and recruitment procedures;
- workers' accommodation and regular inspections;
- terms and conditions of employment;
- working hours, wages, overtime, and benefits;
- occupational health and safety arrangements, including activity-specific risk assessments, method statements, Permit to Work procedures, task-based competency controls, and periodic inspection and maintenance of critical equipment;
- prevention of child labor and forced labor, including age verification, identity checks, work permit/eligibility checks, lawful employment registration, and prohibition of debt bondage, retention of identity documents or passports, coercion, threat, unlawful wage deductions, or involuntary work;
- non-discrimination and equal opportunity measures;
- labor influx management;
- local labor employment;
- prevention and management of SEA/SH;
- worker grievance redress mechanisms;
- contractor management provisions to ensure LMP requirements are fully cascaded and enforceable across all sub-contractors, labor service providers, service providers, and relevant suppliers.

The C-LMP shall include provisions for periodic external labor audits, to be conducted at least semi-annually, commencing upon mobilization of the main workforce, as set out in Independent Monitoring and Audit.

#### 11.7.2 Local Employment and Local Workforce Development

The Contractor shall give priority to local employment to the extent technically and practically feasible, in accordance with ESS2 and the commitments set out in the ESCP.

For the purposes of this Contract, "local" shall be defined as individuals residing within the Project's area of influence or surrounding districts, as further clarified by the Employer during implementation.

Where required by the Employer or the World Bank, the Contractor shall propose indicative targets and Key Performance Indicators (KPIs) related to local employment.

Such KPIs may include, but shall not be limited to:

- percentage of local workers in the total workforce;
- percentage of local workers in unskilled and semi-skilled positions;
- number and percentage of local female workers employed;
- retention rate of local workers.

Approved KPIs shall be monitored and reported as part of regular E&S monitoring reports.
The Contractor shall maintain records of:

- local recruitment activities;
- workforce composition disaggregated by local/non-local status and gender;
- progress against approved local employment KPIs;
- external labor audits;
- workers' accommodation inspections.

This information shall be included in regular E&S monitoring reports.

### 11.7.3 Subcontractors and Labor Service Providers

The Contractor shall ensure that subcontractors, labor service providers, and relevant suppliers comply with the requirements of this Section. The Contractor shall incorporate the applicable requirements of this Section directly into all relevant subcontracts, labor service agreements, supply agreements, purchase orders, and service arrangements, as applicable.

The Contractor shall remain fully responsible for labor and working conditions across the entire Project workforce. The Contractor shall be responsible for the acts or defaults of any Subcontractor and its agents or employees as if they were the acts or defaults of the Contractor.

## 11.8. ESS3 – Resource Efficiency and Pollution Prevention

Where construction activities involve significant energy use, the Contractor shall implement reasonable and practicable measures to improve energy efficiency, including:

- selection of energy-efficient equipment and machinery;
- proper maintenance of vehicles and equipment;
- optimization of construction processes to reduce unnecessary energy consumption.

Where construction activities involve significant water use or have the potential to affect water resources, the Contractor shall:

- implement measures to minimize water consumption;
- avoid adverse impacts on local water users and ecosystems;
- manage abstraction, use, and discharge of water in accordance with permits and applicable standards.

The Contractor shall promote efficient use of raw materials by:

- minimizing material wastage;
- reusing and recycling materials where feasible;
- sourcing materials in accordance with applicable legal and E&S requirements.

The Contractor shall implement measures to avoid or minimize air emissions, dust, and noise arising from construction activities, including:

- dust suppression measures;

- appropriate maintenance of equipment;
- implementation of noise control measures where required.

The Contractor shall prevent pollution of surface water and groundwater by:

- managing wastewater and runoff;
- preventing uncontrolled discharges;
- implementing spill prevention and response measures.

The Contractor shall prevent soil and land contamination by:

- proper storage and handling of fuels, oils, and chemicals;
- implementing secondary containment where required;
- promptly addressing any spills or leaks.

The Contractor shall manage waste in accordance with the waste hierarchy, prioritizing:

- waste minimization;
- reuse and recycling;
- safe treatment and disposal of residual waste. (This shall include the management of spoil and excavated materials.)

Hazardous and non-hazardous wastes shall be segregated, stored, transported, and disposed of in accordance with applicable legislation and GIIP.

The Contractor shall ensure that hazardous materials and chemicals are:

- identified and inventoried;
- handled, stored, and transported safely;
- used only where necessary and in controlled quantities.

Material Safety Data Sheets (MSDS) shall be available on site, and workers shall be trained in safe handling procedures.

The Contractor shall monitor resource use and pollution prevention measures as part of Environmental and Social monitoring.

Monitoring may include, where relevant:

- energy and water consumption;
- waste generation and disposal;
- emissions, discharges, and incidents related to pollution.

Relevant information shall be included in regular E&S monitoring reports.

The Contractor shall ensure that subcontractors and suppliers comply with the requirements of this Section, where relevant to their activities.

The Contractor shall remain responsible for overall compliance with ESS3 requirements.

### 11.9. ESS4 – Community Health, Safety and Security

In addition to, and without prejudice to, the Contractor's general obligations under the Conditions of Contract, including Sub-Clauses 4.8, 4.13, 4.14, 4.15, 4.18 and 4.21, as relevant to community health, safety and security, the Contractor shall comply with the specific requirements set out in this Section. The requirements of this Section shall be read together with, and shall not limit or replace, the Contractor's obligations under the Conditions of Contract.

### 11.9.1 Community Health and Safety Risk Assessment

The Contractor shall identify and assess risks to community health and safety arising from Project activities, including but not limited to:

- construction-related hazards;
- traffic and road safety risks;
- noise, vibration, dust, and emissions;
- interactions between workers and local communities;
- risks related to Project Facilities/Associated Facilities and worker accommodation.

Community health and safety risks, including cumulative risks arising from the interaction of Project activities with other existing, planned, or reasonably foreseeable developments, shall be assessed as part of ESIA/ESMP finalization, SEP finalization and reflected in the C-ESMP and relevant sub-plans.

### 11.9.2 Traffic and Road Safety

The Contractor shall assess and manage traffic and road safety risks associated with Project activities.

Traffic management measures shall include, as appropriate:

- preparation and implementation of a Traffic and Transportation Management Plan;
- safe routing of construction traffic;
- implementation of an In-Vehicle Monitoring System, including GPS tracking, for Project-related vehicles, with priority given to vehicles regularly used by the Contractor, subcontractors, and international logistics operations;
- installation of appropriate signage, barriers, and speed controls;
- coordination with relevant authorities and local communities.

Traffic-related risks to communities shall be minimized, particularly in sensitive locations such as residential areas, schools, and public facilities.

### 11.9.3 Management of Construction-Related Community Risks

The Contractor shall implement measures to prevent or minimize risks to communities arising from construction activities, including:

- controlling public access to construction sites;
- maintaining safe site boundaries and fencing/lighting;
- implementing safe working practices near communities;
- communicating construction schedules and risks to affected communities.

Where temporary disruptions or risks cannot be avoided, the Contractor shall implement appropriate mitigation and communication measures.

### 11.9.4 Emergency Preparedness and Response

The Contractor shall establish and implement emergency preparedness and response procedures addressing potential incidents that may affect communities, including:

- accidents involving construction vehicles;
- spills, fires, or hazardous material incidents;

- extreme weather events affecting construction activities;
- earthquakes and seismic events, including related emergency preparedness, evacuation, and response measures;
- other emergencies with potential off-site impacts.

Emergency procedures shall be coordinated with local emergency services, where appropriate, and communicated to workers and relevant stakeholders, including earthquake-related emergency arrangements where relevant.

The Contractor shall ensure that adequate medical emergency response arrangements are in place at all active work fronts, Project Facilities, and worker accommodation areas, including during night shifts and out-of-hours works. Such arrangements shall include, as appropriate to the risk level, workforce size, remoteness, and access conditions, trained first aiders, first aid facilities and equipment, emergency transport arrangements, access to ambulance services, and availability of qualified medical personnel. Where site conditions, workforce size, remoteness, travel time to hospitals, or the nature of high-risk activities require, the Contractor shall provide an on-site ambulance and/or on-site medical personnel, including for night shifts. These arrangements shall be defined in the C-ESMP, OHS Plan, and Emergency Preparedness and Response Plan, and shall be tested through drills.

### 11.9.5 Security Arrangements

Where security personnel are employed for the Project, the Contractor shall ensure that security arrangements:

- are proportionate to the identified risks;
- comply with applicable national law;
- are consistent with GIIP and ESS4 principles.

Security personnel shall receive training, prior to the commencement of their duties, on appropriate conduct, including respectful interaction with communities, prevention of SEA/SH, and the prohibition of excessive use of force.

The Contractor shall prepare and submit to the Engineer and the Employer for approval the Security Management Plan, which can be part of the C-ESMP.

### 11.9.6 Monitoring, Incident Reporting and Corrective Action

The Contractor shall monitor community health, safety, and security performance and record incidents affecting communities.

Incidents with actual or potential community impacts shall be reported promptly to the Employer within 24 hours in accordance with the Contract, including the requirements set out in Immediate Notifications and Incident Reporting section.

Corrective actions shall be implemented in a timely manner to prevent recurrence.

### 11.9.7 Subcontractors and Third Parties

The Contractor shall ensure that subcontractors, transport operators, and service providers comply with the requirements of this Section.

The Contractor shall remain responsible for community health, safety, and security impacts arising from subcontracted activities.

### 11.10. ESS5 – Land Acquisition, Resettlement and Livelihood

#### 11.10.1 Allocation of Roles and Responsibilities

The allocation of responsibilities for land acquisition and resettlement-related activities is defined in the Resettlement Framework and as follows:

- Statutory expropriation and compensation under national law shall remain the responsibility of the Employer through the relevant government authorities.
- Preparation and updating of the RP/LRP shall be undertaken by the Employer following finalization of the design.
- Implementation of the RP/LRP**,** including entitlement determination and stakeholder engagement, shall remain under the responsibility of the Employer.
- Without prejudice to the Employer's responsibility for providing access to the Site, and to the Contractor's obligations under FIDIC Sub-Clause 4.13 in respect of any additional facilities outside the Site required for the Works, the Contractor shall be responsible, at its own risk and cost, for securing access to any Project Facilities, temporary working areas, access roads, borrow areas, quarries, spoil disposal areas, camps, batching plants, storage areas, or other additional facilities outside the Site that are proposed, selected, established, used, or controlled by the Contractor. The Contractor shall not commence use of, or works on, any such additional facilities or areas outside the Site unless and until the related land access arrangements have been reviewed and cleared by the Employer, and any required RP/LRP measures have been completed in accordance with ESS5.

The Contractor shall not assume or be assigned decision-making authority with respect to entitlements, eligibility, or compensation levels.

Where national legislation and ESS5 differ, the Project shall be implemented in accordance with ESS5, as agreed with the World Bank.

Reference information on preliminary, lot-based expropriation parcel data is provided in Annex 3 of the Resettlement Framework (RF). It is noted that the parcel inventory included therein is tentative and indicative in nature; it does not constitute a formal or legally binding document and is subject to revision. The data presented reflects the status at the time of preparation and may change substantially upon finalization of the detailed design.

#### 11.10.2 Contractor's Obligations under ESS5

Notwithstanding the above allocation of responsibilities, the Contractor shall:

- upon finalisation of the detailed design for each section, promptly notify the Employer and the Engineer in writing and provide all design information necessary for the Employer to initiate preparation of the RP/LRP for the relevant section;
- not commence construction activities on any parcel or section, with land acquisition and resettlement impact, unless land access has been formally cleared by the Engineer and the Employer, including confirmation that all applicable RP/LRP measures, and any supplementary ESS5 measures required under the Contract for the relevant parcel or

section, have been fully implemented in accordance with ESS5 and the RP/LRP, and a Completion Report has been prepared by the CSC/Engineer, accepted by the Employer, and, where required under the Contract or applicable financing requirements, subject to the World Bank's no-objection;

- cooperate fully with the Employer, PMC, CSC/Engineer, and PIOC in the preparation and implementation of ESS5 instruments;
- provide timely and accurate information related to design, construction methods, and schedules that may affect land acquisition and/or livelihoods;
- support implementation of livelihood restoration and other ESS5-related mitigation measures, as required.

The RP/LRP Completion Report to be prepared on a sectional basis by the CSC/Engineer shall confirm that all compensation, assistance, livelihood restoration measures, and any supplementary ESS5 measures required under the Contract for the relevant parcel or section have been implemented in accordance with ESS5 and the approved resettlement instruments, and shall constitute a condition precedent to access to land and commencement of works for the relevant section.

The Contractor shall comply with the cut-off date established by the Employer in accordance with ESS5 and the approved RP/LRP. The Contractor shall not engage with, recognize, or provide any form of assistance, compensation, or commitment to individuals or entities who occupy or use the land after the established cut-off date, unless otherwise instructed in writing by the Employer.

The Contractor shall support the Employer in the communication of the cut-off date to affected communities, as required, and shall ensure that no actions are taken that could undermine the integrity or enforceability of the cut-off date.

**11.10.3 Informal Users and Livelihood Impacts**

The Contractor acknowledges that ESS5 applies not only to formal landowners but also to informal users and persons experiencing livelihood impacts as a result of the Project.

Livelihood impacts may arise from, inter alia, loss of access to land or resources, disruption of economic activities, and restrictions on land use during construction. Livelihood impacts shall include, but shall not be limited to:

- loss of access to land, natural resources, or common property resources;
- loss of crops, trees, standing assets, or other productive resources on or adjacent to affected land;
- loss of grazing rights or access to pastureland, forests, or water bodies;
- temporary or permanent disruption of agricultural, commercial, or income-generating activities;
- disruption to agricultural calendars, including planting and harvest seasons, caused by construction timing or sequencing;
- loss of business income or customer access resulting from restrictions on movement or access during construction;
- loss of access to markets, services, utilities, or public infrastructure during construction;

- impacts on fishing, water-dependent livelihoods, or irrigation arising from watercourse crossings or hydrological changes;
- restrictions on land use during construction that prevent or limit productive activity;
- secondary and indirect livelihood impacts on household members dependent on affected income earners;
- temporary livelihood disruptions arising from construction activities, including temporary land take, restricted access, or seasonal interruptions;
- collective or group-based livelihood impacts where livelihoods are organized at community or cooperative level.

Such impacts shall be addressed through the RP/LRP in accordance with ESS5. A cut-off date shall be established by the Employer for the Project in accordance with ESS5 requirements. The Contractor shall support the Employer in the timely and effective communication of the cut-off date to all affected communities and individuals and shall ensure that no unauthorized access, use of land, or establishment of new assets or activities is facilitated after the cut-off date.

### 11.10.4 Provisional Sums and ESS5-Related Mitigation Measures

The E&S Mitigation Measures provisional sum shall be used to facilitate implementation of approved ESS5-related supplementary mitigation measures that are not covered under national expropriation legislation, including livelihood restoration, transitional assistance, and support to informal users, to the extent such measures were not expressly identified, quantified, or priced at Contract signature. For the avoidance of doubt, the Provisional Sum is a financial mechanism only and shall not transfer any authority to the Contractor for entitlement determination, eligibility assessment, negotiation, or compensation valuation. All ordinary, foreseeable, and design-related ESS5 obligations within the Contractor's scope shall remain included in the Contract Price.

The Contractor acknowledges that:

- the Provisional Sum is a financial mechanism only;
- it does not transfer authority for entitlement determination, eligibility assessment, compensation valuation, or negotiation;
- payments shall be made only upon the Employer's prior written approval and the Engineer's written instruction, and under full supervision of the Employer.

Any interaction between the Contractor and PAPs shall be conducted in coordination with the Employer and in accordance with approved ESS5 instruments. The Contractor implements approved measures solely as an executing entity, strictly in accordance with written instructions from the Engineer following prior written approval by the Employer. The Contractor has no authority over eligibility, entitlements, compensation rates, or any interaction with affected persons outside of what is explicitly authorised by the Employer. Where the Contractor is instructed to implement supplementary ESS5 measures involving cash payments, in-kind assistance, or other support, such implementation shall be carried out strictly in accordance with the Employer's instructions and the applicable payment and reimbursement provisions of the Contract.

### 11.10.5 Monitoring, Audit and Third-Party Oversight

Implementation of ESS5-related activities shall be subject to:

- supervision by the CSC/Engineer;
- independent monitoring and audit by the PIOC;
- review by the Employer and the World Bank.

The Contractor shall cooperate fully with monitoring and audit activities and provide access to relevant information, sites, and records. The CSC/Engineer shall verify all expenditure and implementation evidence before reimbursement.

The PIOC shall review the RP/LRP and recommend World Bank No-Objection before construction commences. Prior to construction commencement on each section, the PIOC shall review the RP/LRP and provide its written opinion to the Employer and the World Bank; the Contractor shall not commence construction on the relevant section until the World Bank's No-Objection to the RP/LRP has been issued.

The PIOC will conduct External Resettlement Monitoring (ERM) as an independent monitor in accordance with ESS5, the approved RP and LRP, and applicable national legislation. The scope will include verification of eligibility and entitlements, compensation and assistance delivery (including to informal users and vulnerable groups), functionality of resettlement-related grievance mechanisms, and assessment of livelihood restoration outcomes.

The PIOC shall independently monitor implementation and opine on each sectional completion reports to be prepared by Engineer/CSC before the World Bank's No-Objection is sought. No measures shall be implemented and no reimbursement shall be made without this verification chain being complete.

The PIOC will prepare ERM reports and recommend corrective actions to the Employer and, where required, to the World Bank. The Contractor shall cooperate fully with such monitoring activities and provide access to relevant information, sites, and records, as required.

## 11.11. Provisional Sums for Environmental and Social Outcomes

### 11.11.1 Purpose and Nature of E&S Provisional Sums

E&S Provisional Sums shall be included in the Contract to facilitate implementation of approved supplementary specific E&S mitigation measures required to comply with the World Bank ESF, the ESCP, and applicable E&S instruments.

Such Provisional Sums are financial mechanisms only and are not intended to:

- transfer E&S responsibilities from the Contractor to the Employer;
- alter the allocation of roles and responsibilities defined in the Contract;
- create discretionary authority for the Contractor in relation to E&S matters.

For the avoidance of doubt, the E&S Provisional Sum may be used only for supplementary E&S mitigation measures required to comply with the applicable ESSs, to the extent that such measures were not expressly identified, quantified, or priced under the Contract at the time of Contract signature, and only where they are approved by the Employer and instructed in writing by the Engineer in accordance with the Contract. All ordinary, foreseeable, and design-related E&S

obligations required for compliance with the Contract, the ESIA, ESMP, C-ESMP, RP/LRP, ESS5, and other applicable E&S requirements shall remain included in the Contract Price, without prejudice to the Employer's statutory responsibilities under national law.

### 11.11.2 Scope of Application

E&S Provisional Sums may be used, where applicable, only to support implementation of approved supplementary mitigation measures that were not expressly identified, quantified, or priced under the Contract at the time of Contract signature, related to, inter alia:

- livelihood restoration and transitional assistance measures not covered under national expropriation legislation;
- support measures for informal users, squatters and vulnerable groups identified under ESS5;
- targeted training, awareness-raising, or community support activities required under the ESCP.

The scope above is indicative and subject to prior written approval by the Employer and written instruction of the Engineer in accordance with the Contract.

### 11.11.3 Governance and Control of Provisional Sums

Use of E&S Provisional Sums shall be subject to the following governance principles:

- Provisional Sums shall be expended only upon prior written approval of the Employer and written instruction of the Engineer;
- the Contractor shall not independently decide on the use or allocation of Provisional Sums;
- all expenditures shall be linked to approved E&S mitigation measures;
- implementation shall be carried out under the supervision of the CSC/Engineer.

The Contractor's role shall be limited to implementing approved measures and making payments as instructed.

### 11.11.4 Oversight, Audit and Transparency

Implementation of E&S Provisional Sums shall be subject to:

- supervision by the CSC/Engineer;
- independent audit and monitoring by the PIOC;
- review by the Employer and, where required, the World Bank.

The Contractor shall maintain clear records of all activities and expenditures related to Provisional Sums and shall make such records available for audit.

The Contractor acknowledges that the E&S Provisional Sum shall not be construed as a cap or limitation of its E&S obligations under the Contract.

## 11.12. ESS6 – Biodiversity Conservation

### 11.12.1 Baseline Information and Use of Existing Assessments

The Contractor acknowledges that the ESIA and ESMP include baseline biodiversity information and preliminary impact assessments.

Such baseline information is indicative and may require updating, refinement, or supplementation during ESIA, ESMP, BMP and BAP finalization to reflect:

- final design and construction methods;
- site-specific conditions;
- seasonal variability of species and habitats;
- impacts associated with Project Facilities and Associated Facilities.

### 11.12.2 Identification and Assessment of Biodiversity Risks and Impacts

The Contractor shall identify and assess biodiversity-related risks and impacts arising from:

- land take and vegetation clearance;
- habitat fragmentation and disturbance;
- noise, vibration, dust, and lighting;
- traffic and construction-related mortality;
- establishment and operation of Project Facilities/Associated Facilities;
- changes in hydrology or water quality.

Where required, additional biodiversity surveys or studies shall be conducted in accordance with requirements of disclosed E&S instruments and ESS6 and GIIP.

### 11.12.3 Mitigation Hierarchy and Biodiversity Management Measures

The Contractor shall apply the mitigation hierarchy to biodiversity-related impacts as follows:

1. Avoidance – modifying design or construction methods to avoid impacts on sensitive habitats or species;
2. Minimization – reducing the scale, duration, or intensity of unavoidable impacts;
3. Mitigation – implementing measures to restore or rehabilitate affected habitats;
4. Compensation or Offset – where residual impacts remain, subject to approval by the Employer and the World Bank. The Contractor shall be responsible for preparing related sub-management plans as required in the BMP, such as Biodiversity Offset Management Plan, No Net Loss (NNL) and Net Gain Strategy and Post-construction fatality monitoring (PCFM) Protocol.

Mitigation measures shall be incorporated into the finalized ESIA, the finalized ESMP, C-ESMP, BMP and BAP as applicable.

### 11.12.4 Sensitive Habitats and Species

Where sensitive habitats, including critical habitats or habitats supporting priority biodiversity features, natural habitats, or modified habitats are present within the Project area or areas of influence, the Contractor shall:

- implement site-specific mitigation measures;

- comply with seasonal restrictions, where applicable;
- control access to sensitive areas;
- prevent unnecessary disturbance to fauna and flora.

Works in proximity to sensitive habitats shall be planned and implemented with heightened environmental controls.

### 11.12.5 Vegetation Clearance and Restoration

Vegetation clearance shall be limited to the minimum area required for construction.

The Contractor shall:

- obtain all necessary permits and approvals prior to vegetation clearance;
- implement measures to prevent unnecessary damage to surrounding vegetation;
- carry out restoration and reinstatement of affected areas following construction, in accordance with the finalized ESMP and BMP.

Restoration measures shall aim to achieve ecological functionality consistent with pre-construction conditions, where feasible.

### 11.12.6 Invasive Alien Species

The Contractor shall implement measures to prevent the introduction and spread of invasive alien species, including:

- cleaning of vehicles and equipment;
- management of imported materials;
- monitoring of disturbed areas.

Any occurrence of invasive species shall be addressed promptly in coordination with relevant authorities. Contractor will be responsible for preparation of an Invasive Species Management Procedure as part of the BMP, and undertake regular inventories of invasive species and where identified implement eradication measures in line with plan, including removal of invasive species as part of site clearance activities to avoid transfer to general waste management / spoil storage areas.

### 11.12.7 Sustainable Management of Living Natural Resources

Where the Project involves the use of living natural resources, the Contractor shall ensure that such resources are managed sustainably and in compliance with applicable legal and ESS6 requirements.

### 11.12.8 Monitoring and Reporting

The Contractor shall monitor biodiversity-related impacts and mitigation measures as part of E&S monitoring.

Monitoring may include, where relevant:

- habitat disturbance and restoration progress;
- effectiveness of mitigation and offset measures;

- occurrence of wildlife incidents or mortality.

Monitoring results shall be reported in regular E&S monitoring reports.

### 11.12.9 Subcontractors and Third Parties

The Contractor shall ensure that subcontractors and service providers comply with the requirements of this Section.

The Contractor shall remain responsible for biodiversity-related impacts arising from subcontracted activities.

## 11.13. ESS8 – Cultural Heritage

### 11.13.1 Known Cultural Heritage

The Contractor acknowledges that the ESIA and ESMP may identify known cultural heritage resources within or near the Project area.

Where known cultural heritage is present, the Contractor shall:

- avoid impacts where feasible;
- implement mitigation measures identified in the ESIA, ESMP, CHMP and relevant permits;
- comply with all conditions imposed by competent national authorities.

Works affecting known cultural heritage shall be carried out only after obtaining the necessary approvals and clearances, and in accordance with the Contractor's obligations under the Conditions of Contract, including FIDIC Sub-Clause 4.23, as applicable.

### 11.13.2 Chance Find Procedure

The Contractor shall implement a Chance Find Procedure consistent with ESS8 and applicable national legislation.

The Chance Find Procedure shall apply to all excavation and ground-disturbing activities and shall, as a minimum, require that:

- work is stopped immediately in the vicinity of the find;
- the area is secured to prevent damage or removal;
- the Engineer and the relevant authorities are notified without delay;
- works resume only after authorization is granted by the competent authority.

The Chance Find Procedure shall be communicated to all relevant workers and subcontractors.

### 11.13.3 Training and Awareness

The Contractor shall ensure that relevant personnel, including site supervisors and machine operators, receive appropriate training on:

- identification of potential cultural heritage;
- procedures to be followed in the event of a chance find;
- roles and responsibilities under ESS8.

### 11.13.4 Monitoring and Reporting

The Contractor shall monitor compliance with cultural heritage protection measures and report any incidents, chance finds, or non-compliances as part of E&S monitoring.

Any chance find or cultural heritage-related incident shall be reported promptly, within 24 hours from the initial find(s) to the Engineer and the Employer.

### 11.13.5 Subcontractors and Third Parties

The Contractor shall ensure that subcontractors and service providers comply with the requirements of this Section and the Chance Find Procedure.

The Contractor shall remain responsible for cultural heritage protection across all Project activities.

## 11.14. ESS10 – Stakeholder Engagement

### 11.14.1 Stakeholder Engagement Plan (SEP)

The SEP prepared for the Project defines the overall framework for stakeholder engagement and information disclosure.

The Contractor shall:

- comply with engagement and disclosure requirements applicable to the updated ESIA and construction activities;
- undertake site-specific stakeholder mapping and analysis, building on the SEP, to identify affected and interested stakeholders relevant to construction activities;
- update stakeholder identification and engagement approaches based on final design, construction methods, and site-specific risks and impacts;
- finalize the SEP;
- implement the SEP during construction.

### 11.14.2 Information Disclosure

The Contractor shall support timely disclosure of Project-related information relevant to design and construction activities, including, as appropriate:

- updated ESIA and ESMP;
- construction schedules and phasing;
- anticipated impacts and mitigation measures;
- traffic management arrangements;
- recruitment arrangements;
- changes to access, services, or land use affecting communities.

Information shall be disclosed in a manner that is understandable and accessible to affected stakeholders, taking into account language, literacy, and cultural considerations.

### 11.14.3 Engagement with Affected Communities

The Contractor shall engage with affected communities in a respectful and culturally appropriate manner, particularly where construction activities may result in:

- temporary disturbances or access restrictions;
- increased traffic or safety risks;
- noise, dust, or other nuisance impacts;
- establishment of Project Facilities or Associated Facilities;
- community concerns, grievances, and feedback arising from Project activities;
- disruption to livelihoods, agricultural activities, or local economic activities;
- temporary or permanent restriction of access to land, natural resources, common areas, or community assets;
- influx of workers and associated social impacts, including increased pressure on local services and infrastructure;
- impacts on cultural heritage, sacred sites, or areas of historical significance;
- displacement or resettlement of households, businesses, or community facilities;
- impacts on water availability, quality, or drainage patterns affecting local communities;
- health and safety risks to surrounding communities, including exposure to hazardous materials or construction-related accidents;
- disproportionate impacts on vulnerable or disadvantaged groups.

Engagement activities shall be coordinated with the Engineer and the Employer and implemented in accordance with the finalized SEP.

Engagement approaches shall be informed by the stakeholder analysis and baseline assessment of community conditions, including local sensitivities, socio-economic context, potential impact pathways, and cumulative social risks and impacts associated with other existing, planned, or reasonably foreseeable developments within the area of influence.

The Contractor shall develop and implement a Stakeholder Engagement Outreach Program on a monthly basis to ensure systematic and inclusive engagement with all relevant stakeholders during construction. This shall include, but not be limited to, consultations, Open Door Days, roundtables, and targeted meetings.

The Contractor shall organize Open Door Days consultations at the community level at least once per year, and more frequently as necessary, particularly during peak construction periods.

The Contractor shall maintain a stakeholder database and systematically track the number and type of stakeholders consulted, irrespective of the consultation format. The Contractor shall record and report the number of stakeholders consulted, including the number of Open Door Days consultations conducted annually, as part of E&S monitoring reports.

The Contractor shall conduct participant surveys during each Open Door Days session to gather feedback on the effectiveness of the consultations. The surveys shall be anonymous and, to the extent possible, utilize digital solutions, while also providing alternative means to ensure accessibility for all community participants.

### 11.14.4 Vulnerable Groups

The Contractor shall support the identification and engagement of vulnerable or disadvantaged groups, as defined in the SEP and ESS10.

Where construction activities may disproportionately affect vulnerable groups, the Contractor shall implement appropriate engagement and mitigation measures in coordination with the Engineer and the Employer.

The Contractor shall assess potential barriers to participation for vulnerable groups and implement targeted, inclusive engagement strategies to ensure their effective involvement.

In order to ensure the effectiveness of engagement strategies, the Contractor shall conduct a Vulnerability Assessment in accordance with ESS10, to systematically identify individuals or groups who may be differentially or disproportionately affected by the project due to their vulnerable status, and to inform the design of tailored mitigation and engagement measures accordingly.

### 11.14.5 Grievance Mechanism for Communities

The Contractor shall support the operation of a Project-level grievance mechanism for communities in accordance with ESS10.

The Contractor shall:

- inform affected communities of the grievance mechanism;
- receive and record grievances related to construction activities;
- acknowledge receipt of grievances within two (2) working days and inform the complainant that the grievance has been registered;
- cooperate with the Engineer and the Employer in the timely resolution of grievances;
- provide a substantive response to grievances within fifteen (15) working days, including proposed corrective actions where applicable;
- where resolution cannot be achieved within this period, inform the complainant of the reasons for delay and the expected timeline for resolution;
- include grievance records, status, trends, response times, corrective actions, and any overdue grievances in the Monthly E&S Reports to the Engineer and the Employer;
- ensure that SEA/SH-related grievances are handled through safe, confidential, survivor-centred, and non-retaliatory procedures, in accordance with the SEP and applicable E&S instruments;
- implement corrective actions related to construction activities, where required.

The Contractor shall not obstruct access to the grievance mechanism and shall not retaliate against complainants and/or other project stakeholders.

### 11.14.6 Monitoring and Reporting

The Contractor shall document stakeholder engagement activities related to construction and report such activities as part of E&S monitoring reports.

Documentation may include:

- records of meetings and consultations;

- information disclosure activities;
- grievances received and addressed;
- follow-up actions and outcomes;
- results of stakeholder mapping and analysis, and any updates to baseline conditions identified during construction.

### 11.14.7 Subcontractors and Third Parties

The Contractor shall ensure that subcontractors and service providers comply with the requirements of this Section and conduct stakeholder engagement in a manner consistent with the finalized SEP and ESS10.

The Contractor shall remain responsible for stakeholder engagement impacts arising from subcontracted activities.

## 11.15. Monitoring, Reporting, Audit and Enforcement

### 11.15.1 Contractor's Environmental and Social Organization and Capacity

The Contractor shall establish and maintain adequate E&S staffing and organizational arrangements throughout Project implementation.

As a minimum, the Contractor shall:

- appoint competent E&S personnel with authority to implement E&S requirements on site;
- ensure continuous E&S presence on active worksites;
- assign clear responsibilities for environment, social, labor/OHS, and community liaison functions, proportionate to Project risks;
- ensure that subcontractors have adequate E&S staffing and supervision.

The Contractor shall submit an E&S organizational chart and CVs of key E&S personnel for review and interview by the Engineer in accordance with Section 11.15.2.

The Contractor shall mobilize all key E&S personnel prior to commencement of design finalization and preparation or finalization of the relevant E&S instruments, and in any event prior to commencement of any construction activities.

All E&S personnel shall receive online training (https://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/esf-training) on the World Bank ESF, prior to mobilization. The Contractor shall maintain records of such trainings and make them available to the Engineer and the Employer upon request.

No physical works, site establishment, or mobilization of construction activities shall commence unless and until the Contractor's key E&S personnel, as defined under the Contract, have been appointed, mobilized, and approved by the Engineer.

The Contractor shall ensure the continuous presence of such personnel on site throughout the execution of the Works.

Failure to mobilize and maintain the required E&S personnel shall constitute non-compliance under the Contract and may result in suspension of the progress of all or part of the works under

Sub-Clause 8.9 of the Contract or other contractual remedies. Any such suspension of all or part of the Works shall be deemed to be due to the Contractor's default and responsibility.

### 11.15.2. E&S Staffing Arrangements

This section forms an integral part of the Contract and sets out the minimum mandatory E&S staffing requirements applicable to the Contractor for each Lot.

The relevant academic qualifications and the minimum required years of relevant and overall professional experience for the E&S personnel specified in this Appendix shall be as defined in the Contractor's Representative and Key Personnel provisions of the Contract.

The Contractor shall not reduce, omit, or downgrade these minimum staffing levels without the prior written approval of the Engineer.

The Contractor shall, where necessary, increase the number of E&S personnel to ensure adequate coverage of all active work fronts, shifts, and Project locations, taking into account the scale, complexity, and risk profile of the Works.

Any failure to maintain the minimum required E&S staffing levels shall constitute a material non-compliance under the Contract and may result in suspension of works and/or application of financial deductions or other contractual remedies.

The Contractor shall ensure that all key E&S personnel are mobilized and approved by the Engineer prior to commencement of design finalization, preparation or finalization of E&S instruments, and in any event prior to commencement of any construction activities. Key E&S personnel shall not be replaced without the prior written approval of the Engineer. As referenced in Section 2.4 Contractor's Representative and Key Personnel, the E&S-related staff are presented in further detail in the table below under this section.

| D+B Contractor E&S Personnel | Level of Engagement | Minimum Number of Required E&S Personnel | | | |
|---|---|---|---|---|---|
| | | Lot-1 | Lot-2 | Lot-3 | Lot-4 |
| **Environmental and Social Manager** | **Full-time** | 1 | 1 | 1 | 1 |
| **Environmental Specialist** | **Full-time** | 2 | 2 | 2 | 2 |
| **Marine Environmental Specialist** | **Full-time** | 0 | 0 | 1 | 0 |
| **Social Specialist** | **Full-time** | 1 | 1 | 2 | 2 |
| **Resettlement and Livelihood Restoration Specialist** | **Full-time** | 1 | 1 | 1 | 2 |
| **OHS Manager** | **Full-time** | 1 | 1 | 1 | 1 |
| **OHS Engineer / Site Safety Engineer** | **Full-time** | 2 | 2 | 2 | 2 |
| **OHS Documentation / Reporting Specialist** | **Full-time** | 1 | 1 | 1 | 1 |
| **Community Liaison Officer** | **Full-time** | 2 | 2 | 2 | 2 |
| **Biodiversity & Ecology Specialist** | **Full-time** | 1 | 1 | 2 | 1 |
| **Archaeologist / Cultural Heritage Expert** | **Full-time** | 1 | 1 | 1 | 2 |
| **Gender and SEA/SH Specialist** | **Full-time** | 1 | 1 | 1 | 1 |

| D+B Contractor E&S Personnel | Level of Engagement | Minimum Number of Required E&S Personnel | | | |
|---|---|---|---|---|---|
| | | Lot-1 | Lot-2 | Lot-3 | Lot-4 |
| **Legal Expert** | **On-call basis** | 1 | 1 | 1 | 1 |
| **Valuation Expert** | **On-call basis** | 1 | 1 | 1 | 1 |
| **Labor Specialist** | **Full-time** | 1 | 1 | 1 | 1 |

### 11.15.3 Monitoring Requirements

#### 11.15.3.1 Routine Monitoring

The Contractor shall implement routine monitoring to verify compliance and the effectiveness of mitigation measures.

Monitoring shall be documented through logs, checklists, inspection records, and photographic evidence where appropriate.

#### 11.15.3.2 Compliance Monitoring and Inspections

The Contractor shall conduct internal E&S inspections at a frequency proportionate to Project risks, and at minimum:

- weekly inspections at active work fronts, Project Facilities, worker accommodation areas, storage areas, workshops, batching plants, spoil disposal areas, access roads, and other temporary facilities;
- daily checks for high-risk activities including lifting operations, confined spaces, working at height, excavation works, energy isolation/LOTO, hot works, electrical works, hazardous materials, night works, traffic management in sensitive areas, and works near communities or sensitive receptors;
- verification of activity-specific risk assessments, method statements, Permit to Work records, competency records, training records, medical fitness records, toolbox talks, and periodic inspection records for critical equipment, where relevant;
- verification of key ESHS controls, including OHS controls, emergency response and medical arrangements, PPE use, housekeeping, waste and hazardous materials management, pollution prevention, community health and safety measures, labor controls, worker accommodation conditions, security arrangements, and subcontractor compliance.

The Engineer and the Employer shall have the right to conduct inspections (e.g. monthly E&S audits) at any time. The Contractor shall provide full access to sites, facilities, records, personnel, subcontractors, labor service providers, suppliers, and service providers as required for such inspections.

### 11.15.4 Reporting Requirements

#### 11.15.4.1 Regular E&S Reporting

The Contractor shall submit monthly E&S monitoring reports in the format required by the Employer.

Monthly E&S monitoring reports shall be submitted to the Employer, with a copy to the Engineer, the PMC and the PIOC, within fifteen (15) days following the end of each reporting period. The Employer shall transmit such reports to the World Bank as annexes to the reports required under the applicable ESCP reporting provisions. The Contractor shall also provide additional or specific monitoring reports at such intervals as may be requested by the Employer or the World Bank.

As a minimum, the Contractor shall submit monthly E&S reports including:

- summary of activities undertaken and works progress relevant to E&S;
- compliance status against the finalized ESIA, the finalized ESMP, the finalized SEP and C-ESMP and sub-plans;
- monitoring results and trends (including exceedances);
- waste and hazardous materials management summary;
- labor statistics, including local/non-local and gender-disaggregated data, subcontractor workforce data, working hours, overtime, worker accommodation status, and labor compliance checks;
- worker and community grievances received, status, and resolution;
- incidents and accidents, investigations, and corrective actions;
- training conducted (including SEA/SH, OHS, community interface);
- summary of ESHS inspections, audits, non-compliances, corrective actions, stop-work instructions, and enforcement actions during the reporting period;
- upcoming activities and E&S risks for the next period.

Reports shall be supported by evidence and records upon request. Format of the Monthly Report will be agreed between the Contractor, and the Engineer and the Employer before submission of the first Monthly Report.

#### 11.15.4.2 Immediate Notifications and Incident Reporting

The Contractor shall promptly notify the Engineer and the Employer of any incident or accident relating to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers, including those resulting in death, lost time injury or significant injury to workers or the public; acts of violence, discrimination or protest; unforeseen impacts to cultural heritage or biodiversity resources; pollution of the environment; structural failure; forced or child labor; displacement without due process (forced eviction); allegations of SEA, or SH; or disease outbreaks. Format of the Reporting documents will be provided to the Contractor by the Engineer and the Employer.

The Contractor shall:

- provide an initial notification to the Engineer immediately and no later than twenty-four (24) hours after becoming aware of the incident;
- submit a detailed incident report, including root cause analysis and a corrective action plan, within ten (10) days following the initial notification, unless otherwise agreed in writing by the Engineer and the Employer.

### 11.15.5 Grievance and Feedback Tracking

The Contractor shall support operation of:

- the worker grievance mechanism (ESS2); and
- the community grievance mechanism (ESS10).

The Contractor shall maintain grievance logs including:

- date received, category, location, and complainant type (where available);
- actions taken and resolution status;
- time to closure;
- corrective and preventive actions.

### 11.15.6 Independent Monitoring and Audit

The Contractor shall cooperate fully with independent monitoring and audits conducted by the PIOC (or other parties where necessary) and shall provide:

- access to sites, facilities including Project Facilities and Associated Facilities, and work fronts;
- access to E&S documentation, records, monitoring results, and logs;
- access to staff and subcontractors for interviews, as required, and access to staff employment records, contracts, and health and safety records, where applicable.

The Contractor shall respond to audit findings in a timely manner and implement corrective actions required by the Engineer and the Employer.

The PIOC will independently verify that all project activities comply with the World Bank's ESF, Turkish laws, and GIIP. The PIOC will advise the Employer and the World Bank on compliance status and areas for improvement.

The PIOC will conduct external labor audits under ESS2, at least semi-annually, to assess compliance with national labor legislation, the C-LMP, and ESS2 requirements, including working conditions, worker accommodation (where applicable), labor influx management, SEA/SH measures, worker grievance mechanisms, and OHS. Findings and corrective actions will be documented and reported to the Engineer, the Employer and the World Bank. The CSC/Engineer shall review the findings of the PIOC labour audits and, where corrective actions are required, shall issue the relevant instructions, non-compliance notices, or corrective action requirements to the Contractor under the Contract. Such instructions, notices, and corrective action requirements issued by the CSC/Engineer shall be binding on the Contractor. The Contractor shall implement corrective actions within the timeframe specified by the CSC/Engineer. Failure to correct material non-compliances may result in contractual remedies in accordance with the Contract.

### 11.15.7 Non-Compliance Management and Corrective Action

#### 11.15.7.1 Corrective Action Plans

Where non-compliances are identified by the CSC/Engineer, Employer, the PMC or PIOC, the Contractor shall:

- record the non-compliance;
- propose corrective and preventive measures;

- agree timelines with the Engineer;
- implement the measures and provide evidence of closure.

Corrective actions shall be implemented in a timely manner proportionate to the severity of the risk. Material non-compliances, including failure to implement corrective actions within the agreed timeframe, may be escalated by the CSC/Engineer in accordance with the Contract, including through notices to correct and other applicable contractual remedies.

#### 11.15.7.2 Stop-Work and Site Controls

Where an activity presents an imminent risk to workers or communities, or a risk of significant environmental and/or social harm, the Engineer may require suspension of the relevant activity in accordance with the Contract, including Sub-Clause 8.9 where applicable, until adequate controls are in place.

The Contractor shall comply promptly with such instructions and shall not resume works until authorized by the Engineer. Where such suspension arises from the Contractor's non-compliance, any related delay shall be the Contractor's responsibility and shall not give rise to Extension of Time, additional payment, or compensation.

### 11.15.8 Access to Site Conditionality Related to Land Acquisition and Resettlement

Access to land and commencement of works shall be strictly conditional upon completion of all land acquisition and resettlement-related processes.

For the avoidance of doubt, the Contractor shall not access, occupy, or commence any construction activities on any land parcel unless and until:

(a) land acquisition procedures under applicable national legislation have been fully completed;

(b) where informal users, squatters, or livelihood impacts are present, all applicable RP/LRP measures, including cash compensation, in-kind assistance, transitional support, livelihood restoration measures, and any supplementary ESS5 measures required under the Contract, have been fully implemented and verified; and

(c) such implementation has been verified through a sectional RP/LRP Completion Report to be prepared by the CSC/Engineer, accepted by the Employer, and, reviewed and opined upon by the PIOC, where required under the Contract or applicable financing requirements, subject to the World Bank's no-objection.

Any access to land or commencement of works in violation of this requirement shall be considered unauthorized and shall be carried out entirely at the Contractor's risk, cost, and liability, without prejudice to any other remedies available to the Employer under the Contract.

The Employer may identify specific locations or sections of the alignment as restricted ("locked") areas which shall not be accessible to the Contractor until all RP/LRP requirements for such locations have been completed, verified, and approved by the World Bank. Sectional handover of sites may be applied to allow phased access following the World Bank's No Objection. Prior to seeking the World Bank's No-Objection for each section, the PIOC shall review and opine on the corresponding sectional Completion Report, confirming that all RP/LRP requirements for that section have been duly implemented and verified.

### 11.15.9 Enforcement and Contract Administration

E&S obligations are contractual requirements and shall be administered through normal contract management processes.

The Contractor acknowledges that repeated or material non-compliance by the Contractor, its Subcontractors, suppliers, or service providers may lead to contractual remedies in accordance with the Contract, including measures such as:

- withholding of payments related to non-compliant activities in accordance with the applicable payment certification provisions of the Contract, including Sub-Clause 14.6 where applicable;
- suspension of the progress of all or part of the works under the provisions of Sub-Clause 8.9 of the Contract until compliance is restored;
- application of other contractual remedies available to the Employer up to and including termination of the Contract.

In the event that an ESHS non-compliance or deficiency is identified and formally notified to the Contractor by the Employer or the Engineer, the Contractor shall take immediate corrective action, and in any case within the timeframe specified in the notification or as agreed with the Engineer, commensurate with the severity of the non-compliance. Without prejudice to the Contractor's obligations under Sub-Clause 4.4 of the Contract, the Contractor shall be responsible for managing and coordinating all Subcontractors' works, and for the acts or defaults of any Subcontractor and any Subcontractor's agents or employees, as if they were the acts or defaults of the Contractor. This requirement shall be read together with, and enforced through, the applicable provisions of the Particular Conditions of Contract and other contractual remedies available to the Engineer and the Employer.

Where the Contractor fails to implement the required corrective actions within the specified timeframe, the Employer may apply contractual remedies, including but not limited to withholding of interim payments, suspension of the relevant works, or other contractual remedies, in accordance with the Conditions of Contract.

For repeated or persistent non-compliances, or where the non-compliance poses a significant risk to the environment, workers, or communities, the Employer may impose financial deductions on a daily basis proportionate to the severity of the non-compliance until such non-compliance is remedied, without prejudice to any other contractual rights.

No additional payment shall be made to the Contractor in relation to compliance with ESHS requirements, and all such obligations shall be deemed to be included in the Contract Price.

Failure to mobilize or maintain key E&S personnel in accordance with the Contract shall be considered a material non-compliance and may trigger contractual remedies, including suspension of the progress of all or part of the works in accordance with the applicable suspension provisions of the Contract and application of financial deductions or withholding of payments in accordance with the applicable payment certification provisions of the Contract, as applicable.

### 11.16. Contractual Administration of E&S Requirements

All E&S requirements set out in the Employer's Requirements form an integral and inseparable part of the Contract scope and shall be administered in accordance with the Conditions of Contract and the Particular Conditions of Contract.

Under the Design–Build model, the Contractor is responsible for final design development and for ensuring that all E&S assessments, instruments, and mitigation measures are aligned with the final design. Any updates, refinements, or supplements to E&S instruments arising from final design development or construction methodology shall not, in themselves, constitute a Variation or give rise to any claim for additional time or cost.

The need to undertake additional E&S studies, surveys, or mitigation measures identified during ESIA/ESMP finalization or during Project implementation shall not be considered unforeseen, provided such measures are consistent with the World Bank ESF and GIIP, and fall within the Contractor's obligations under the Contract.

E&S Provisional Sums are a financial mechanism only and shall not be interpreted as a cap or limitation of the Contractor's E&S responsibilities, nor as an indication that such obligations are optional or discretionary.

E&S obligations shall be administered in accordance with the Conditions of Contract.

### 11.17. Final Enforceability

All E&S requirements contained in this Employer's Requirements and referenced E&S instruments constitute binding contractual obligations of the Contractor and shall be treated as core obligations under the Contract.

E&S requirements shall be interpreted in accordance with the contractual hierarchy of documents and in a manner that ensures compliance with the World Bank ESF, the ESCP, and the approved E&S instruments for the Project.

Compliance with E&S obligations shall be enforceable through normal contract administration mechanisms, including supervision by the Engineer, monitoring, reporting, audit, and the application of corrective actions. Failure to comply with E&S obligations shall constitute non-compliance under the Contract.

Any failure by the Employer, the Engineer, the PMC, or the PIOC to identify, notify, or enforce E&S non-compliance at any time shall not be construed as a waiver of, or limitation to, the Contractor's E&S obligations.

E&S obligations shall apply throughout the duration of the Contract, including design finalization, construction, operation, and decommissioning of Project Facilities and Associated Facilities, and shall survive interim approvals, payments, and completion certificates to the extent necessary to remedy E&S non-compliance.

# 12. Contractual Performance Framework

## 12.1. Purpose and Application

The Contractor's performance shall be monitored throughout the duration of the Contract against the Contractual Key Performance Indicator Framework set out in this Chapter. This Framework establishes objective, measurable performance indicators across five performance clusters: Programme and Delivery Performance (Cluster P), Technical Quality and Conformance (Cluster Q), Health, Safety and Occupational Performance (Cluster S), Environmental, Social and Environmental and Social Framework Compliance (Cluster E), and Risk and Interface Management (Cluster R).

The Key Performance Indicator Framework shall apply from the Commencement Date through to the issue of the Taking-Over Certificate for each Lot, and where specified in the Key Performance Indicator Schedule at Section 12.3, through the Defects Notification Period. Key Performance Indicator obligations are assigned to the Contractor. Monitoring and verification obligations are assigned to the Engineer acting through the Construction Supervision Consultant, unless otherwise stated.

The Contractual Performance Framework shall be read in conjunction with Sub-Clauses 1.1.95, 4.26, 8.5, 14.6.3 to 14.6.6, 15.2.1, 18.1, 18.4 and 21.4 of the Particular Conditions of Contract.

The Particular Conditions of Contract shall govern all financial, contractual and procedural consequences of KPI performance. Nothing in this Chapter shall create an entitlement to suspension, adjustment, release or revision beyond that expressly provided in the Particular Conditions of Contract.

- Sub-Clause 1.1.95 — Milestone definition;
- Sub-Clause 4.26 — Milestones;
- Sub-Clause 8.5 — Extension of Time;
- Sub-Clause 14.6.3, including paragraph (i) — KPI Performance Withholding and EOT suspension;
- Sub-Clause 14.6.4 — Aggregate IPC Cap;
- Sub-Clause 14.6.5 — KPI Data Dispute Resolution;
- Sub-Clause 14.6.6 — Material Scope Change target review;
- Sub-Clause 15.2.1 — Critical KPI termination threshold;
- Sub-Clause 18.1 — Exceptional Events;
- Sub-Clause 18.4 — Consequences of an Exceptional Event; and
- Sub-Clause 21.4 — DAAB referral.

Nothing in this Chapter shall be construed as restating, modifying, or supplementing any of those provisions. In the event of any inconsistency between this Chapter and the Particular Conditions of Contract, the Particular Conditions of Contract shall prevail.

### 12.2. Treatment of KPI Performance during an Extension of Time

An extension of the Time for Completion or of the time for completion of any Milestone shall not, of itself, suspend KPI monitoring, reporting, verification or the application of the Contractual Performance Framework.

No suspension shall apply where the relevant delay or Extension of Time:

(a) arises from a matter allocated to the Contractor's risk under the Contract;

(b) was caused or contributed to by the Contractor, the Contractor's Personnel or any Subcontractor; or

(c) does not materially prevent the achievement of the relevant KPI target.

Where the Contractor considers that:

(a) an act, omission, prevention or delay attributable to the Employer, the Engineer, the Employer's Personnel or another contractor engaged by the Employer; or

(b) an Exceptional Event under Sub-Clause 18.1 [Exceptional Events], having consequences under Sub-Clause 18.4 [Consequences of an Exceptional Event],

has materially prevented achievement of one or more KPI targets, the Contractor shall identify each affected KPI separately in the particulars submitted in support of its claim under Sub-Clause 8.5 [Extension of Time for Completion].

For each KPI claimed to be affected, the Contractor shall submit:

(a) the relevant KPI code, description and target;

(b) the event or circumstance relied upon;

(c) the direct causal relationship between the event or circumstance and the inability to achieve the KPI target;

(d) the date on which the material effect commenced and the date on which it ceased or is expected to cease;

(e) the relevant supporting records, programme information and KPI performance data;

(f) details of any delay or contribution attributable to the Contractor; and

(g) the mitigation, avoidance and recovery measures implemented or proposed by the Contractor.

The Contractor shall bear the burden of demonstrating, separately for each KPI, that achievement of the KPI target was directly and materially prevented by the relevant event or circumstance. A

general allegation of delay, disruption or Extension of Time shall not be sufficient to suspend KPI Performance Withholding.

As part of the determination under Sub-Clause 8.5, the Engineer shall determine:

(a) whether the relevant event or circumstance qualifies for the purposes of this Section;

(b) each KPI whose achievement was directly and materially prevented;

(c) the commencement and expiry dates of the period during which KPI Performance Withholding is suspended;

(d) any part of a reporting period during which the ordinary KPI regime remains applicable; and

(e) any consequential adjustment required to the approved programme baseline or affected interface target dates.

No blanket suspension of the Contractual Performance Framework shall apply. Any suspension shall be limited:

(a) to the KPI or KPIs specifically identified in the Engineer's determination;

(b) to the extent that achievement of each such KPI was directly and materially prevented; and

(c) to the period during which such direct material prevention continued.

The suspension period shall not automatically extend until the revised date of a Milestone or the revised Time for Completion. The suspension shall cease when the event or circumstance no longer materially prevents achievement of the relevant KPI, notwithstanding that the revised Time for Completion or revised Milestone date may occur later.

Pending the Engineer's determination under Sub-Clause 8.5:

(a) KPI monitoring, reporting and verification shall continue;

(b) the Contractor shall continue to update and submit the KPI Dashboard and all supporting data;

(c) the ordinary KPI regime shall continue to apply; and

(d) any proposed KPI Performance Withholding shall be dealt with in accordance with Sub-Clause 14.6.3 of the Particular Conditions of Contract.

If the Engineer subsequently determines that KPI Performance Withholding should have been suspended for an earlier period, any amount withheld in respect of the affected KPI during that approved period shall be released or credited in the next Interim Payment Certificate in accordance with Sub-Clause 14.6.3.

Throughout an approved suspension period, the Contractor shall continue to:

(a) update the KPI Dashboard;

(b) submit all underlying records, registers and supporting data;

(c) report the actual performance achieved against the affected KPI;

(d) identify all variances from the KPI target;

(e) implement all mitigation, avoidance and corrective measures that remain reasonably capable of performance; and

(f) cooperate with the Engineer in determining when the material effect has ceased.

The KPI Dashboard shall identify each KPI for each reporting period as:

(i) active and subject to the ordinary KPI regime;

(ii) temporarily suspended for KPI Performance Withholding purposes;

(iii) partially suspended for a specified part of the reporting period; or

(iv) under determination or dispute.

Performance data recorded during an approved suspension period shall be retained for monitoring, trend analysis and record purposes but shall not generate KPI Performance Withholding for the affected KPI and approved suspension period.

An approved suspension period shall be disregarded when calculating:

(a) the applicable KPI grace period;

(b) consecutive reporting periods of sustained breach;

(c) the consecutive compliant reporting periods required for recovery of amounts held in the notional KPI Performance Account; and

(d) the Critical KPI breach thresholds under Sub-Clause 15.2.1 of the Particular Conditions of Contract.

Any reporting-period count accrued before the suspension shall be paused, but shall not be extinguished, and shall resume from the first full reporting period following expiry of the suspension.

Nothing in this Section shall suspend, reduce or excuse any obligation relating to:

(a) health and safety;

(b) emergency response;

(c) incident, accident and near-miss notification;

(d) environmental or social incident reporting;

(e) protection of life, property, the Works or railway safety;

(f) submission of KPI data and supporting records; or

(g) any measure that remained reasonably capable of performance during the relevant event or circumstance.

An Extension of Time shall not, of itself, permanently amend a KPI target. Any permanent revision to a KPI target arising from a Variation or other material change in the scope or performance basis of the Works shall be dealt with exclusively under Sub-Clause 14.6.6 [Review of KPI Targets on Material Scope Change] of the Particular Conditions of Contract.

Any disagreement concerning the affected KPI, direct causation, the extent of material prevention or the duration of suspension shall be dealt with in accordance with Sub-Clause 14.6.5 [KPI Data Dispute Resolution Procedure] of the Particular Conditions of Contract.

## 12.3. KPI Categories and Critical KPI Designation

Key Performance Indicators are organised into five performance clusters as set out in Section 12.3. Each Key Performance Indicator is assigned a target, a measurement methodology, a reporting frequency, and a data source, as specified in the Key Performance Indicator Schedule.

Certain Key Performance Indicators are designated as Critical for the purposes of Sub-Clause 14.6.3 of the Particular Conditions of Contract. The following Key Performance Indicators are designated as Critical:

- Key Performance Indicator Q1 — Inspection and Test Plan Hold Point Compliance
- Key Performance Indicator S1 — Corrective Measure Implementation Rate Following Lost-Time Injury
- Key Performance Indicator S3 — Tunnelling Near-Miss Reporting Timeliness

The Critical designation reflects the nature of these obligations: each represents a binary, event-driven compliance requirement where a single failure carries direct and foreseeable consequences for safety, structural integrity, or the Engineer's ability to exercise contractual oversight. The contractual consequences of a Critical Key Performance Indicator breach — including the absence of a grace period and the conditions for immediate withholding — are governed exclusively by Sub-Clause 14.6.3 of the Particular Conditions of Contract.

The designation of a KPI as Critical shall not prevent the Engineer from determining, in exceptional circumstances, that KPI Performance Withholding is suspended where the strict requirements of Section 12.2 and Sub-Clause 14.6.3 are satisfied. However, no suspension of KPI Performance Withholding shall suspend or reduce the underlying health, safety, quality control, incident notification, emergency response or reporting obligation.

In particular, obligations relating to lost-time injury corrective measures, tunnelling near-miss notification and Inspection and Test Plan Hold Points shall continue to apply to the extent that they remain reasonably capable of performance.

## 12.4 Key Performance Indicator Schedule

**Cluster P — Programme and Delivery Performance:** The 127-kilometre, four-lot, multi-contract structure of the Istanbul North Rail Crossing Project creates hard interface target dates between civil lots and with the separate Signalling and Telecommunication contract. Schedule performance is accordingly the highest-consequence performance domain. Programme Key Performance Indicators are assessed against the four Milestones defined in Sub-Clause 1.1.95 of the Particular Conditions of Contract and the Contract Data, and against the programme baseline as may be revised following a formally endorsed Extension of Time under Sub-Clause 8.5.

**KPI P1 — Schedule Performance Index (SPI)**

| Field | Detail |
|---|---|
| **Definition** | Ratio of Earned Value (EV) to Planned Value (PV), calculated against the approved baseline Level 4 programme |
| **Target** | SPI ≥ 0.95, measured quarterly |
| **Measurement** | Earned Value Management (EVM) analysis conducted by the Contractor and verified by the CSC against the approved Primavera P6 baseline programme. |
| **Reporting Frequency** | Quarterly |
| **Data Source** | Contractor's monthly progress report; CSC verification |
| **Adjustment following an Extension of Time** | Where the Engineer determines an Extension of Time under Sub-Clause 8.5 and formally endorses a revised programme baseline, KPI P1 shall be measured against the revised approved baseline from the effective date identified in the Engineer's determination.<br>Pending formal endorsement of the revised baseline, the Contractor shall not unilaterally revise the baseline used for KPI P1 measurement.<br>A revised baseline shall not retrospectively excuse performance unrelated to the event giving rise to the Extension of Time. Any retrospective adjustment or release of KPI Performance Withholding shall be limited to the period and effect expressly identified in the Engineer's determination under Sub-Clause 8.5. |

**KPI P2 — Interface Target Date Achievement Rate**

| Field | Detail |
|---|---|
| **Definition** | Percentage of contractual interface target dates, identified in the project master schedule and achieved on or before the programmed date, covering civil lot-to-lot handovers and civil prerequisite deliverables for Package 2 (signalling) |
| **Target** | ≥ 90% of interface target dates achieved on time, measured quarterly |
| **Measurement** | CSC Interface Target Date Register and project master schedule, reviewed and signed off at each quarterly review meeting |
| **Reporting Frequency** | Quarterly |
| **Data Source** | CSC Interface management plan; PMC interface log |

| | |
|---|---|
| **Adjustment following an Extension of Time** | An interface target date shall be adjusted following an Extension of Time only where the Engineer determines that:<br>(a) the relevant interface target date was directly and materially affected by the event giving rise to the Extension of Time; and<br>(b) adjustment of that target date is a necessary consequence of the determination under Sub-Clause 8.5.<br>Interface target dates not expressly identified in the Engineer's determination shall remain unchanged and shall continue to be measured under the ordinary KPI regime. |

**KPI P3 — Recovery Programme Submission Time**

| Field | Detail |
|---|---|
| **Definition** | Number of working days from written Notice of the Contractor to the Engineer of a delay event on the critical path, to the Contractor's submission of a Revised Programme to the Engineer. For the avoidance of doubt, the grant of an Extension of Time shall not automatically suspend KPI P3. The Contractor shall remain responsible for submitting any required revised or recovery programme within the applicable period unless the Engineer expressly determines that submission was directly and materially prevented by a qualifying event. |
| **Target** | ≤ 10 working days |
| **Measurement** | Date of written Notice by the Contractor of a delay event on the critical path (as recorded by the CSC) versus date of revised programme receipt |
| **Reporting Frequency** | Event-triggered |
| **Data Source** | CSC correspondence register |

**Cluster Q — Technical Quality and Conformance:** Design-build delivery in complex geological conditions — including Tunnel Boring Machine drives, New Austrian Tunnelling Method excavations, and the Bosphorus crossing at the Yavuz Sultan Selim Bridge — makes quality conformance especially consequential. Metrics focus on outcomes rather than process frequency.

**KPI Q1 — Inspection and Test Plan (ITP) Hold Point Compliance**

| Field | Detail |
|---|---|
| **Definition** | The percentage of ITP hold point that the Engineer formally signs off on before the Contractor proceeds to the next construction phase. |
| **Target** | 100% |
| **Measurement** | CSC ITP sign-off register; any instance of proceeding without sign-off constitutes a non-conformance regardless of subsequent outcome. A base hold program shall have been submitted earlier as part of the Program and approved by the Engineer, and the Engineer shall use this as the basis for checking the sign-off register each month |
| **Reporting Frequency** | Monthly |
| **Data Source** | CSC ITP register |

**KPI Q2 — Major Structural Non-Conformity Rate**

| Field | Detail |
|---|---|
| **Definition** | Number of major structural non-conformities recorded during the reporting period. A major non-conformity is defined as any defect or deviation requiring design review, structural assessment, or remedial works beyond routine repair. |
| **Target** | 0 per quarter |
| **Measurement** | Count of major non-conformities raised in the NCR register during the quarter, as recorded and verified by the CSC |
| **Reporting Frequency** | Monthly, with a quarterly summary |
| **Data Source** | CSC Non-Conformity Report (NCR) register |

**KPI Q3 — NCR Closure Time**

| Field | Detail |
|---|---|
| **Definition** | Average number of working days from the date of Non-Conformance Report (NCR) issuance to verified closure, disaggregated by severity |
| **Target** | Minor NCRs: ≤ 10 working days. Major NCRs: ≤ 20 working days |
| **Measurement** | CSC NCR register: open and close dates recorded at issuance and verified closure |
| **Reporting Frequency** | Monthly |
| **Data Source** | CSC NCR register |

**KPI Q4 — Testing and Commissioning (T&C) Target Date Achievement**

| Field | Detail |
|---|---|
| **Definition** | Percentage of T&C programme milestones achieved on or before the date specified in the approved T&C Programme, covering Factory Acceptance Testing (FAT), Integrated Static Testing (IST), Dynamic Testing, and commencement of Trial Operations |
| **Target** | ≥ 90% of T&C target dates achieved on schedule |
| **Measurement** | CSC T&C milestone tracker; cross-referenced with Notified Body (NoBo) and Assessment Body (AsBo) certification programme |
| **Reporting Frequency** | Monthly during the T&C phase |
| **Data Source** | CSC T&C register; NoBo certification schedule |

**Cluster S — Health, Safety and Occupational Performance**

Underground works across four lots — including large-diameter Tunnel Boring Machine operations, deep New Austrian Tunnelling Method excavations, works within live airport perimeters at Sabiha Gökçen Airport and Istanbul Airport, and the unique operational environment of the Yavuz Sultan Selim Bridge — create significant safety exposure across the programme.

**KPI S1 — Corrective Measure Implementation Rate Following LTI[31]**

| Field | Detail |
|---|---|
| **Definition** | Percentage of corrective measures, identified by the PIOC following independent root cause analysis of a Lost-Time Injury (LTI), that the Contractor has fully implemented within the prescribed timeframe. A lost-time injury is any work-related injury or illness resulting in at least one full calendar day of absence. |
| **Target** | 100% of identified corrective measures implemented within 1 calendar month of the root cause analysis report |
| **Measurement** | Number of corrective measures identified by the PIOC versus number verified as fully implemented by the CSC within the prescribed timeframe. |
| **Reporting Frequency** | Event-triggered; status included in the monthly HSE report until all measures are closed out |
| **Data Source** | Root cause analysis report; CSC corrective action close-out register; Contractor HSE records |

**KPI S2 — Occupational Health and Safety (OHS) Induction Compliance**

| Field | Detail |
|---|---|
| **Definition** | Percentage of all workers — including direct employees, subcontractor personnel, and TBM crew — who have completed the mandatory OHS site induction before being granted first access to any construction site under this Contract |
| **Target** | 100% |
| **Measurement** | Site access control records (biometric or card-based); cross-checked against the induction training register; audited monthly by the CSC |
| **Reporting Frequency** | Monthly |
| **Data Source** | Site access logs; induction training register |

**KPI S3 — Tunnelling Near-Miss Reporting Timeliness**

| Field | Detail |
|---|---|
| **Definition** | Number of safety-critical near-miss events occurring in tunnelling operations (TBM drives, NATM faces, cross-passage construction) that are not reported to the Engineer within 24 hours of occurrence |
| **Target** | Zero safety-critical near-miss events unreported within twenty-four hours of occurrence. |
| **Measurement** | CSC incident register; Site journal; cross-referenced against the Contractor's internal incident log |
| **Reporting Frequency** | Event-triggered; summarized monthly |
| **Data Source** | CSC incident register; Contractor's HSE incident log |

[31] Incident reporting to the World Bank in line with the E-SIRT incident notification procedure.

**Cluster E — Environmental, Social and Environmental and Social Framework Compliance**
The Istanbul North Rail Crossing Project alignment traverses ecologically sensitive corridors, including the Istanbul Northern Forests, the Bosphorus coastal zone, and multiple groundwater catchment areas. The project generates approximately thirty million cubic metres of excavated material and has a significant community interface across four lots. All Key Performance Indicators in this cluster are aligned with the project's Environmental and Social Management Plan and the World Bank Environmental and Social Framework obligations.

**KPI E1 — Excavated Material Reuse and Disposal Compliance**

| Field | Detail |
|---|---|
| **Definition** | Percentage of total excavated material either reused within the permanent works, repurposed at approved off-site locations, or disposed of at pre-approved licensed disposal facilities. All hazardous materials (contaminated soil, asbestos-containing materials) must be disposed of exclusively at certified hazardous waste facilities. |
| **Target** | ≥ 85% reuse or licensed disposal for total excavated material; 100% certified disposal for all hazardous material |
| **Measurement** | Material tracking register (by volume and destination) submitted monthly; disposal manifests for all off-site movements retained and made available to the CSC and Employer on request. |
| **Reporting Frequency** | Monthly |
| **Data Source** | Contractor material tracking register; disposal manifests; CSC verification |

**KPI E2 — Grievance Redress Mechanism (GRM) Closure Rate**

| Field | Detail |
|---|---|
| **Definition** | Percentage of worker and community grievances submitted through the project Grievance Redress Mechanism (GRM) that are formally closed — meaning a resolution has been communicated to the complainant — on time per parameters specified in the POM and/or other official project documents |
| **Target** | ≥ 85% closed within 30 calendar days |
| **Measurement** | GRM register maintained by the Contractor's Social Development Officer; reviewed monthly by the CSC and reported quarterly to the Employer |
| **Reporting Frequency** | Monthly |
| **Data Source** | GRM register; CSC social monitoring report |

**KPI E3 — Local Workforce Employment Rate**

| Field | Detail |
|---|---|
| **Definition** | Percentage of the total workforce (direct and subcontracted) employed under this Contract[32] who are Turkish nationals, measured monthly across all active lots. |
| **Target** | To be defined at the pre-contract stage[33], |
| **Measurement** | Payroll records and SGK registration data; audited quarterly by the CSC |
| **Reporting Frequency** | Monthly reporting; audit (when available) |
| **Data Source** | Contractor payroll records; SGK data; labour audits (when available) |

**Cluster R — Risk and Interface Management**

With four civil lots, a separate Signalling and Telecommunication contract, airport perimeter interfaces at Sabiha Gökçen Airport and Istanbul Airport, the Yavuz Sultan Selim Bosphorus Bridge interface managed by the General Directorate of Highways, and geologically complex ground conditions throughout the alignment, active risk and interface management is a genuine performance obligation rather than a process formality.

**KPI R1 — Risk Register Coverage**

| Field | Detail |
|---|---|
| **Definition** | Percentage of risks classified as High priority in the Contractor's Risk Register that have an approved mitigation action, a defined implementation timeline, and a named responsible owner, at all reporting periods |
| **Target** | 100% at all reporting periods |
| **Measurement** | CSC review of the Contractor's Risk Register at each monthly progress meeting; Engineer endorsement required for risk classification and mitigation adequacy |
| **Reporting Frequency** | Monthly |
| **Data Source** | Contractor's Risk Register; CSC review records |

**KPI R2 — Interface Control Document (ICD) Completion Rate**

| Field | Detail |
|---|---|
| **Definition** | Percentage of identified project interfaces — covering civil lot-to-lot boundaries, civil works prerequisites for Package 2 (signalling), airport |

[32] Consistent with Turkish Labor Law requirements and The World Bank Environmental and Social Standard 2 (ESS2) on Labor and Working Conditions

[33] The minimum local workforce employment rate proposed by the Contractor in its Technical Proposal under the rated evaluation criterion for Local Employment (Section III — Evaluation and Qualification Criteria, specifically Factor 8, Sub-factor 8.2 — Local Economy & Inclusive Employment/Training), as recorded in the Letter of Acceptance. This rate shall constitute the contractual KPI target for the duration of the Works and shall be entered into the KPI Target Register prior to the Commencement Date.

| | |
|---|---|
| | operator interfaces (TAV Airports at Sabiha Gökçen; iGA Istanbul Airport Operator at Istanbul Airport), and KGM interface for the YSS Bridge (Lot 3) — for which a completed and approved Interface Control Document (ICD) is in place before works commence at that interface |
| **Target** | 100% |
| **Measurement** | Interface Register maintained by the PMC; ICD approval status verified by the CSC |
| **Reporting Frequency** | Monthly |
| **Data Source** | PMC Interface Register; CSC ICD approval records |

**KPI R3 — Interface Non-Conformity**

| Field | Detail |
|---|---|
| **Definition** | Average number of calendar days from the date an interface non-conformity is escalated to the Engineer. |
| **Target** | ≤ 14 calendar days |
| **Measurement** | CSC interface log: dates recorded at escalation |
| **Reporting Frequency** | Monthly |
| **Data Source** | CSC interface log |

## 12.5. KPI Summary Table

| KPI | Description | Target | Reporting Frequency |
|---|---|---|---|
| **P1** | Schedule Performance Index (SPI) | ≥ 0.95 | Quarterly |
| **P2** | Interface Target Date Achievement Rate | ≥ 90% | Quarterly |
| **P3** | Recovery Programme Submission Time | ≤ 10 working days | Event-triggered |
| **Q1** | ITP Hold/Witness Point Compliance | 100% | Monthly |
| **Q2** | Major Structural Non-Conformity Rate | 0 per quarter | Monthly / Quarterly |
| **Q3** | NCR Closure Time | ≤ 10 working days (minor) / ≤ 20 working days (major) | Monthly |
| **Q4** | T&C Milestone Achievement | ≥ 90% | Monthly (T&C phase) |
| **S1** | Corrective Measure Implementation Rate Following LTI | 100% of PIOC-identified corrective measures implemented within 1 calendar month of the PIOC's root cause analysis report | Event-triggered; status included in the monthly HSE report until all measures are closed out |
| **S2** | OHS Induction Compliance | 100% | Monthly |
| **S3** | Tunnelling Near-Miss Reporting Timeliness | 0 unreported within 24 hours | Event-triggered / Monthly |
| **E1** | Excavated Material Reuse and Disposal Compliance | ≥ 85% reuse; 100% hazardous certified | Monthly |
| **E2** | GRM Grievance Closure Rate | ≥ 85% whthin 30 calendar days. | Monthly |
| **E3** | Local Workforce Employment Rate | To be defined at pre-contract | Monthly / Quarterly audit |
| **R1** | Risk Register Coverage | 100% | Monthly |
| **R2** | Interface Control Document (ICD) Completion Rate | 100% | Monthly |
| **R3** | Interface Non-Conformity Resolution Time | ≤ 14 calendar days | Monthly |

## 12.6. Key Performance Indicator Monitoring and Reporting

The Contractor shall maintain a live Key Performance Indicator Dashboard, updated monthly, using the data sources specified for each Key Performance Indicator in Section 12.3. The

Dashboard shall be submitted to the Engineer no later than the tenth calendar day of each month for the preceding reporting period.

The Engineer shall review, verify, and endorse or formally dispute the reported Key Performance Indicator values within seven calendar days of receipt. Endorsed values shall be incorporated into the Engineer's monthly report to the Project Management Consultant and reported quarterly to the Employer.

Where a Key Performance Indicator target is breached in any reporting period, the Contractor shall submit a Corrective Action Plan to the Engineer within ten working days of written notification by the Engineer. The Corrective Action Plan shall identify the root cause of the breach, the proposed remedial measures and the timeline for restoring compliance. Failure to submit a Corrective Action Plan within the required period shall itself constitute a sustained breach for the purposes of Sub-Clause 14.6.3 of the Particular Conditions of Contract.

The Key Performance Indicator monitoring chain shall operate as follows: the Contractor reports to the Engineer and Construction Supervision Consultant; the Engineer and Construction Supervision Consultant verify and report to the Project Management Consultant; the Project Management Consultant submits consolidated Key Performance Indicator performance data to the Employer quarterly.

## 12.7. Key Performance Indicator Performance Account

The Key Performance Indicator Performance Account, including withholding rates, the single Interim Payment Certificate cap, recovery conditions, forfeiture rules, aggregate IPC cap on withholdings and withholdings, and termination thresholds for persistent Key Performance Indicator failure, are governed exclusively by Sub-Clause 14.6 and Sub-Clause 15.2.1(g) of the Particular Conditions of Contract. Nothing in this Chapter shall be construed as restating, modifying, or supplementing those provisions.

### 12.8 Pre-Withholding Notification and Objection Procedure

Before applying any Key Performance Indicator withholding, the Engineer shall comply with the pre-withholding notification procedure — including the mandatory notice period, the contents of the Pre-Withholding Notice, the Contractor's objection right, and the Engineer's determination — as governed exclusively by Sub-Clause 14.6.3 of the Particular Conditions of Contract.

Where no objection is submitted within the five working day period, the proposed withholding shall be applied in the next Interim Payment Certificate without further notice. Where an objection is submitted, the KPI data dispute resolution procedure in Section 12.8 and Sub-Clause 14.6.5 of the Particular Conditions of Contract shall apply.

### 12.9 KPI Data Dispute Resolution Procedure

Disputes concerning Key Performance Indicator data, performance values, or proposed withholdings shall be resolved in accordance with the procedure established in Sub-Clause 14.6.5 of the Particular Conditions of Contract. Nothing in this Section restates or modifies that procedure; it is reproduced here in summary form for operational convenience only.

The standard procedure is as follows: the Contractor shall give written notice of dispute within five working days of receiving the Key Performance Indicator report; the Engineer shall respond within five working days; if unresolved, the matter shall be referred to a meeting of senior representatives within seven working days; if the senior representatives fail to resolve the dispute within five working days of that meeting, the matter may be referred to the Dispute Avoidance and Adjudication Board.

For Critical Key Performance Indicators, an accelerated procedure applies as established in Sub-Clause 14.6.5. Pending resolution of any dispute, the proposed withholding shall be held in the notional Key Performance Indicator Performance Account and shall not be released or forfeited until the dispute is formally resolved, in accordance with Sub-Clause 14.6.

## 12.10 Review of KPI Targets on Material Scope Change

Any review or permanent revision of a KPI target arising from a Variation or other material change to the scope, risk profile, sequencing or performance basis of the Works shall be carried out exclusively in accordance with Sub-Clause 14.6.6 [Review of KPI Targets on Material Scope Change] of the Particular Conditions of Contract.

An Extension of Time shall not, of itself, constitute grounds for a permanent revision of a KPI target.

Where the Engineer determines under Sub-Clause 8.5 that an Extension of Time requires a consequential revision to the approved programme baseline or an interface target date, such revision shall be limited to the relevant programme dates and shall be dealt with under Section 12.2. It shall not constitute a permanent revision of the underlying KPI definition, target, measurement methodology or reporting frequency.

Pending approval of any revised KPI target under Sub-Clause 14.6.6, the existing KPI target shall continue to apply.

No revised KPI target shall take effect unless it has been:

(a) reviewed by the Engineer;
(b) approved in writing by the Employer; and
(c) recorded in the KPI Target Register.

# Specifications

**Available at the link below:**

https://bulut.uab.gov.tr/share/preview/mrVBjCjehgsnzxgdKafmpBhB5xQKZTRXGFSkNUgGDKGcbYGr6J

# Drawings

## Disclaimer

The drawings included in the RFP documents are provided as preliminary and indicative reference input solely to assist tenderers in preparing their bids. They do not constitute a complete or final design, and are not intended to serve as a basis for the Contractor's design development during execution.

The Contractor bears full and sole responsibility for the complete design of the Works, including the development, verification, and finalization of all design documents required for construction and implementation.

The Contractor shall independently verify all data, dimensions, quantities, and technical details prior to use and shall not rely solely on the information provided in these drawings.
Any information contained in these drawings shall not limit or relieve the Contractor of its full responsibility for the adequacy, safety, functionality, and constructability of the design and the Works.

The Contractor shall be responsible for identifying and resolving any discrepancies, errors, or omissions and shall bear all consequences arising therefrom, without any additional cost or time entitlement to the Employer.

The language of the drawings is English. Where certain names, terms or labels are additionally provided in Turkish, the English text shall prevail in all cases.

**Drawings are available at the link below:**

https://bulut.uab.gov.tr/share/preview/uhkqFsTaTYXAyHnfUSZAgVJGtUVnbwYcVkBFqZJwWckt3jTzFs

# PART 3 – CONDITIONS OF CONTRACT AND CONTRACT FORMS

# SECTION VIII - GENERAL CONDITIONS (GC)

Yellow Book:

© FIDIC 2017 - 2022. All rights reserved.

The Conditions of Contract are the "General Conditions" which form part of the "Conditions of Contract for Plant & Design-Build for Electrical & Mechanical Plant & for Building & Engineering Works Designed by the Contractor ("Yellow book") Second edition 2017, reprinted 2022 with amendments" published by the Federation Internationale Des Ingenieurs – Conseils (FIDIC) and the following "Particular Conditions" which comprise of the *World Bank's* COPA and the amendments and additions to such General Conditions.

An original copy of the above FIDIC publication i.e. "Conditions of Contract for Plant & Design-Build for Electrical & Mechanical Plant & for Building & Engineering Works Designed by the Contractor" must be obtained from FIDIC.

**International Federation of Consulting Engineers (FIDIC)**

FIDIC Bookshop – Box- 311 – CH – 1215 Geneva 15 Switzerland

Fax: +41 22 799 49 054

Telephone: +41 22 799 49 01

E-mail: fidic@fidic.org

www.fidic.org

FIDIC code: ISBN13: 978-2-88432-082-5

# SECTION IX - PARTICULAR CONDITIONS (PC)

The following Particular Conditions shall supplement the General Conditions. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions.

# Particular Conditions

## Part A – Contract Data

<table>
<tr><th>Conditions</th><th>Sub-Clause</th><th>Data</th></tr>
<tr><td>Employer’s name and address</td><td>1.1.30</td><td>Name: General Directorate of Infrastructure Investments (GDII)<br>Address: Hakkı Turayliç Cad. No:5 06338 Emek/Çankaya/ANKARA</td></tr>
<tr><td>Engineer’s name and address</td><td>1.1.35</td><td>to be notified by the Employer prior to the Commencement Date</td></tr>
<tr><td>Site</td><td>1.1.77</td><td>The site is in İstanbul. Details of the site is given in the Employer’s Requirements.</td></tr>
<tr><td>Time for Completion</td><td>1.1.86</td><td>Add at the end of the subparagraph:<br>Time for Completion is 1826 days</td></tr>
<tr><td>Bank’s name</td><td>1.1.91</td><td>Add new provision 1.1.91 as follows:<br>“Bank” means International Bank for Reconstruction and Development.</td></tr>
<tr><td>Borrower’s name</td><td>1.1.92</td><td>Add new provision 1.1.92 as follows:<br>“Borrower” means Republic of Türkiye.</td></tr>
<tr><td>Defects Notification Period</td><td>1.1.27</td><td>Add at the end of the subparagraph:<br>730 days (two years)</td></tr>
<tr><td>Sections</td><td>1.1.76</td><td>N/A</td></tr>
<tr><td>Milestones</td><td>1.1.95</td><td>
<table>
<tr><th>Milestone</th><th>Description</th><th>Time for Completion</th></tr>
<tr><td>Milestone 1</td><td>Detailed Design Completion</td><td>12 months from the Commencement Date</td></tr>
<tr><td>Milestone 2</td><td>Infrastructure Works Completion</td><td>36 months from the completion date of Major Milestone 1</td></tr>
<tr><td>Milestone 3</td><td>Superstructure Completion</td><td>12 months from the completion date of Major Milestone 2</td></tr>
</table>
</td></tr>
</table>

| Conditions | Sub-Clause | Data |
|---|---|---|
| | | Milestone 4 \| Testing and Commissioning Completion \| 24 months from the completion date of Major Milestone 3 |
| Electronic transmission system | 1.3 (a) (ii) | Electronic transmission system shall not be used. |
| Address of Employer for communications: | 1.3(d) | Hakkı Turayliç Caddesi No:5, Emek 06500, Ankara, Türkiye |
| Address of Engineer for communications: | 1.3(d) | to be notified by the Employer prior to the Commencement Date. |
| Address of Contractor for communications: | 1.3(d) | |
| Governing Law | 1.4 | The governing law is Turkish Laws. |
| Ruling language | 1.4 | The ruling language is English. |
| Language for communications | 1.4 | The language for communication is English |
| Time for the Parties to sign a Contract Agreement | 1.6 | 42 days after receipt of the Letter of Acceptance |
| Number of additional paper copies of Contractor's Documents | 1.8 | Three hardcopies and one digital copy |
| Total liability of the Contractor to the Employer under or in connection with the Contract | 1.15 | 100 % (one hundred percent) |
| Time for access to the Site | 2.1 | No later than the Commencement Date, subject to the land access, E&S clearance and World Bank no-objection requirements set out in the Employer's Requirements. |
| Engineer's Duties and Authority | 3.2 | Variations resulting any increase of the Accepted Contract Amount shall require written consent of the Employer. |
| Cyber security- Contractor's obligations | 4.1 | *N/A* |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Performance Security | 4.2 | The Performance Security will be in the form of a *6% (six)* percent of the Accepted Contract Amount and in the same currency (ies) of the Accepted Contract Amount. |
| Environmental and Social (ES) Performance Security | 4.2 | The ES Performance Security will be in the form of a "demand guarantee" in the amount(s) of 1% (one percent) of the Accepted Contract Amount and in the same currency (ies) of the Accepted Contract Amount. |
| Maximum allowable accumulated value of work subcontracted (as a percentage of the Accepted Contract Amount) | 4.4(a) | 30% (thirty percent) |
| Parts of the Works for which subcontracting is not permitted | 4.4(b) | N/A |
| Period for notification of errors in the items of reference | 4.7.2 | 28 days |
| Period of payment for temporary utilities | 4.19 | N/A |
| Number of additional paper copies of progress reports | 4.20 | Three hardcopy and one digital copy |
| Cyber security | 4.20 | *N/A* |
| Cyber security-immediate reporting | 4.20 | *N/A* |
| Engagement of Staff and Labour | 6.1 | The Contractor shall allocate not less than 30% of the total labour cost under the contract to the employment of local Contractor's Personnel (local labour) with appropriate skills and experience. |
| Normal working hours | 6.5 | Normal working hours means working hours in accordance with applicable laws, collective agreements, and industry standards. |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Number of additional paper copies of program | 8.3 | Three hardcopies and one digital copy |
| Delay damages payable for each day of delay | 8.8 | 0.05% of the Accepted Contract Amount, less the provisional sum for DAAB, for each day of delay in achieving the relevant Milestone.<br>Delay damages shall apply only where the Contractor fails to complete a Milestone stated in the Contract Data within the Time for Completion applicable to that Milestone. |
| Maximum amount of delay damages | 8.8 | 10% of the Accepted Contract Amount less provisional sum for DAAB. |
| Cyber security- Variation | 13.3.1(a) | *N/A* |
| Percentage rate to be applied to Provisional Sums for overhead charges and profit | 13.4 (b)(ii) | 5% |
| Total advance payment | 14.2 | 15% of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable |
| Repayment of Advance payment | 14.2.3 | (a) minimum amount of certified interim payments to commence repayment of the Advance Payment, as a percentage of the Accepted Contract Amount payable in that currency less Provisional Sums 5%<br>(b) percentage deductions for the repayment of the Advance Payment 25%; provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount Less Provisional Sums has been certified for payment. |
| Period of payment | 14.3 | Monthly |
| Number of additional paper copies of Statements | 14.3(b) | Three hardcopies and one digital copy |
| Percentage of retention | 14.3(iii) | 5% |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Limit of Retention Money (as a percentage of Accepted Contract Amount) | 14.3(iii) | 5% |
| Minimum Amount of Interim Payment Certificates | 14.6.2 | 0.5 % of the Accepted Contract Amount. |
| Cyber security- withholding payments | 14.6.2 | *N/A* |
| KPI Performance Framework | 14.6.3 | Applicable as set out in the Employer's Requirements |
| Grace period for KPI withholdings | 14.6.3 | Two consecutive reporting periods, except for Critical KPIs |
| Critical KPIs | 14.6.3 | Q1, S1 and S3 |
| Withholding for 1 KPI in sustained breach | 14.6.3 | 0.25% of relevant IPC |
| Withholding for 2–3 KPIs in sustained breach | 14.6.3 | 0.50% of relevant IPC |
| Withholding for more than 3 KPIs in sustained breach | 14.6.3 | 1.0% of relevant IPC |
| Maximum KPI withholding per IPC | 14.6.3 | 2.5% of certified IPC amount |
| Recovery condition | 14.6.3 | Compliance restored and thereafter maintained for 2 consecutive reporting periods |
| Forfeiture point | 14.6.3 | Taking-Over Certificate for the relevant Lot |
| Pre-withholding notice period | 14.6.3 | 15 calendar days before the relevant Interim Payment Certificate is due to be issued |
| Contractor objection period | 14.6.3 | 5 Working Days after receipt of the draft KPI withholding notice |
| Engineer final determination period | 14.6.3 | 7 Working Days after receipt of the Contractor's objection |

| Conditions | Sub-Clause | Data |
|---|---|---|
| KPI Performance Withholding during an Extension of Time | 14.6.3 | No automatic suspension. Suspension applies only to specific KPIs whose achievement is determined by the Engineer to have been materially prevented by an Employer-risk event or an Exceptional Event, and only for the period of direct material effect. |
| Aggregate IPC cap for Retention Money, KPI Performance Withholding and delay damages | 14.6.4 | 12.5% of the gross certified amount otherwise due in the relevant Interim Payment Certificate |
| KPI data dispute notice period | 14.6.5 | 5 Working Days after receipt of the relevant verified KPI report or draft KPI withholding notice, whichever is earlier |
| Engineer response period for KPI data disputes | 14.6.5 | 5 Working Days after receipt of the KPI data dispute notice |
| Senior representatives' meeting period | 14.6.5 | 7 Working Days after the Engineer's response |
| Critical KPI data dispute accelerated procedure | 14.6.5 | 2 Working Days for Contractor notice, 2 Working Days for Engineer response, and 3 Working Days for senior representatives' meeting |
| KPI target review threshold | 14.6.6 | Variation exceeding 5% of the Accepted Contract Amount, or any material scope change affecting KPI targets |
| Period of payment of Advance Payment to the Contractor | 14.7(a) | 45 days after receiving the documents in accordance with Sub-Clause 14.2 |
| Period for the Employer to make interim payments to the Contractor under Sub-Clause 14.6 (interim Payment) | 14.7b(i) | 56 days after the Engineer receives the Statement and supporting documents |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Period for the Employer to make interim payments to the Contractor under Sub-Clause 14.13 (Final Payment) | 14.7b(ii) | 70 days after the Employer receives this Payment Certificate |
| Period for the Employer to make final payment to the Contractor | 14.7(c) | **Replace** "56 days" with "70 days" |
| financing charges for delayed payment (percentage points above the average bank short-term lending rate as referred to under sub-paragraph (a)) | 14.8 | 1% per annum |
| Number of additional paper copies of draft Final Statement | 14.11.1(b) | Three hardcopies and one digital copy |
| Critical KPI remedy period before termination | 15.1 / 15.2.1 | 28 days from Notice to Correct |
| Critical KPI termination threshold | 15.2.1 | Three verified breaches of any Critical KPI, or two verified breaches of the same Critical KPI, within any rolling six-month period |
| Forces of nature, the risks of which are allocated to the Contractor | 17.2(d) | N/A |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Permitted deductible limits | 19.1 | The maximum permitted deductible for insurances under Sub-Clause 19 shall be:<br><br>(a) For insurance of the Works and Plant: not exceeding USD 1,000,000 per occurrence<br>(b) For third party liability insurance: not exceeding USD 500,000 per occurrence<br>(c) For professional indemnity insurance: not exceeding USD 1,000,000 per claim<br><br>Any higher deductibles shall be subject to the prior approval of the Employer. |
| Additional amount to be insured (as a percentage of the replacement value, if less or more than 15%) | 19.2.1(b) | 20% of the replacement value of the Works |
| List of risks arising from Exceptional Events which shall not be excluded from the insurance cover for the Works | 19.2.1(iv) | The insurance cover shall not exclude risks arising from Exceptional Events including but not limited to:<br>(a) Earthquake<br>(b) Flood<br>(c) Storm, cyclone, hurricane, and other severe natural events<br>(d) Landslide and subsidence<br>(e) Explosion and fire<br>(f) Riot, commotion and civil disturbance<br>(g) Terrorism |
| Extent of insurance required for Goods | 19.2.2 | Insurance shall cover loss or damage to Goods during manufacture, transport (including international transit), storage, and delivery to the Site, on an "All Risks" basis. |
| Amount of insurance required for Goods | | 110% of the CIF value of the Goods |

| Conditions | Sub-Clause | Data |
|---|---|---|
| amount of insurance required for liability for breach of professional duty | 19.2.3(a) | Not less than 20% of the Accepted Contract Amount |
| Insurance required against liability for fitness for purpose | 19.2.3(b) | No |
| Period of insurance required for liability for breach of professional duty | 19.2.3 | Until end of Defects Liability Period |
| Amount of insurance required for injury to persons and damage to property | 19.2.4 | 5,000,000.00 EUR (Five Million Euro) per occurrence and maximum aggregate limit of 20,000,000.00 EUR (Twenty Million Euro) |
| Other insurances required by Laws and by local practice (give details) | | The Contractor shall obtain and maintain all insurances required by the Laws of Türkiye and by local practice. |
| Time for appointment of DAAB member(s) | 21.1 | 42 days after signature by both parties of the Contract Agreement |
| The DAAB shall be comprised of | 21.1 | Three Members<br>Proposed by Employer<br>1. Mr. Fahrettin Öner<br>2. Mr. Mehmet Tarık Dündar<br>3. Mr. Musa Tuncay<br>Proposed by Contractor [Attach CVs to the Contract]<br>1.<br>2.<br>3 |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Rules of arbitration: | 21.6 (a) | Sub-Clause 21.6(a) of PART B – Special Provisions **shall** apply. |
| | 21.6 (b) | Sub-Clause 21.6(b) of PART B – Special Provisions **shall** apply. |
| Place of arbitration | 21.6 (a) | It will be indicated at the time of award of contract in accordance with origin of the Contractor as per Sub-Clause 21.6. |

## Part B – Special Provisions

**Sub-Clause 1.1.4**
**Base Date**

Sub-Clause 1.1.4 is replaced with the following: "Unless stated otherwise in the Contract Data, Base Date means the date 28 days before the latest date for submission of the Tender.

**Sub-Clause 1.1.49**
**Laws**

The Sub-Clause is replaced with:

"**Laws**" means all national (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority."

**Sub-Clause 1.1.59**
**Particular Conditions**

The Sub-Clause is replaced with:

"Particular Conditions" means the document entitled particular conditions included in the Contract, which consists of Part A- Contract Data, Part B- Special Provisions, Part C- Fraud and Corruption and Part D- Environmental and Social (ES) Metrics for Progress Reports."

**Sub-Clause 1.1.74**
**Site**

The Sub-Clause is replaced with:

"**Site**" means the places where the Permanent Works are to be executed, including storage and working area, and to which Plant and Materials are to be delivered, and any other places specified in the Contract as forming part of the Site."

**Sub-Clause 1.1.83**
**Tender**

The following is added at the end of the sentence. "Tender is synonymous with "Proposal", "tenderer" with "Proposer", "tender documents" with "request for proposals documents".

**Sub-Clause 1.1.91 to 1.1.96 are added after Sub-Clause 1.1.90**

| | |
|---|---|
| **Sub-Clause 1.1 91 Bank** | "**Bank**" means the financing institution (if any) named in the Contract Data. |
| **Sub-Clause 1.1.92**<br>**Borrower** | "**Borrower**" means the person (if any) named as the borrower in the Contract Data. |
| **Sub-Clause 1.1.93**<br>**ES** | "**ES**" means Environmental and Social (including Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH)). |
| **Sub-Clause 1.1.94**<br>**Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH)** | "**Sexual Exploitation and Abuse" "(SEA)"** means the following:<br>**Sexual Exploitation** is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;<br>**Sexual Abuse** is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions; and<br>**"Sexual Harassment" "(SH)"** is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by the Contractor's Personnel with other Contractor's or Employer's Personnel. |
| **Sub-Clause 1.1.95**<br>**Milestone** | **"Milestone"** means a part of the Works stated in the Contract Data (if any), and described in detail in the Employer's Requirements as a Milestone, which is to be completed by the time for completion stated in Sub-Clause 4.26 [*Milestones*] but is not to be taken over by the Employer after completion. |
| **Sub-Clause 1.1.96**<br>**Milestone Certificate** | **"Milestone certificate"** means the certificate issued by the Engineer under Sub-Clause 4.26 [*Milestones*]. |
| **Sub-Clause 1.2**<br>**Interpretation** | Sub-paragraph (a) is replaced with the following:<br>(a) "Words indicating one gender include all genders;<br>"he/she" is replaced with:" it";<br>"him/her" is replaced with "it";<br>"his" and "his/her" are replaced with: "its"; |

| | |
|---|---|
| | "himself/herself" are replaced with: "itself"."<br><br>Further, "and" is deleted from the end of sub-paragraph (i) and added at the end of sub-paragraph (j).<br><br>sub-paragraph (k) is added:<br><br>(k) "The word "tender" is synonymous with "bid" or "proposal", the word tenderer with "bidder" or "proposer" and the words "tender documents" with "request for bids documents" or "request for proposal documents", as applicable." |
| **Sub-Clause 1.5**<br><br>**Priority of Documents** | The following documents are added in the list of Priority Documents after (e):<br><br>"(f) the Particular Conditions Part C- Fraud and Corruption;<br><br>(g) the Particular Conditions Part D- Environmental and Social (ES) Metrics for Progress Reports;"<br><br>(h) Particular Conditions- Part E- Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment Performance Declaration for Subcontractors;<br><br>and the list renumbered accordingly. |
| **Sub-Clause 1.6**<br><br>**Contract Agreement** | The last paragraph is replaced with:<br><br>"If the Contractor comprises a JV, the authorised representative of the JV shall sign the Contract Agreement in accordance with Sub-Clause 1.14 *[Joint and Several Liability]."* |
| **Sub-Clause 1.12**<br><br>**Confidentiality** | The following is added at the end of the second paragraph: "The Contractor shall be permitted to disclose information required to establish its qualifications to compete for other projects."<br><br>"or" at the end of (b) is deleted.<br><br>"or" at the end of (c) is added.<br><br>The following is then added as (d): "is being provided to the Bank." |
| **Sub-Clause 1.17**<br><br>**Inspections & Audit by the Bank** | The following Sub-Clause is added after Sub-Clause 1.16:<br><br>"Pursuant to paragraph 2.2 e. of Particular Conditions - Part C- Fraud and Corruption, the Contractor shall permit and shall cause its agents (where declared or not), subcontractors, subconsultants, service providers, suppliers, and personnel, to |

permit, the Bank and/or persons appointed by the Bank to inspect the site and/or the accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have such accounts, records and other documents audited by auditors appointed by the Bank. The Contractor's and its Subcontractors' and subconsultants' attention is drawn to Sub-Clause 15.8 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures)."

**Sub-Clause 2.4**

**Employer's Financial Arrangements**

The first paragraph is replaced with:

"The Employer shall submit, before the Commencement Date, reasonable evidence that financial arrangements have been made for financing the Employer's obligations under the Contract."

The following sub-paragraph is added at the end of Sub-Clause 2.4:

"In addition, if the Bank has notified to the Borrower that the Bank has suspended disbursements under its loan, which finances in whole or in part the execution of the Works, the Employer shall give notice of such suspension to the Contractor with detailed particulars, including the date of such notification, with a copy to the Engineer, within 7 days of the Borrower having received the suspension notification from the Bank. If alternative funds will be available in appropriate currencies to the Employer to continue making payments to the Contractor beyond a date 60 days after the date of Bank notification of the suspension, the Employer shall provide reasonable evidence in its notice of the extent to which such funds will be available."

**Sub-Clause 3.1**

**The Engineer**

The following is added at the end of the first sub-paragraph:

"The Engineer's staff shall include suitably qualified engineers and other professionals who are competent to carry out these duties."

**Sub-Clause 3.2**

**Engineer's Duties and Authority**

The Engineer shall obtain the consent in writing of the Employer before taking action under the following Sub-Clauses of these Conditions:

(a) Sub-Clause 13.1: Right to vary - instructing a variation, except;

(i) in an emergency situation as determined by the Engineer; or

(ii) (if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data.

(b) Sub-Clause 13.2 (Value Engineering): stating consent or otherwise to a value engineering proposal submitted by the Contractor in accordance with Sub-Clause 13.2.

Notwithstanding the obligation, as set out above, to obtain consent in writing, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, it may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of consent of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, and EOT if any, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Employer.

**Sub-Clause 3.3**

**Engineer's Representative**

The following is added at the end of Sub-Clause 3.3:

"The Engineer shall obtain the consent of the Employer before appointing or replacing an Engineer's Representative."

**Sub-Clause 3.4**

**Delegation by the Engineer**

The following is added at the end of the second paragraph:

"If any assistants are not fluent in this language, the Engineer shall make competent interpreters available during all working hours, in a number sufficient for those assistants to properly perform their assigned duties and/or exercise their delegated authority."

**Sub-Clause 3.6**

**Replacement of the Engineer**

In the first paragraph, "42 days" is replaced with: "21 days";

In the third para, "shall" is replaced with: "should".

**Sub-Clause 4.1**

**Contractor's General Obligations**

The following is inserted after the paragraph "The Contractor shall execute the Works…":

"The Contractor shall not post and shall ensure that its Subcontractors/suppliers/manufacturers and Contractors' Personnel shall not post, any signage on the Site, or in any other place where the Works will be carried out, except such

signage as is required under the Contract, including by the Laws of the Country, or has been approved by the Employer. For the purposes of this sub-clause, signage shall include, inter alia, flags, billboards, advertising materials and any other similar item separately posted on the Site."

The following is inserted after the paragraph "The Contractor shall provide the Plant (and spare parts, if any)…":

"All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country as defined by the Bank."

The following is inserted after the paragraph "The Contractor shall, whenever required by the Engineer...":

"The Contractor shall not carry out mobilization to Site (e.g. clearance for haul roads, site accesses and work site establishment, geotechnical investigations or investigations to select ancillary features such as quarries and borrow pits) unless the Engineer gives consent, a consent that shall not be unreasonably delayed, to the measures the Contractor proposes to manage the environmental and social risks and impacts, which at a minimum shall include applicable Management Strategies and Implementation Plans (MSIPs) and applying the Code of Conduct for Contractor's Personnel submitted as part of the Proposal and agreed as part of the Contract. The Contractor shall submit, to the Engineer for Review, any additional MSIPs as are necessary to manage the ES risks and impacts of ongoing Works. (e.g. excavation, earth works, bridge and structure works, stream and road diversions, quarrying or extraction of materials, concrete batching and asphalt manufacture). These MSIPs collectively comprise the Contractor's Environmental and Social Management Plan (C-ESMP). The Contractor shall review the C-ESMP, periodically (but not less than every six (6) months), and update it as required to ensure that it contains measures appropriate to the Works. The updated C-ESMP shall be submitted to the Engineer for Review.

The C-ESMP shall be part of the Contractor's Documents. The procedures for Review of the C-ESMP and its updates shall be as described in Sub-Clause 5.2 *[Contractor's Documents]."* For the purposes of this Sub-Clause, mobilization and site establishment shall include the establishment or use of Project Facilities and Associated Facilities, as defined in the Employer's Requirements.

For the avoidance of doubt, the Engineer's consent or Review under this Sub-Clause shall not relieve the Contractor from

obtaining all applicable E&S approvals and World Bank no-objections required under the Employer's Requirements before mobilization, site establishment or commencement of any physical works.

The following is added at the end of the Sub-Clause:

"The Contractor shall provide relevant contract- related information, as the Employer and/or Engineer may reasonably request to conduct Stakeholder engagements. "Stakeholder" refers to individuals or groups who:

(i) are affected or likely to be affected by the Contract; and

(ii) may have an interest in the Contract.

The Contractor shall also directly participate in Stakeholder engagements, as the Employer and/or Engineer may reasonably request.

Pursuant to the Contract Data, the Contractor, including its Subcontractors/ suppliers/ manufacturers shall take all technical and organizational measures necessary to protect the information technology systems and data used in connection with the Contract. Without limiting the foregoing, the Contractor, including its Subcontractors/ suppliers/ manufacturers, shall use all reasonable efforts to establish, maintain, implement and comply with, reasonable information technology, information security, cyber security and data protection controls, policies and procedures, including oversight, access controls, encryption, technological and physical safeguards and business continuity/disaster recovery and security plans that are designed to protect against and prevent breach, destruction, loss, unauthorized distribution, use, access, disablement, misappropriation or modification, or other compromise or misuse of or relating to any information technology system or data used in connection with the Contract."

**Sub-Clause 4.2**

**Performance Security and ES Performance Security**

The first paragraph is replaced with:

"The Contractor shall obtain (at its cost) a Performance Security for proper performance and, if applicable, an Environmental and Social (ES) Performance Security for compliance with the Contractor's ES obligations, in the amounts stated in the Contract Data and denominated in the currency(ies) of the Contract or in a freely convertible currency acceptable to the Employer. If amounts are not stated in the Contract Data, this Sub-Clause shall not apply."

| | |
|---|---|
| | In the following Sub-Clauses of the General Conditions, the term "Performance Security" is replaced with: "Performance Security and, if applicable, an Environmental and Social (ES) Performance Security":<br>2.1- Right of Access to the Site;<br>14.2- Advance Payment;<br>14.6- Issue of IPC;<br>14.12- Discharge;<br>14.13- Issue of FPC;<br>14.14 Cessation of Employer's Liability;<br>15.2- Termination for Contractor's Default;<br>15.5- Termination for Employer's Convenience. |
| **Sub-Clause 4.2.1**<br>**Contractor's obligations** | The first paragraph is replaced with:<br>"The Contractor shall deliver the Performance Security and, if applicable, an ES Performance Security to the Employer within 28 days after receiving the Letter of Acceptance and shall send a copy to the Engineer. The Performance Security, and if applicable, ES Performance Security shall be issued by a reputable bank or financial institution selected by the Contractor. The Performance Security shall be, as stipulated in the Contract Data, and shall be in accordance with the form included in the request for proposals documents for the subject contract or in another form acceptable to the Employer."<br>Thereafter, throughout Sub-Clause 4.2 "Performance Security" is replaced with: "Performance Security and, if applicable, ES Performance Security." |
| **Sub-Clause 4.2.2**<br>**Claims under the Performance Security** | The first paragraph is replaced in its entirety with: "The Employer shall not make a claim under the Performance Security, except for amounts for which the Employer is entitled under the Contract." |
| **Sub-Clause 4.2.3**<br>**Return of Performance Security** | In sub-paragraph (a) "21 days" is replaced with: "28 days". |
| **Sub-Clause 4.3**<br>**Contractor's Representative** | The following is added at the end of the last paragraph: "If any of these persons is not fluent in this language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer." |

**Sub-Clause 4.4 Subcontractors**

The following is added at the beginning of the second paragraph.

"The Contractor shall require in all subcontracts relating to the Works that Subcontractors execute the Works in accordance with the Contract, including complying with the relevant ES requirements and the obligations set out in Sub-Clause 4.25."

The following is added after the first sentence of the fourth paragraph.

"The Contractor's submission to the Engineer shall also include a Subcontractor's declaration in accordance with the Particular Conditions- Part E- Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment Performance Declaration for Subcontractors."

The following is added at the end of the last paragraph of Sub-Clause 4.4:

"All subcontracts relating to the Works shall include provisions which entitle the Employer to require the subcontract to be assigned to the Employer under Sub-Clause 15.2. [*Termination for Contractor's Default*].

Where practicable, the Contractor shall give fair and reasonable opportunity for contractors from the Country to be appointed as Subcontractors."

**Sub-Clause 4.5.1**

**Objection to nomination**

In sub-paragraph (c):

"and" is deleted from the end of (i);

"." at the end of (ii) is replaced with: ", and".

The following is then added as (iii):

"(iii) be paid only if and when the Contractor has received from the Employer payments for sums due under the Subcontract referred to under Sub-Clause 4.5.2 [ *Payment to nominated Subcontractors*]."

**Sub-Clause 4.6**

**Co-operation**

The following is added after the first paragraph:

"The Contractor shall also, as stated in the Employer's Requirements or as instructed by the Engineer, cooperate with and allow appropriate opportunities for the Employer's Personnel to conduct any environmental and social assessment."

**Sub-Clause 4.8**

**Health and Safety Obligations**

The following are included after deleting "and" at the end of (f) and replacing "." with ";" at the end of (g):

(h) "provide health and safety training of Contractor's Personnel as appropriate and maintain training records;

(i) actively engage the Contractor's Personnel in promoting understanding, and methods for, implementation of health and safety requirements, as well as in providing information to Contractor's Personnel, and provision of personal protective equipment without expense to the Contractor's Personnel;

(j) put in place workplace processes for Contractor's Personnel to report work situations that they believe are not safe or healthy, and to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health;

(k) Contractor's Personnel who remove themselves from such work situations shall not be required to return to work until necessary remedial action to correct the situation has been taken. Contractor's Personnel shall not be retaliated against or otherwise subject to reprisal or negative action for such reporting or removal;

(l) subject to Sub-Clause 4.6, collaborate with the entities and Personnel under paragraph (a) , (b) and (c) of Sub-Clause 4.6, in applying the health and

safety requirements. This is without prejudice to the responsibility of the relevant entities for the health and safety of their own personnel; and

(m) establish and implement a system for regular (not less than six-monthly) review of health and safety performance and the working environment."

The second and third paragraphs are replaced with the following:

"Subject to Sub-Clause 4.1, the Contractor shall submit to the Engineer for Review a health and safety manual which has been specifically prepared for the Works, the Site and other places (if any) where the Contractor intends to execute the Works. The procedures for Review of the health and safety manual and its updates shall be as described in Sub-Clause 5.2.2 *[ Review by Engineer]*.

The health and safety manual shall be in addition to any other similar document required under applicable health and safety regulations and Laws.

The health and safety manual shall set out all the health and safety requirements under the Contract,

(a) which shall include at a minimum:

(i) the procedures to establish and maintain a safe working environment without risk to health at all workplaces, machinery, equipment and processes under the control of the Contractor, including control measures for chemical, physical and biological substances and agents;

(ii) details of the training to be provided, records to be kept;

(iii) the procedures for prevention, preparedness and response activities to be implemented in the case of an emergency event (i.e. an unanticipated incident, arising from both natural and man-made hazards, typically in the form of fire, explosions, leaks or spills, which may occur for a variety of different reasons including failure to implement operating procedures that are designed to prevent their occurrence, extreme weather or lack of early warning);

(iv) the measures to be taken to avoid or minimize the potential for community exposure to

water-borne, water-based, water-related, and vector-borne diseases,

(v) the measures to be implemented to avoid or minimize the spread of communicable diseases (including transfer of Sexually Transmitted Diseases or Infections (STDs), such as HIV virus) and non-communicable diseases associated with the execution of the Works, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups. This includes taking measures to avoid or minimize the transmission of communicable diseases that may be associated with the influx of temporary or permanent Contract-related labour;

(vi) the policies and procedures on the management and quality of accommodation and welfare facilities if such accommodation and welfare facilities are provided by the Contractor in accordance with Sub-Clause 6.6; and

(b) any other requirements stated in the Employer's Requirements."

The paragraph starting with: "In addition to the reporting requirement of…" is deleted and replaced with the addition to GC Sub-Clause 4.20 in Sub-Clause 4.20 of the Special Provisions.

**Sub-Clause 4.15**

**Access Route**

The following is added at the end of Sub-Clause 4.15:

"The Contractor shall take all necessary safety measures to avoid the occurrence of incidents and injuries to any third party associated with the use of, if any, Contractor's Equipment on public roads or other public infrastructure.

The Contractor shall monitor and use road safety incidents and accidents reports to identify negative safety issues and establish and implement necessary measures to resolve them."

**Sub-Clause 4.18**

**Protection of the Environment**

Sub-Clause 4.18 Protection of the Environment is replaced with:

"The Contractor shall take all necessary measures to:

(a) protect the environment (both on and off the Site); and

(b) limit damage and nuisance to people and property resulting from pollution, noise and other results of the Contractor's operations and/ or activities.

The Contractor shall ensure that emissions, surface discharges, effluent and any other pollutants from the Contractor's activities shall exceed neither the values indicated in the Employer's Requirements, nor those prescribed by applicable Laws.

In the event of damage to the environment, property and/or nuisance to people, on or off Site as a result of the Contractor's operations, the Contractor shall agree with the Engineer the appropriate actions and time scale to remedy, as practicable, the damaged environment to its former condition. The Contractor shall implement such remedies at its cost to the satisfaction of the Engineer."

**Sub-Clause 4.20**

**Progress Reports**

"4.20 (g) is replaced with:

"4.20 (g) the Environmental and Social (ES) metrics set out in Particular Conditions - Part D"

The following paragraph is added prior to the paragraph starting with: "However, nothing stated…": "Unless otherwise stated in the Contract Data, progress reports shall include status of compliance to cyber security risks management, and any foreseeable cyber security risk and mitigation."

The following is added at the end of the Sub-Clause:

"In addition to the reporting requirement of this sub-paragraph (g) of Sub-Clause 4.20 [*Progress Reports*], the Contractor shall inform the Engineer immediately of any allegation, incident or accident, which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Employer's Personnel or Contractor's Personnel. This includes, but is not limited to, any incident or accident causing fatality or serious injury; significant adverse effects or damage to private property; any cyber security incidents as specified in the Contract Data; or any allegation of SEA and/or SH. In case of SEA and/or SH, while maintaining confidentiality as appropriate, the type of allegation (sexual exploitation, sexual abuse or sexual harassment), gender and age of the person who experienced the alleged incident should be included in the information.

The Contractor, upon becoming aware of the allegation, incident or accident, shall also immediately inform the Engineer of any such incident or accident on the Subcontractors' or suppliers' premises relating to the Works

which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Employer's Personnel or Contractor's, its Subcontractors' and suppliers' personnel. The notification shall provide sufficient detail regarding such incidents or accidents. The Contractor shall provide full details of such incidents or accidents to the Engineer within the timeframe agreed with the Engineer, and in any event in accordance with the incident notification and reporting timelines set out in the Employer's Requirements.

The Contractor shall require its Subcontractors and suppliers (other than Subcontractors) to immediately notify the Contractor of any incidents or accidents referred to in this Subclause."

**Sub-Clause 4.21**

**Security of the Site**

The Sub-Clause is replaced with the following:

"The Contractor shall be responsible for the security of the Site, and:

(a) for keeping unauthorised persons off the Site;

(b) authorised persons shall be limited to the Contractor's Personnel, the Employer's Personnel, and to any other personnel identified as authorised personnel (including the Employer's other contractors on the Site), by a Notice from the Employer or the Engineer to the Contractor.

Subject to Sub-Clause 4.1, the Contractor shall submit for the Engineer's No-objection a security management plan that sets out the security arrangements for the Site.

The Contractor shall (i) conduct appropriate background checks on any personnel retained to provide security; (ii) train the security personnel adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms), and appropriate conduct towards Contractor's Personnel, Employer's Personnel and affected communities; and (iii) require the security personnel to act within the applicable Laws and any requirements set out in the Employer's Requirements.

The Contractor shall not permit any use of force by security personnel in providing security except when used for preventive and defensive purposes in proportion to the nature and extent of the threat.

In making security arrangements, the Contractor shall also comply with any additional requirements stated in the Employer's Requirements."

**Sub-Clause 4.23**

**Archaeological and Geological Findings**

The first paragraph is replaced with the following:

"All fossils, coins, articles of value or antiquity, structures, groups of structures, and other remains or items of geological, archaeological, paleontological, historical, architectural or religious interest found on the Site shall be placed under the care and custody of the Employer. The Contractor shall:

(a) take all reasonable precautions, including fencing-off the area or site of the finding, to avoid further disturbance and prevent Contractor's Personnel or other persons from removing or damaging any of these findings;

(b) train relevant Contractor's Personnel on appropriate actions to be taken in the event of such findings; and

(c) implement any other action consistent with the requirements of the Employer's Requirements and relevant Laws.

**Sub-Clause 4.24**

**Suppliers (other than Subcontractors)**

The following Sub-Clause is added:

**4.24.1 Forced Labour**

The Contractor shall take measures to require its suppliers (other than Subcontractors) not to employ or engage forced labour including trafficked persons as described in Sub-Clause 6.21. If forced labour/trafficking cases are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.

**4.24.2 Child labour**

The Contractor shall take measures to require its suppliers (other than Subcontractors) not to employ or engage child labour as described in Sub-Clause 6.22. If child labour cases are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.

**4.24.3 Serious Safety Issues**

The Contractor, including its Subcontractors, shall comply with all applicable safety obligations, including as stated in Sub-Clauses 4.4, 4.8 and 6.7. The Contractor shall also take measures to require its suppliers (other than Subcontractors) to

adopt procedures and mitigation measures adequate to address safety issues related to their personnel. If serious safety issues are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.

**4.24.4 Obtaining natural resource materials in relation to supplier**

The Contractor shall obtain natural resource materials from suppliers that can demonstrate, through compliance with the applicable verification and/ or certification requirements, that obtaining such materials is not contributing to the risk of significant conversion or significant degradation of natural or critical habitats such as unsustainably harvested wood products, gravel or sand extraction from river beds or beaches.

If a supplier cannot continue to demonstrate that obtaining such materials is not contributing to the risk of significant conversion or significant degradation of natural or critical habitats, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to demonstrate that they are not significantly adversely impacting the habitats.

**Sub-Clause 4.25** The following Sub-Clause is added:

**Code of Conduct**

The Contractor shall have a Code of Conduct for the Contractor's Personnel.

The Contractor shall take all necessary measures to ensure that each Contractor's Personnel is made aware of the Code of Conduct including specific behaviors that are prohibited, and understands the consequences of engaging in such prohibited behaviors.

These measures include providing instructions and documentation that can be understood by the Contractor's Personnel and seeking to obtain that person's signature acknowledging receipt of such instructions and/or documentation, as appropriate.

The Contractor shall also ensure that the Code of Conduct is visibly displayed in multiple locations on the Site and any other place where the Works will be carried out, as well as in areas outside the Site accessible to the local community and project affected people. The posted Code of Conduct shall be

provided in languages comprehensible to Contractor's Personnel, Employer's Personnel and the local community.

The Contractor's Management Strategy and Implementation Plans shall include appropriate processes for the Contractor to verify compliance with these obligations.

**Sub-Clause 4.26**

**Milestones**

The following Sub-Clause is added:

"If no Milestones are specified in the Contract Data, this Sub-Clause shall not apply.

The Contractor shall complete the works of each Milestone (including all work which is stated in the Employer's Requirements as being required for the Milestone to be considered complete) within the time for completion of the milestone, as stated in the Contract Data, calculated from the Commencement Date.

The Contractor shall include, in the initial programme and each revised programme, under sub-paragraph (a) of Sub-Clause 8.3 [*Programme*], the time for completion of each Milestone.

Sub-paragraph 9d) of Sub-Clause 8.4 [*Advance Warning*] and Sub-Clause 8.5 [*Extension of the Time for Completion*] shall apply to each Milestone, such that "Time for Completion" under Sub-Clause 8.5 shall be read as the time for completion of a Milestone under this Sub-Clause.

The Contractor may apply, by Notice to the Engineer, for a Milestone certificate not earlier than 14 days before the works of a Milestone will, in the Contractor's opinion, be complete. The Engineer shall, within 28 days after receiving the Contactor's Notice:

(a) issue the Milestone Certificate to the Contractor, stating the date on which the works of a Milestone were completed in accordance with the Contract, except for any minor outstanding work and defects (as shall be listed in the Milestone Certificate); or

(b) reject the application, giving reasons and specifying the work required to be done and defects required to be remedied by the Contractor to enable the Milestone Certificate to be issued.

The Contractor shall then complete the work referred to in subparagraph (b) of this Sub-Clause before issuing a further Notice of application under this Sub-Clause.

If the Engineer fails either to issue the Milestone Certificate or to reject the Contractor's application within the above period of 28 days, and if the works of a Milestone are completed in accordance with the Contract, the Milestone Certificate shall be deemed to have been issued on the date which is 14 days after the date stated in the Contractor's Notice of application.

If delay damages for a Milestone are stated in the Contract Data, and if the Contractor fails to complete the works of the Milestone within the time for completion of the Milestone (with any extension under this Sub-Clause):

(i) the Contractor shall, subject to Sub-Clause 20.1 [*Claims*], pay delay damages to the Employer for this default;

(ii) such delay damages shall be the amount stated in the Contract Data, for every day which shall elapse between the time for completion for the Milestone (with any extension under this Sub-Clause) and the date stated in the Milestone Certificate;

(iii) these delay damages shall be the only damages due from the Contractor for such default; and

(iv) the total amount of delay damages for all Milestones shall not exceed the maximum amount stated in the Contract Data (this shall not limit the Contractor's liability for delay damages in any case of fraud, gross negligence, deliberate default or reckless misconduct by the Contractor)."

**Sub-Clause 5.4**

**Technical Standards and Regulations**

The following is added as a second paragraph:

"If so stated in the Employer's Requirements, the Contractor shall:

(a) take into account climate change considerations in the design of structural elements of the Works and new buildings if any; and

(b) apply the concept of universal access to the design and construction of structures and new buildings if any (the concept of universal access means unimpeded access for people of all ages and abilities in different situations and under various circumstances.)"

**Sub-Clause 6.1**

**Engagement of Staff and Labour**

The following paragraphs are added at the end of the Sub-Clause:

"The Contractor shall provide the Contractor's Personnel information and documentation that are clear and

understandable regarding their terms and conditions of employment. The information and documentation shall set out their rights under relevant labour Laws applicable to the Contractor's Personnel (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from any requirements in the Employer's Requirements. The Contractor's Personnel shall be informed when any material changes to their terms or conditions of employment occur.

As specified in the Contract Data, the Contractor shall employ local labour with appropriate skills and experience. Local labour excludes Contractor's foreign personnel."

**Sub-Clause 6.2**

**Rates of Wages and Conditions of Labour**

The following paragraphs are added at the end of the Sub-Clause:

"The Contractor shall inform the Contractor's Personnel about:

(a) any deduction to their payment and the conditions of such deductions in accordance with the applicable Laws or as stated in the Employer's Requirements; and

(b) their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of the Country for the time being in force.

The Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

Where required by applicable Laws or as stated in the Employer's Requirements, the Contractor shall provide the Contractor's Personnel written notice of termination of employment and details of severance payments in a timely manner. The Contractor shall have paid the Contractor's Personnel (either directly or where appropriate for their benefit) all due wages and entitlements including, as applicable, social security benefits and pension contributions, on or before the end of their engagement/ employment."

**Sub-Clause 6.5**

**Working Hours**

The following is inserted at the end of the Sub-Clause

"The Contractor shall provide the Contractor's Personnel annual holiday and sick, maternity and family leave, as required by applicable Laws or as stated in the Employer's Requirements."

**Sub-Clause 6.6**

**Facilities for Staff and Labour**

The following is added as the last paragraph:

"If stated in the Employer's Requirements, the Contractor shall give access to or provide services that accommodate the physical, social and cultural needs of the Contractor's Personnel. The Contractor shall also provide similar facilities for the Employer's Personnel as stated in the Employer's Requirements."

**Sub-Clause 6.7**

**Health and Safety of Personnel**

In the second paragraph, "The Contractor" is replaced with:

"Except as otherwise stated in the Employer's Requirements, the Contractor…"

**Sub-Clause 6.9**

**Contractor's Personnel**

The Sub-Clause is replaced with:

"The Contractor's Personnel (including Key Personnel, if any) shall be appropriately qualified, skilled, experienced and competent in their respective trades or occupations.

The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative and Key Personnel (if any), who:

(a) persists in any misconduct or lack of care;

(b) carries out duties incompetently or negligently;

(c) fails to comply with any provision of the Contract;

(d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment;

(e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution of the Works;

(f) has been recruited from the Employer's Personnel in breach of Sub-Clause 6.3 [Recruitment of Persons];

(g) undertakes behaviour which breaches the Code of Conduct for Contractor's Personnel (ES).

If appropriate, the Contractor shall then promptly appoint (or cause to be appointed) a suitable replacement with equivalent skills and experience. In the case of replacement of the Contractor's Representative, Sub-Clause 4.3 [*Contractor's Representative*] shall apply. In the case of replacement of Key Personnel (if any), Sub-Clause 6.12 [*Key Personnel*] shall apply.

Subject to the requirements in Sub-Clause 4.3 [*Contractor's Representative*] and 6.12 [*Key Personnel*], and

| | |
|---|---|
| | notwithstanding any requirement from the Engineer to remove or cause to remove any person, the Contractor shall take immediate action as appropriate in response to any violation of (a) through (g) above. Such immediate action shall include removing (or causing to be removed) from the Site or other places where the Works are being carried out, any Contractor's Personnel who engages in (a), (b), (c), (d), (e) or (g) above or has been recruited as stated in (f) above." |
| **Sub-Clause 6.10** | Sub-Clause 6.10(a) is replaced with the following: |
| **Contractor's Records** | "Occupations, actual working hours for each class and skill category of Contractor's Personnel including identifying those engaged through local labour." |
| **Sub-Clause 6.12** | The following is inserted at the end of the last paragraph: |
| **Key Personnel** | "If any of the Key Personnel are not fluent in this language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer." |

**The following Sub-Clauses 6.13 to 6.27 are added after Sub-clause 6.12**

| | |
|---|---|
| **Sub-Clause 6.13**<br>**Foreign Personnel** | The Contractor may bring into the Country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence visas and work permits. The Employer will, if requested by the Contractor, use its best endeavours in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national, or government permission required for bringing in the Contractor's personnel.<br><br>The Contractor shall be responsible for the return of these personnel to the place where they were recruited or to their domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial. |
| **Sub-Clause 6.14**<br>**Supply of Foodstuffs** | The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Employer's Requirements at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract. |

| | |
|---|---|
| **Sub-Clause 6.15**<br>**Supply of Water** | The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel. |
| **Sub-Clause 6.16**<br>**Measures against Insect and Pest Nuisance** | The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide. |
| **Sub-Clause 6.17**<br>**Alcoholic Liquor or Drugs** | The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereto by Contractor's Personnel. |
| **Sub-Clause 6.18**<br>**Arms and Ammunition** | The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so. |
| **Sub-Clause 6.19**<br>**Festivals and Religious Customs** | The Contractor shall respect the Country's recognized festivals, days of rest and religious or other customs. |
| **Sub-Clause 6.20**<br>**Funeral Arrangements** | The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of its local employees who may die while engaged upon the Works. |
| **Sub-Clause 6.21**<br>**Forced Labour** | The Contractor, including its Subcontractors, shall not employ or engage forced labour. Forced labour consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements.<br><br>No persons shall be employed or engaged who have been subject to trafficking. Trafficking in persons is defined as the recruitment, transportation, transfer, harbouring or receipt of persons by means of the threat or use of force or other forms of coercion, abduction, fraud, deception, abuse of power, or of a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purposes of exploitation. |

**Sub-Clause 6.22**

**Child Labour**

The Contractor, including its Subcontractors, shall not employ or engage a child under the age of 14 unless the national law specifies a higher age (the minimum age).

The Contractor, including its Subcontractors, shall not employ a child between the minimum age and the age of 18 in a manner that is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

The Contractor including its Subcontractors, shall only employ children between the minimum age and the age of 18 after an appropriate risk assessment has been conducted by the Contractor with the Engineer's consent. The Contractor shall be subject to regular monitoring by the Engineer that includes monitoring of health, working conditions and hours of work.

Work considered hazardous for children is work that, by its nature or the circumstances in which it is carried out, is likely to jeopardize the health, safety, or morals of children. Such work activities prohibited for children include work:

(a) with exposure to physical, psychological or sexual abuse;

(b) underground, underwater, working at heights or in confined spaces;

(c) with dangerous machinery, equipment or tools, or involving handling or transport of heavy loads;

(d) in unhealthy environments exposing children to hazardous substances, agents, or processes, or to temperatures, noise or vibration damaging to health; or

(e) under difficult conditions such as work for long hours, during the night or in confinement on the premises of the employer.

**Sub-Clause 6.23**

**Employment Records of Workers**

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the name, age, gender, hours worked, category of skill (i.e. skilled, semi-skilled or unskilled), wages paid to all workers, and whether they are local labour as specified in Sub-Clause 6.1. These records shall be submitted to the Engineer on a monthly basis. The Employer will use the records to submit periodic reports to the Bank on local labour engagement. These records shall be included in the details to be submitted

by the Contractor under Sub-Clause 6.10 [*Contractor's Records*].

**Sub-Clause 6.24**

**Workers' Organisations**

In countries where the relevant labour laws recognise workers' rights to form and to join workers' organisations of their choosing and to bargain collectively without interference, the Contractor shall comply with such laws. In such circumstances, the role of legally established workers' organizations and legitimate workers' representatives will be respected, and they will be provided with information needed for meaningful negotiation in a timely manner. Where the relevant labour laws substantially restrict workers' organisations, the Contractor shall enable alternative means for the Contractor's Personnel to express their grievances and protect their rights regarding working conditions and terms of employment. The Contractor shall not seek to influence or control these alternative means. The Contractor shall not discriminate or retaliate against the Contractor's Personnel who participate, or seek to participate, in such organisations and collective bargaining or alternative mechanisms. Workers' organisations are expected to fairly represent the workers in the workforce.

**Sub-Clause 6.25**

**Non-Discrimination and Equal Opportunity**

The Contractor shall not make decisions relating to the employment or treatment of Contractor's Personnel on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment of Contractor's Personnel on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to any aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices.

Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination. The Contractor shall provide protection and assistance as necessary to ensure nondiscrimination and equal opportunity, including for specific groups such as women, people with disabilities, migrant workers and children (of working age in accordance with Sub-Clause 6.22).

**Sub-Clause 6.26**

**Contractor's Personnel Grievance Mechanism**

The Contractor shall have a grievance mechanism for Contractor's Personnel, and where relevant the workers' organizations stated in Sub-Clause 6.25, to raise workplace

| | |
|---|---|
| | concerns. The grievance mechanism shall be proportionate to the nature, scale, risks and impacts of the Contract. The mechanism shall address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned in a language they understand, without any retribution, and shall operate in an independent and objective manner.<br><br>The Contractor's Personnel shall be informed of the grievance mechanism at the time of engagement for the Contract, and the measures put in place to protect them against any reprisal for its use. Measures will be put in place to make the grievance mechanism easily accessible to all Contractor's Personnel.<br><br>The grievance mechanism shall not impede access to other judicial or administrative remedies that might be available, or substitute for grievance mechanisms provided through collective agreements.<br><br>The grievance mechanism may utilize existing grievance mechanisms, providing that they are properly designed and implemented, address concerns promptly, and are readily accessible to Contractor's Personnel. Existing grievance mechanisms may be supplemented as needed with Contract-specific arrangements. |
| **Sub-Clause 6.27**<br><br>**Training of Contractor's Personnel** | The Contractor shall provide appropriate training to relevant Contractor's Personnel on ES aspects of the Contract, including appropriate sensitization on prohibition of SEA and health and safety training referred to in Sub-Clause 4.8<br><br>As stated in the Employer's Requirements or as instructed by the Engineer, the Contractor shall also allow appropriate opportunities for the relevant Contractor's Personnel to be trained on ES aspects of the Contract by the Employer's Personnel.<br><br>The Contractor shall provide training on SEA, including its prevention, to any of its personnel who has a role to supervise other Contractor's Personnel. |
| **Sub-Clause 7.3 Inspection** | The following is added in the first paragraph after "Employer's Personnel" "(including the Bank staff or consultants acting on the Bank's behalf, stakeholders and third parties, such as independent experts, local communities, or non-governmental organizations)"<br><br>The following is added as (b) (iv):<br><br>"(iv) carryout environmental and social audit, and" |

**Sub-Clause 7.7**
**Ownership of Plant and Materials**

The following is added before the first paragraph:

"Except as otherwise provided in the Contract,"

**Sub-Clause 8.1**
**Commencement of Work**

The Sub- Clause is replaced in its entirety with the following:

"The Engineer shall give a Notice to the Contractor stating the Commencement Date, not less than 14 days before the Commencement Date.

The Notice shall be issued promptly after the Engineer determines the fulfilment of the following conditions:

(a) signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of the Country;

(b) delivery to the Contractor of reasonable evidence of the Employer's financial arrangements (under Sub-Clause 2.4 [Employer's Financial Arrangements]);

(c) except if otherwise specified in the Contract Data, effective access to and possession of the Site given to the Contractor together with such permission(s) under (a) of Sub-Clause 1.13 [Compliance with Laws] as required for the commencement of the Works.

(d) receipt by the Contractor of the Advance Payment under Sub-Clause 14.2 [Advance Payment] provided that the corresponding bank guarantee has been delivered by the Contractor; and

(e) constitution of the DAAB in accordance with Sub-Clause 21.1 and Sub-Clause 21.2 as applicable.

Subject to Sub-Clause 4.1 on the Management Strategies and Implementation Plans and the C-ESMP and Sub-Clause 4.8 on the health and safety manual, the Contractor, shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date, and shall then proceed with the Works with due expedition and without delay."

**Sub-Clause 8.3**

The following is added as Sub-Clause 8.3(l):

"Engagement plan for local labour, taking into account the order in which the Contractor intends to carry out the works as described under Sub-Clause 8.3(c)".

| | |
|---|---|
| **Sub-Clause 11.7**<br>**Right of Access after Taking Over** | In the second paragraph, "Whenever the Contractor intends to access any part of the Works during the relevant DNP:" is replaced with:<br>"Whenever, until the date 28 days after issue of the Performance Certificate, the Contractor intends to access any part of the Works:" |
| **Sub-Clause 13.3.1**<br>**Variation by Instruction** | Subparagraph 13.3.1 (a) is replaced with: "a description of the varied work performed or to be performed, including details of the resources and methods adopted or to be adopted by the Contractor, and sufficient ES information to enable an evaluation of ES risks and impacts; and sufficient information to enable assessment of cyber security risks as specified in the Contract Data." |
| **Sub-Clause 13.4**<br>**Provisional Sums** | The following is inserted as the penultimate paragraph:<br>"The Provisional Sum shall be used to cover the Employer's share of the DAAB members' fees and expenses, in accordance with Clause 21. No prior instruction of the Engineer shall be required with respect to the work of the DAAB. The Contractor shall submit the DAAB members' invoices and satisfactory evidence of having paid 100% of such invoices as part of the substantiation of those Statements submitted under Sub-Clause 14.3."<br>"Any E&S Provisional Sum shall be administered in accordance with the Employer's Requirements and shall not transfer to the Contractor any authority regarding eligibility, entitlement determination, compensation valuation or negotiation with project-affected persons." |
| **Sub-Clause 13.6**<br>**Adjustments for Changes in Laws** | The following paragraph is added at the end of the Sub-Clause:<br>"Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the Table of Adjustment Data in accordance with the provisions of Sub-Clause 13.7 [Adjustments for Changes in Cost]." |
| **Sub-Clause 14.1**<br>**The Contract Price** | "Any part of the Works which is to be measured shall be specified in the Contract.<br>The Engineer shall agree or determine the value of those parts of the Works which are to be measured, in accordance with |

Sub-Clause 3.7 [*Agreement or Determination*]. Measurement shall be made of the net actual quantities of those parts notwithstanding local practice.

Whenever the Engineer requires any part of the Works to be measured on Site. It shall give a Notice to the Contractor of not less than 7 days, of the part to be measured on the date on which and place on Site at which the measurement shall be made. Unless otherwise agreed with the Contarctor, the measuremnt on Site shall be made on this date and the Contractor's Representaive shall:

(a) either attend or send another qualified representative to assist the Engineer and to endeavour to reach agreement of the measurement, and

(b) supply any particulars requested by the Engineer.

If the Contractor fails to attend or send a representative at the time and place stated in the Engineer's Notice (or otherwise agreed with the Contractor), the measurement made by (or on behalf of) the Engineer shall be deemed to have been made in the Contractor's presence and the Contractor shall be deemed to have accepted the measuremnt as accurate.

Any part of the Permanent Works that is to be measured from records shall be identified in the Employer's Requirements and, except as otherwise stated in the Contarct, such records shall be prepared by the Engineer. Whenever the Engineer has prepared the records of such a part, it shall give a Notice to the Contarctor of not less than 7 days, stating the date on which and place at which the Contractor's Representative shall attend to examine and agree the records of the Engineer. If the Contractor fails to attend or send a representaive at the time and place stated in the Engineer's Notice ( or otherwise agreed with the Contarctor), the Contarctor shall be deemed to have accepted the records as accurate.

If, for any part of the Works, the Contractor attends the measuremnt on Site or examines the measurement records (as the case may be) but the Engineer and the Contractor are unable to agree the measurement, then the Contarctor shall give a Notice to the Engineer setting out the reasons why the Contractor considers the measuremnt on Site or records are inaccurate. If the Contractor does not give such a Notice to the Engineer within 14 days after attending the measuremnt on Site or examining the measurement records, the Contractor shall be deemed to have accepted the measurement as accurate.

After receiving a Contractor's Notice under this Sub-Clause, unless at that time such measuremnt is already subject to the third paragraph of Sub-Clause 13.3.1 [*Variation by Instruction*], the Engineer shall:

(a) proceed under Sub-Clause 3.7 [Agreeement or Determination] to agree or determine the measurement; and

(b) For the purpose of Sub-Clause 3.7.3 [*Time Limits*], the date on which the Engineer receives the Contractor's Notice shall be the date of commencement of the time limit for agreement under Sub-Clause 3.7.3.

Until such time as the measurement is agreed or determined, the Engineer shall assess a provisional measurement for the purposes of Interim Payment Certificates."

**Sub-Clause 14.2.1**

**Advance Payment Guarantee**

The first paragraph is replaced with:

"The Contractor shall obtain (at the Contractor's cost) an Advance Payment Guarantee in amounts and currencies equal to the advance payment and shall submit it to the Employer with a copy to the Engineer. This guarantee shall be issued by reputable bank or financial institution selected by the Contractor and shall be in accordance with the form included in the request for proposals documents for the subject contract or in another form acceptable to the Employer."."

**Sub-Clause 14.3**

**Application for Interim Payment**

The following is inserted at the end of (vi) after: *[Agreement or Determination]*: "any reimbursement due to the Contractor under the DAAB Agreement. (Appendix General Conditions of DAAB Agreement)."

Add at the end of Sub-Clause 14.3:

"Each Statement submitted by the Contractor shall be accompanied by the updated KPI Dashboard required under the Employer's Requirements, together with supporting records, registers, certificates, monitoring reports and other data necessary for the Engineer to verify KPI performance for the relevant reporting period. The Engineer may withhold certification of any amount affected by incomplete or unverifiable KPI data until such data is submitted and verified."

**Sub-Clause 14.4**

The following is inserted as the second paragraph:

**Schedule of Payments**

"If the Schedule of Payments specifies payments to be made to the Contractor based on Milestones, payments shall be made upon completion of such Milestones."

**Sub-Clause 14.6.2**

"and/or" from subparagraph (b) is deleted.

**Withholding (amounts in) an IPC**

The following is then added as subparagraph (c) and sub-paragraph (c) of the Sub-Clause is renumbered as (d):

"(c) if the Contractor was, or is, failing to perform any ES obligations or work under the Contract, the value of this work or obligation, as determined by the Engineer, may be withheld until the work or obligation has been performed, and/or the cost of rectification or replacement, as determined by the Engineer, may be withheld until rectification or replacement has been completed. Failure to perform includes, but is not limited to the following:

(i) failure to comply with any ES obligations or work described in the Employer's Requirements which may include: working outside site boundaries, excessive dust, damage to offsite vegetation, pollution of water courses from oils or sedimentation, contamination of land e.g. from oils, human waste, damage to archaeology or cultural heritage features, air pollution as a result of unauthorized and/or inefficient combustion;

(ii) failure to regularly review C-ESMP and/or update it in a timely manner to address emerging ES issues, or anticipated risks or impacts;

(iii) failure to implement the C-ESMP e.g. failure to provide required training or sensitization;

(iv) failing to have appropriate consents/permits prior to undertaking Works or related activities;

(v) failure to submit ES report/s (as described in Particular Conditions - Part D), or failure to submit such reports in a timely manner;

(vi) failure to implement remediation as instructed by the Engineer within the specified timeframe (e.g. remediation addressing non-compliance/s)."

(d) if the Contractor fails to materially comply with the Contractor's Local Labour Method Statement, an assessed

amount, as determined by the Engineer, may be withheld until such an obligation has been met."

The following is added as penultimate paragraph: "As specified in the Contract Data, if the Contractor fails to perform its cyber security obligations under the Contract, an assessed amount, as determined by the Engineer, may be withheld until the obligation has been performed."

**Sub-Clause 14.6.3**

Add the following new Sub-Clause 14.6.3:

"The Contractor's performance shall be monitored against the Contractual Performance Framework included in the Employer's Requirements.

Where the Contractor fails to achieve a KPI target in any reporting period, the Engineer shall notify the Contractor of such failure. The Contractor shall submit a Corrective Action Plan within ten (10) working days of such notice, unless a shorter period is specified in the Employer's Requirements or instructed by the Engineer due to the seriousness of the breach.

Except for Critical KPIs, no KPI Performance withholding shall be applied for the first reporting period in which a KPI target is not achieved, provided that the Contractor submits and implements a Corrective Action Plan to the satisfaction of the Engineer.

If the same KPI remains in breach for two (2) consecutive reporting periods, or if the Contractor fails to submit or implement the Corrective Action Plan within the required period, the Engineer shall be entitled to include a KPI Performance Withholding in the next Interim Payment Certificate.

The KPI Performance withholding shall be calculated as follows:

(a) one (1) KPI in sustained breach: zero point twenty five percent (0.25%) of the certified amount otherwise due in the relevant Interim Payment Certificate;

(b) two (2) to three (3) KPIs in sustained breach: zero point five percent (0.50%) of the certified amount otherwise due in the relevant Interim Payment Certificate; and

(c) more than three (3) KPIs in sustained breach: one percent (1.0%) of the certified amount otherwise due in the relevant Interim Payment Certificate.

The total KPI Performance Withholding applied in any single Interim Payment Certificate shall not exceed two point five

percent (2.5%) of the certified amount otherwise due in that Interim Payment Certificate.

Amounts withheld under this Sub-Clause shall be recorded in a notional KPI Performance Account. Such amounts shall be recoverable by the Contractor if the Contractor restores compliance with the relevant KPI target and thereafter maintains compliance for two (2) consecutive reporting periods, as verified by the Engineer. Upon such verification, the withheld amounts relating to the relevant KPI shall be released in the next Interim Payment Certificate.

Any amount remaining in the KPI Performance Account on the date of issue of the Taking-Over Certificate for the relevant Lot shall be permanently forfeited by the Contractor and retained by the Employer.

The application of a KPI Performance withholding shall not relieve the Contractor from any obligation under the Contract, shall not limit the Employer's rights under the Contract or at law, and shall not preclude the Engineer or the Employer from taking any other action available under the Contract, including requiring further corrective measures, withholding certification of non-compliant work, or issuing notices under Sub-Clause 15.1 or Sub-Clause 15.2, where applicable.

**For the purposes of Sub-Clause 14.6.3, the following KPIs shall be treated as Critical KPIs:**

(a) KPI Q1 — Inspection and Test Plan Hold Point Compliance;

(b) KPI S1 — Corrective Measure Implementation Rate Following LTI; and

(c) KPI S3 — Tunnelling Near-Miss Reporting Timeliness.

For Critical KPIs, the grace period in Sub-Clause 14.6.3 shall not apply. A breach of a Critical KPI shall trigger immediate escalation to the Engineer and the Employer and shall result in a KPI Performance withholding in the first reporting period of breach.

The same factual breach shall not be subject to duplicate financial withholding under both Sub-Clause 14.6.2 and 14.6.3, except where the Engineer determines that separate obligations have been breached.

Pre-Withholding Notification and Objection Procedure

At least fifteen (15) calendar days before the date on which the relevant Interim Payment Certificate is due to be issued,

the Engineer shall issue to the Contractor a draft KPI withholding notice setting out:

(i) the KPI breach or breaches relied upon;

(ii) the proposed KPI Performance Withholding amount;

(iii) the reporting period to which the proposed withholding relates;

(iv) the Engineer's assessment of whether Sub-Clause 14.6.2 and Sub-Clause 14.6.3 arise from the same factual breach or from separate obligations; and

(v) the supporting data and records on which the proposed withholding is based.

The Contractor may submit a written objection to the Engineer within five (5) Working Days after receipt of the draft KPI withholding notice. The objection shall identify the specific withholding disputed, the grounds of objection, and any supporting evidence relied upon by the Contractor.

The Engineer shall issue a final determination, with written reasons, within seven (7) Working Days after receipt of the Contractor's objection. If no objection is submitted within the above period, the Engineer may proceed to include the KPI Performance Withholding in the relevant Interim Payment Certificate.

Where an objection is pending, the disputed amount may be recorded in the notional KPI Performance Account, but shall not be treated as permanently forfeited unless and until the objection is resolved against the Contractor. If the objection is resolved in favour of the Contractor, the relevant amount shall be released in the next Interim Payment Certificate. If the objection is resolved against the Contractor, the amount shall remain in the notional KPI Performance Account and shall be subject to the recovery and forfeiture rules under this Sub-Clause.

**KPI Performance Withholding during an Extension of Time**

An extension of the Time for Completion or of the time for completion of any Milestone under Sub-Clause 8.5

[Extension of Time for Completion] shall not, of itself, suspend KPI monitoring or the application of the Contractual Performance Framework.

Where the Engineer determines under Sub-Clause 8.5 that the Contractor is entitled to an extension of time as a result of:

(a) an act, omission, prevention or delay attributable to the Employer, the Engineer, the Employer's Personnel or another contractor engaged by the Employer; or

(b) an Exceptional Event under Sub-Clause 18.1 [Exceptional Events], having consequences entitling the Contractor to an extension of time under Sub-Clause 18.4 [Consequences of an Exceptional Event],

the Engineer shall determine whether the achievement of any specific KPI was materially prevented by that event or circumstance.

KPI Performance Withholding shall be suspended only:

(i) in respect of each KPI specifically identified by the Engineer as having been materially affected;

(ii) to the extent that achievement of that KPI was directly prevented by the relevant event or circumstance; and

(iii) for the period during which such direct material prevention continued.

No suspension shall apply:

(A) merely because an extension of time has been granted;

(B) to any KPI that remained reasonably capable of achievement notwithstanding the relevant event or circumstance;

(C) to the extent that the relevant delay, disruption or failure was caused or contributed to by the Contractor; or

(D) where the extension of time arises from a matter allocated to the Contractor's risk under the Contract.

The Contractor shall bear the burden of demonstrating, separately for each affected KPI:

(1) the direct causal relationship between the relevant event or circumstance and the failure or inability to achieve the KPI target;

(2) the period during which achievement of the KPI was materially prevented; and

(3) the measures taken by the Contractor to avoid, mitigate or overcome the effect on the KPI.

The Contractor shall include such particulars and supporting records in its claim for an extension of time under Sub-Clause 8.5. The Engineer's determination under Sub-Clause 8.5 shall identify:

(A) each KPI for which KPI Performance Withholding is suspended;

(B) the commencement and expiry dates of the suspension; and

(C) any part of the relevant reporting period for which the KPI regime remains applicable.

KPI monitoring, data collection, verification and reporting shall continue throughout the suspension period. The performance results for an affected KPI during an approved suspension period shall be recorded in the KPI Dashboard for monitoring and record purposes only and shall not result in KPI Performance Withholding.

An approved suspension period shall be neutral for the purposes of calculating:

(a) the applicable grace period;

(b) consecutive reporting periods of sustained breach;

(c) the recovery condition for amounts held in the notional KPI Performance Account; and

(d) the Critical KPI breach thresholds under Sub-Clause 15.2.1.

Any reporting-period count accrued before the suspension shall be paused, but shall not be extinguished, and shall resume from the first full reporting period following expiry of the suspension.

Pending the Engineer's determination under Sub-Clause 8.5, KPI monitoring and the application of the Contractual Performance Framework shall continue. If the Engineer subsequently determines that KPI Performance Withholding should have been suspended for an earlier period, any amount withheld in respect of the affected KPI during that approved period shall be released or credited in the next Interim Payment Certificate.

Nothing in this sub-paragraph shall suspend or reduce any obligation relating to:

(a) health and safety;

(b) emergency response;

(c) incident and near-miss notification;

(d) environmental or social incident reporting;

(e) submission of KPI data and supporting records; or

(f) implementation of any measure that remained reasonably capable of performance during the relevant event or circumstance.

Any disagreement concerning the affected KPI, the causal relationship or the duration of the suspension shall be dealt with in accordance with Sub-Clause 14.6.5 [KPI Data Dispute Resolution Procedure].

**Sub-Clause 14.6.4**

Sub-Clause 14.6.4 — Aggregate Cap on Deductions and Withholdings from Interim Payment Certificates

Notwithstanding any other provision of the Contract, the aggregate amount withheld or deducted from any single Interim Payment Certificate in respect of:

(a) Retention Money under Sub-Clause 14.3;

(b) KPI Performance Withholding under Sub-Clause 14.6.3; and

(c) delay damages under Sub-Clause 8.8,

shall not exceed twelve point five percent (12.5%) of the gross certified amount otherwise due in that Interim Payment Certificate before the application of such retention, withholding or deduction.

Any amount which cannot be withheld or deducted from an Interim Payment Certificate due to the application of the above aggregate cap shall not be waived, released or deemed satisfied. Such amount shall be carried forward and applied as a first-priority withholding or deduction in the immediately following Interim Payment Certificate, subject again to the aggregate cap stated in this Sub-Clause.

The application of this Sub-Clause shall not reduce, waive, or otherwise limit the Employer's entitlement to Retention Money, KPI Performance Withholding, delay damages, or any other amount due under the Contract. This Sub-Clause shall only regulate the timing of recovery from Interim Payment Certificates.

For the purposes of this Sub-Clause, "gross certified amount" means the amount certified by the Engineer in the relevant Interim Payment Certificate before deduction of Retention Money, KPI Performance Withholding, delay damages, repayment of Advance Payment, or any other withholding or deduction.

**Sub-Clause 14.6.5**

**KPI Data Dispute Resolution Procedure**

If the Contractor disputes any factual data, measurement, calculation, or verification underlying the Engineer's KPI report or any proposed KPI Performance Withholding, the Contractor shall give a written KPI data dispute notice to the Engineer within five (5) Working Days after receipt of the

relevant verified KPI report or draft KPI withholding notice, whichever is earlier.

The KPI data dispute notice shall identify:

(a) the specific KPI data point, measurement, calculation, or verification disputed;

(b) the reporting period concerned;

(c) the grounds of dispute;

(d) the Contractor's proposed correction; and

(e) all supporting records and evidence relied upon by the Contractor.

The Engineer shall review the KPI data dispute notice and respond in writing within five (5) Working Days after receipt of the notice.

If the dispute is not resolved by the Engineer's response, the matter shall be referred to a meeting of senior representatives of the Employer, the Engineer and the Contractor. Such meeting shall be held within seven (7) Working Days after the Engineer's response, unless otherwise agreed by the Parties.

If the senior representatives fail to resolve the dispute within five (5) Working Days after the meeting, either Party may refer the dispute to the DAAB in accordance with Sub-Clause 21.4.

Compliance with the procedure in this Sub-Clause shall be a condition precedent to referral of a KPI data dispute to the DAAB, except where the dispute concerns an urgent safety matter or where immediate action is required to prevent risk to life, health, the Works, the environment or railway safety.

For KPI data disputes involving a Critical KPI, the above time periods shall be compressed as follows: the Contractor shall submit its dispute notice within two (2) Working Days, the Engineer shall respond within two (2) Working Days, and any senior representatives' meeting shall be held within three (3) Working Days after the Engineer's response.

Any disputed KPI Performance Withholding applied during the KPI data dispute procedure shall be recorded in the notional KPI Performance Account but shall not be treated as permanently forfeited pending final resolution of the dispute. If the dispute is resolved in favour of the Contractor, the relevant amount shall be released in the next Interim Payment Certificate. If the dispute is resolved against the Contractor, the amount shall remain in the notional KPI Performance Account and shall be subject to the recovery and forfeiture rules under Sub-Clause 14.6.3.

**Sub-Clause 14.6.6**

**Review of KPI Targets on Material Scope Change**

If a Variation under Sub-Clause 13.1, or any other instructed or agreed change to the Works, materially affects the basis on which one or more KPI targets were established, either Party may request a review of the affected KPI target or targets in accordance with this Sub-Clause.

A KPI target review may be requested where:

(a) the cumulative value of the relevant Variation or Variations exceeds five percent (5%) of the Accepted Contract Amount;

(b) the change adds or materially modifies underground works, station works, major interface obligations, system integration obligations, testing and commissioning obligations, or other works materially affecting KPI performance;

(c) the change materially affects the Time for Completion or any Milestone stated in the Contract Data; or

(d) the change otherwise materially alters the risk profile, sequencing, access conditions, or performance basis underlying the relevant KPI target.

A Party requesting a KPI target review shall give Notice to the Engineer and the other Party within twenty-eight (28) days after becoming aware, or when it should reasonably have become aware, of the circumstances giving rise to the request. The Notice shall identify the affected KPI target or targets, the relevant change in scope or circumstances, the proposed adjustment, and the supporting particulars.

The Engineer shall convene a KPI Target Review Meeting with senior representatives of the Employer and the Contractor within fourteen (14) days after receipt of the Notice. The Engineer shall consult with the Parties and shall seek to facilitate agreement on any necessary adjustment to the affected KPI target or targets.

Any revised KPI target shall require the Employer's prior written approval and shall be recorded in a KPI Target Register maintained by the Engineer. No revised KPI target shall take effect unless and until it has been approved in writing by the Employer and recorded in the KPI Target Register.

Pending completion of the KPI target review process, the existing KPI targets shall continue to apply and the Contractor shall not be relieved from compliance with the Contractual Performance Framework.

If the Parties fail to agree on the revised KPI target within twenty-eight (28) days after the KPI Target Review Meeting, either Party may refer the matter to the DAAB in accordance with Sub-Clause 21.4.

**Sub-Clause 14.7**

**Payment**

At the end of sub-paragraph (b): "and" is replaced with "or" and the following inserted as (iii):

"(iii) at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the amount shown on any statement submitted by the Contractor within 14 days after such statement is submitted, any discrepancy being rectified in the next payment to the Contractor; and"

At the end of sub-paragraph (c): "." is replaced with ";" and the following inserted:

"or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended the undisputed amount shown in the Final Statement within 56 days after the date of notification of the suspension in accordance with Sub-Clause 16.2 [Termination by Contractor]."

**Sub-Clause 14.9**

The following is added at the end of Sub-Clause 14.9:

| | |
|---|---|
| **Release of Retention Money** | "Unless otherwise stated in the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a guarantee, in the form annexed to the Particular Conditions or in another form approved by the Employer and issued by a reputable bank or financial institution selected by the Contractor, for the second half of the Retention Money. The Contractor shall ensure that the guarantee is in the amounts and currencies of the second half of the Retention Money and is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects, as specified for the Performance Security and, if applicable, an ES Performance Security in Sub-Clause 4.2. On receipt by the Employer of the required guarantee, the Engineer shall certify, and the Employer shall pay the second half of the Retention Money. The release of the second half of the Retention Money against a guarantee shall then be in lieu of the release after the latest of the expiry dates of the Defects Notification Periods. The Employer shall return the guarantee to the Contractor within 21 days after receiving a copy of the Performance Certificate.<br><br>If the Performance Security and, if applicable, an ES Performance Security required under Sub-Clause 4.2 is in the form of a demand guarantee, and the amount guaranteed under them when the Taking-Over Certificate is issued is more than half of the Retention Money, then the Retention Money guarantee will not be required. If the amount guaranteed under the Performance Security and, if applicable, an ES Performance Security, when the Taking-Over Certificate is issued is less than half of the Retention Money, the Retention Money guarantee will only be required for the difference between half of the Retention Money and the amount guaranteed under the Performance Security and, if applicable, an ES Performance Security." |
| **Sub-Clause 14.15**<br><br>**Currencies of Payment** | Throughout Sub-Clause 14.15, "Contract Data" is replaced with: "Schedule of Payment Currencies". |
| **Sub-Clause 15.1**<br><br>**Notice to Correct** | "and" is deleted from (b) and<br><br>"." is replaced by: "; and" in (c).<br><br>The following is then added as (d)<br><br>"(d) specify the time within which the Contractor shall respond to the Notice to Correct." |

In the third para., "shall immediately respond" is replaced with: "shall respond within the time specified in (d)". Further, in the third para., "to comply with the time specified in the Notice to Correct." is replaced with: "to comply with the time specified in (c)."

**Sub-Clause 15.2**

Add Sub-Clause 15.2.1 (g) as an additional ground for default as follows:

(i) the Contractor remains in sustained breach of more than three (3) KPIs for three (3) consecutive reporting periods;

(ii) the Contractor has three verified breaches of any Critical KPI, or two verified breaches of the same Critical KPI, within any rolling six-month period;

(iii)the Contractor persistently fails to submit, implement, or complete Corrective Action Plans required under the Employer's Requirements or Sub-Clause 14.6.3, where such failure has continued across two (2) or more consecutive reporting periods following a Notice to Correct issued by the Employer under Sub-Clause 15.1, and the Contractor has not demonstrated to the Engineer's satisfaction that adequate remedial measures have been taken.

Before exercising the right to terminate under sub-paragraph (g)(ii), the Employer shall give the Contractor a Notice to Correct under Sub-Clause 15.1, requiring the Contractor to implement permanent corrective measures within twenty-eight (28) days. If the Contractor demonstrates, to the Engineer's satisfaction, that such permanent corrective measures have been implemented within that period and thereafter maintains compliance with the relevant Critical KPI for two (2) consecutive reporting periods, the Employer's right to terminate on the basis of the relevant Critical KPI breaches shall lapse, without prejudice to any KPI Performance Withholding or other rights accrued prior to such lapse.

For the avoidance of doubt, the existence of KPI Performance withholdings under Sub-Clause 14.6.3 shall not prevent the Employer from exercising any right under this Sub-Clause where the Contractor's underperformance constitutes a default under the Contract."

**Sub-Clause 15.2.1**

**Notice**

Sub-paragraph (h) is replaced with: "based on reasonable evidence, has engaged in Fraud and Corruption as defined in paragraph 2.2 of the Particular Conditions - Part C- Fraud and Corruption, in competing for or in executing the Contract."

**Sub-Clause 15.8**

**Fraud and Corruption**

The following new Sub-Clause is added:

15.8.1 "The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the Bank's Sanctions Framework, as set forth in Particular Conditions - Part C- Fraud and Corruption."

15.8.2 The Employer requires the Contractor to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the request for proposals process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee."

**Sub-Clause 16.1**

**Suspension by Contractor**

The following paragraph is inserted after the first paragraph:

"Notwithstanding the above, if the Bank has suspended disbursements under the loan or credit from which payments to the Contractor are being made, in whole or in part, for the execution of the Works, and no alternative funds are available as provided for in Sub-Clause 2.4 [Employer's Financial Arrangements], the Contractor may by notice suspend work or reduce the rate of work at any time, but not less than 7 days after the Borrower having received the suspension notification from the Bank."

**Sub-Clause 16.2.1**

**Notice**

Sub-paragraph (j) is deleted in its entirety.

At the end of sub-paragraph (i): "; or" is replaced with: "."

sub-paragraph (f) is replaced with:

"(f) the Contractor does not receive a Notice of the Commencement Date under Sub-Clause 8.1 [*Commencement of Works*] within 180 days after receiving the Letter of Acceptance, for reasons not attributable to the Contractor."

**Sub-Clause 16.2.2**

**Termination**

The following is added at the end of Sub-Clause 16.2.2:

"In the event the Bank suspends the loan or credit from which part or whole of the payments to the Contractor are being made, if the Contractor has not received the sums due to him

| | |
|---|---|
| | upon expiration of the 14 days referred to in Sub-Clause 14.7 [Payment] for payments under Interim Payment Certificates, the Contractor may, without prejudice to the Contractor's entitlement to financing charges under Sub-Clause 14.8 [Delayed Payment], take one of the following actions, namely (i) suspend work or reduce the rate of work under Sub-Clause 16.1 above, or (ii) terminate the Contract by giving notice to the Employer, with a copy to the Engineer, such termination to take effect 14 days after the giving of the notice." |
| **Sub-Clause 17.7** | The following Sub-Clause is added as 17.7: |
| **Use of Employer's Accommodation/Facilities** | "The Contractor shall take full responsibility for the care of the Employer-provided accommodation and facilities, if any, as detailed in the Employer's Requirements, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works)<br><br>If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Employer is liable, the Contractor shall, at its own cost, rectify the loss or damage to the satisfaction of the Engineer." |
| **Sub-Clause 18.1** | Sub-paragraph (c) is substituted with: |
| **Exceptional Events** | "(c) riot, commotion, disorder or sabotage by persons other than the Contractor's Personnel and other employees of the Contractor and Subcontractors;" |
| **Sub-Clause 18.4** | The following is added at the end of sub-paragraph (b) after deleting the ".": |
| **Consequences of an Exceptional Event** | ", including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Exceptional Events, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause 19.2 [ Insurance to be provided by the Contractor]." |
| **Sub-Clause 18.5** | In sub-paragraph (c), "and necessarily" is inserted after "was reasonably". |
| **Optional Termination** | |
| **Sub-Clause 19.1** | The following paragraphs are added after the first: |
| **General Requirements** | "Wherever the Employer is the insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with terms (if any) |

| | |
|---|---|
| | agreed by both Parties before the date of the Letter of Acceptance.<br><br>This agreement of terms shall take precedence over the provisions of this Clause." |
| **Sub-Clause 19.2**<br><br>**insurance to be provided by the Contractor** | The following is inserted as the first sentence in Sub-Clause 19.2:<br><br>"The Contractor shall be entitled to place all insurances relating to the Contract (including, but not limited to the insurance referred to in Clause 19) with insurers from any eligible source country." |
| **Sub-Clause 19.2.5**<br><br>**Injury to employees** | The second paragraph is replaced with:<br><br>"The Employer and the Engineer shall also be indemnified under the policy of insurance, against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer's Personnel." |
| **Sub-Clause 20.1**<br><br>**Claims** | In a): "any additional payment" is replaced with "payment". |
| **Sub-Clause 20.2**<br><br>**Claims for Payment and/or EOT** | The first paragraph is replaced with:<br><br>"If either Party considers that it is entitled to claim under Sub-clause 20.1[*Claims*] (a) or (b), the following claim procedure shall apply:" |
| **Sub-Clause 21.1**<br><br>**Constitution of the DAAB** | In the second paragraph, at the end of the first sentence after deleting: ".", the following is added: ", each of whom shall meet the criteria set forth in Sub-Clause 3.3 of Appendix-General Conditions of DAAB Agreement."<br><br>After the second paragraph insert the following paragraph: "If the Contract is with a foreign Contractor, the DAAB members shall not have the same nationality as the Employer or the Contractor." |
| **Sub-Clause 21.2**<br><br>**Failure to Appoint DAAB Member (s)** | For both (a) and (b): "by the date stated in the first paragraph of Sub-Clause 21.1 [*Constitution of the DAAB*]" is replaced with: "within 42 days from the date the Contract is signed by both Parties." |

| | |
|---|---|
| Sub-Clause 21.6<br>Arbitration | In the first paragraph, delete starting from: "international arbitration" up to the end of (c), and replace with the following:<br>"arbitration. Arbitration shall be conducted as follows:<br>(a) if the contract is with foreign contractors, unless otherwise specified in the Contract Data; the dispute shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce; by one or three arbitrators appointed in accordance with these Rules. The place of arbitration shall be the neutral location specified in the Contract Data; and the arbitration shall be conducted in the ruling language defined in Sub-Clause 1.4 [Law and Language].<br>(b) If the Contract is with domestic contractors, arbitration with proceedings conducted in accordance with the laws of the Employer's country." |

**Appendix- General Conditions of DAAB Agreement**

| | |
|---|---|
| 1. **Definitions** | In Sub-Clause 1.8 a(i):" authorised representative of the contractor or of the Employer" is replaced with: "Contractor's Representative and authorised representative of the Employer" |
| 2. **General provisions** | Sub-Clause 2.2 is deleted in its entirety. |
| 3. **Warranties** | Sub-Clause 3.3 is deleted and replaced with the following:<br>"When appointing the DAAB Member, each Party relies on the DAAB Member's representations, that he/she:<br>a) has at least a bachelor's degree in relevant disciplines such as law, engineering, construction management or contract management;<br>b) has at least ten years of experience in contract administration/management and dispute resolution, out of which at least five years of experience as an arbitrator or adjudicator in construction-related disputes;<br>c) has received formal training as an adjudicator from an internationally recognized organization;<br>d) has experience and/or is knowledgeable in the type of work which the Contractor is to carry out under the Contract; |

e) has experience in the interpretation of construction and/or engineering contract documents;

f) has familiarity with the forms of contract published by FIDIC since 1999, and an understanding of the dispute resolution procedures contained therein; and

g) is fluent in the language for communications stated in the Contract Data (or the language as agreed between the Parties and the DAAB)."

**7. Confidentiality**

In Sub-Clause 7.3: "or" is deleted after sub-paragraph (b).

and the following sub-paragraphs added:

"(d) is being provided to the Bank"

**9. Fees and Expenses**

In Sub-Clause 9.1 c): "business class or equivalent" is replaced with: "in less than first class"

In Sub-Clause 9.4: "and air fares" and "other" are deleted from the first and second sentences respectively.

## ANNEX – CV OF PROPOSED DAAB MEMBERS

### PERSONAL INFORMATION

Name, Surname : Fahrettin Öner
Date of Birth : 05.06.1971
Nationality : Turkish

### EDUCATION

Education : Bsc. In Civil Engineering / İstanbul Technical University

### EXPERIENCE

| Date | Company | Position | Description |
|---|---|---|---|
| 22.11.2021 – Ongoing | Istanbul Metropolitan Municipality / Licence and Inspection Directorate | Engineer | |
| 25.06.2021 – 22.11.2021 | Istanbul Metropolitan Municipality / Department of Rail System, Rail System Projects Directorate | Deputy Head of Department | |
| 08.08.2019 - 22.11.2021 | Istanbul Metropolitan Municipality / Department of Rail System, Anatolian Side Rail System Directorate | Head of Department | Projects worked on:<br>• Dudullu-Bostanci Metro Line (14.27 km)<br>• Ümraniye-Ataşehir-Göztepe Metro Line (13.03 km)<br>• Kaynarca Centre-Pendik-Tuzla Tersane Metro Line (7,88 km)<br>• Pendik Merkez-Kaynarca Merkez Metro Line (4.10 km)<br>• Cekmekoy-Sancaktepe-Sultanbeyli Centre Metro Line (10.89 km)<br>• Acceptance processes of Üsküdar-Ümraniye-Çekmeköy Metro Line (20 km) |
| 2012-08.08.2019 | Istanbul Metropolitan Municipality / Department of Studies and Projects, Infrastructure Projects Directorate | Deputy Head of Department | Design and tender documents for the projects below are completed:<br>• Dudullu-Bostanci Metro Line (14,27 km)<br>• Ümraniye-Ataşehir-Göztepe Metro Line (13.03 km)<br>• Kirazli-Halkali Metro Line (9,67 km)<br>• Kaynarca Centre-Pendik-Tuzla Tersane Metro Line (7,88 km)<br>• Pendik Merkez-Kaynarca Merkez Metro Line (4.10 km)<br>• Sarıgazi (Hospital)-Taşdelen-Yenidoğan Metro Line (6,86 km)<br>• Cekmekoy-Sancaktepe-Sultanbeyli Centre Metro Line (10.89 km)<br>• Sultanbeyli-Kurtköy (Viaport) High Speed Train Station (HST) Metro Line (5,41 km)<br>• Vezneciler-Edirnekapı-Eyüp-GOP-Sultangazi Metro Line (17,30 km)<br>• Beykoz (Sultaniye Park)-Karlıtepe Cable Car Line (1.50 km)<br>• Beykoz Meadow-Hazreti Yuşa Hill Cable Car Line (2.50 km)<br>Moreover, Drilling tunnel type, slope tunnel type and shaft type fully automatic mechanical car park |

| | | | |
|---|---|---|---|
| | | | application projects and various conventional underground car park application projects were prepared. |
| 2006-2012 | Istanbul Metropolitan Municipality / Department of Rail System, | Supervisor | Projects worked on:<br>• Istanbul Metro Phase III 4.Levent-Ayazaga-Hacıosman Section, Seyrantepe Depot Area and Depot Connection Lines Construction (8 km)<br>• Kadıköy-Kartal Metro Line Construction (21.7 km) Otogar-Bağcılar-Kirazlı Metro Line Construction (5.8 km)<br>• Bağcılar (Kirazlı)-Başakşehir-Olympic Park Metro Line Construction (15,9 km) |
| 2004-2006 | Freelancer | | Worked on:<br>• Urban Design Projects<br>• City Information System Projects |
| 2002-2004 | Transstroy-Hazinedaroğlu-Ünüvar JV | Site Engineer | Projects worked on:<br>• Edirnekapı-Sultançiftliği Tram Line Construction and Electromechanical Works (12.5 km)<br>• Eminönü-Kabataş Tram Line Construction and Electromechanical Works (2.9 km) |
| 1998-2002 | Istanbul Metropolitan Municipality / Directorate of Transportation / Department of Transport Planning | Project Engineer | ystem lines throughout Istanbul within the framework of Master Plan<br>ys and junctions |

**PERSONAL INFORMATION**

Name, Surname : Mehmet Tarık Dündar
Date of Birth : 27.01.1975
Nationality : Turkish

**EDUCATION**

Education : Yıldız Technical University / Civil Technician
BSc. In Civil Engineering / Yıldız Technical University
MSc. In Transportation Engineering / Istanbul Technical University
PhD. In Transportation Engineering / Istanbul Technical University

**EXPERIENCE**

| Date | Company | Position | Description |
|---|---|---|---|
| 08.2020 – Ongoing | TCDD TEKNİK Mühendislik ve Müşavirlik A.Ş | Director | Projects worked on:<br>• Design of Derince Station Area, Loading - Unloading Areas<br>• Preparation of Stage 2 Earthquake Investigation Reports for the Buildings in TCDD 1st Regional Directorate<br>• Safety Evaluation of Kayaş- Sivas High-Speed Train Line and Control of Viaducts on this Line Section According to 300km/h Project Speed<br>• TCDD Study Project and Consultancy Service Procurement for the Extension and Arrangements of 4 Stations between Karaman-Ulukisla<br>• Contract for Independent Safety Assessment Services for Geyve-Doğançay, Konya -Karaman, Kayaş-Sivas High Speed Train Line Construction Projects<br>• Dakar / Senegal Train Line Condition Monitoring and Reporting Works<br>• Ministry of Transport and Infrastructure General Directorate of Infrastructure Investments Technical Documents (Technical Specifications, Unit Price Lists, Unit Price Recipes, Unit Price Analyses) and Legislation<br>• Feasibility Studies and Preliminary Project Preparation of Amasya Nostalgic Tram Line Service Procurement Work<br>• Preparation of Detailed Design of TCDD Adapazarı, Muş & Tatvan Station Building<br>• Line Geometry, Vehicle Dynamic Acceleration, Pantograph Dynamic Interaction Tests and Reports on TCDD High Speed Train Line<br>• Survey, Project and Engineering Service Procurement for Investigation of Infrastructures on Various Line Sections in TCDD 1st Region Area according to New Regulations<br>• Investigation and Risk Analyses of Existing/Potential Karst Formations in the Ankara - Konya - Ulukisla Railway Corridor, which may have a negative impact due to Climate Change and Groundwater Use Research Engineering Service Procurement |

| | | | |
|---|---|---|---|
| | | | • Investigation of Various Art Structures on Existing Railway Lines in Terms of Seismicity According to the Updated Earthquake Map Research Engineering Service Procurement<br>• Konya Barış Caddesi Tram Line Final Design Services<br>• Konya Stadium City Hospital Tram Line Final Design Services |
| 09.2019 – 08.2020 | Aecom / SKAA (Systra - Aecom-Khatib Alami) JV | Engineer | **Name of the Project:** Mecca BRT and Bus Depot and Maintenance Workshop Construction Consultant Project<br><br>**Tasks Performed:**<br>• Procurement, Operation and Maintenance of the Mecca Bus Project Phase 1, awarded as a FIDIC Gold Book Design Build and Operate contract. The total contract duration is ten (10) years, two (2) years for the completion of design and construction and (8) years for the operation and maintenance of the buses.<br>• Civil Infrastructure Works for the Bus Network, awarded as a FIDIC Red Book Design and Build contract. The total contract duration is two (2) years.<br>• Responsible for Coordination between the Parties and MMRTC<br>• Design Review Assignment and Distribution Officer for Bus Depot and Workshop Buildings.<br>• Design Review Officer for Bus Terminal and its structures.<br>• Provide training, direction, supervision and mentoring to junior staff.<br>• Assisting and managing the Construction Control team.<br>• Reviewing and approving Contractor's Material Submittals<br>• Review and approve the Contractor's Supplier Approval<br>• Review of Works to Contractor's Declaration Method<br>• Control and approval of progress payments<br>• To assist the occupational safety inspection team. |
| 05.2014-07.2019 | WSP Parsons Brinckerhoff | Design Manager | **Name of the Project:** Mecca Public Transport System Programme Senior Management Consultant Project<br><br>**Tasks Performed:**<br><br>• Technical evaluation of Construction and System Tenders for Mecca Metro<br>• (45 km line length, Approximate Tender Price: 8 Billion Dollars)<br>• Responsibility for all design works under Mecca Senior Management Consultancy.<br>• Consultancy services for new metro lines -RFP-Preparation of tender technical documents and specifications (preliminary design of metro lines)<br>• Participate in the evaluation of the technical proposals submitted by the contractors and consultants for the following items (Metro construction (cut and cover, TBM and Natm |

| | | | |
|---|---|---|---|
| | | | Tunnelling & Depot building) and system works and Bus infrastructure and PMCM).<br>• Controlling the tender projects prepared in Phase 2 of the metro project (Designer: Systra) on behalf of the Contracting Authority<br>• Review design studies, pre-qualification documents, material submittals and assist in providing technical support to the design team. (For Bus Maintenance and Operation Tender (Approximate Tender Value: 1 Billion USD) and Bus Infrastructure Tender (Approximate Tender Value: 100 Million USD))<br>• Establish and chair weekly progress meetings to review project processes - Meeting management<br>• Prepare weekly and monthly reports for the administration.<br>• To liaise and coordinate design with consultancy offices.<br>• Preparing Technical reports for interfaces<br>• Technical design work, checking and obtaining approvals.<br>• Providing training, instruction, supervision and counselling to junior staff<br>• Ensuring compliance with the company's Quality Assurance policies and procedures.<br>• Provide input for performance reviews and development plans for subordinates.<br>• Business development responsibility<br>• Assisting the HR Manager with staff recruitment.<br>• Providing technical assistance to the client's senior management |
| 01.2012-<br>05.2014 | Metro İstanbul A.Ş. | Project Coordinator | **Name of the Project:** Medina Metro Project<br><br>**Tasks Performed:**<br><br>• Coordination and Management of Administration and Stakeholder Relations<br>• Responsibility for Architectural, Civil and Electromechanical design groups. Design for Metrobus, Metro and LRT stations, Maintenance Buildings and Warehouse area (Concept, Preliminary & Final), E & M Design for stations and other buildings, (Cut and cover, TBM and Natm Tunnel Construction & Warehouse Area building)<br>• Transport and Traffic Engineering, Business studies<br>• Participation in Feasibility Studies<br>• Preparation of technical and tender documents |
| 01.2011-<br>05.2012 | Metro İstanbul A.Ş. | Project Coordinator | **Name of the Project:** Lahore Metrobus Project<br><br>**Tasks Performed:**<br><br>• Coordination and Management of Administration and Stakeholder Relations<br>• Preparation of Route Projects<br>• Responsibility for Architectural, Civil and Electromechanical design groups. Design (Concept, Pre & Final) for Metrobus, Metro and LRT stations, Maintenance Buildings and Warehouse area, E & M Design for Stations and other buildings,<br>• Transport and Traffic Engineering, Business studies |

| | | | |
|---|---|---|---|
| | | | • Participation in Feasibility Studies<br>• Preparation of technical and tender documents |
| 2005-2014 | Metro İstanbul A.Ş. | Project Engineer / Project Coordinator | **Name of the Project:** Üsküdar - Ümraniye- Çekmeköy Metro Project<br><br>**Tasks Performed:**<br>• Coordination and Management of Administration and Stakeholder Relations<br>• Preparation of Route Projects<br>• Responsibility for Architectural, Civil and Electromechanical design groups. Design for Metrobus, Metro and LRT stations, Maintenance Buildings and Warehouse area (Concept, Preliminary & Final Design), E & M Design for stations and other buildings, (Cut-and-cover, TBM and Natm Tunnel Construction & Warehouse Area building)<br>• Transport and Traffic Engineering, Business studies<br>• Participation in Feasibility Studies<br>• Preparation of technical and tender documents |
| 09.2000-01.2012 | Metro İstanbul A.Ş. | Project Engineer / Project Coordinator | **Name of the Project:** Kadıköy -Kartal- Pendik Metro Project<br><br>**Tasks Performed:**<br>• Coordination and Management of Administration and Stakeholder Relations<br>• Preparation of Route Projects<br>• Responsibility for Architectural, Civil and Electromechanical design groups. Design for Metrobus, Metro and LRT stations, Maintenance Buildings and Warehouse area (Concept, Preliminary & Final Design), E & M Design for stations and other buildings, (Cut-and-cover, TBM and Natm Tunnel Construction & Warehouse Area building)<br>• Transport and Traffic Engineering, Business studies<br>• Participation in Feasibility Studies<br>• Preparation of technical and tender documents<br>• Maltepe Underground Workshop Design<br>• Esenkent Control Centre and Administrative Building Design |
| 06.2013 – 05.2014 | Metro İstanbul A.Ş. | Design Chief | **Name of the Project:** Göztepe-Finans Centre-Umraniye Metro Preliminary Project<br><br>**Tasks Performed:**<br><br>• Architectural design of Metro stations and Maintenance Building and depot (Concept, Preliminary & Final Design),<br>• Participation in Feasibility Studies<br>• Preparation of technical and tender documents |
| 09.2010 – 06.2012 | Metro İstanbul A.Ş. | Design Chief | **Name of the Project:** Ikitelli- Atakoy Metro Final Project<br><br>**Tasks Performed:**<br>• Architectural design of Metro stations and Maintenance Building and depot (Concept, Preliminary & Final Design),<br>• Participation in Feasibility Studies<br>• Preparation of technical and tender documents |

| | | | |
|---|---|---|---|
| 01.2010 – 06.2012 | Metro İstanbul A.Ş. | Design Chief | **Name of the Project:** Söğütlüçeşme - Kazlıçeşme Metro Preliminary Project<br><br>**Tasks Performed:**<br>• Architectural design of Metro stations and Maintenance Building and depot (Concept, Preliminary & Final Design),<br>• Participation in Feasibility Studies<br>• Preparation of technical and tender documents |
| 10.2007 – 11.2009 | Metro İstanbul A.Ş. | Design Chief | **Name of the Project:** Şişhane - Kasimpasa - Okmeydanı - Mecidiyekoy Rail System Line Project<br><br>**Tasks Performed:**<br>• Architectural design of Metro stations and Maintenance Building and depot (Concept, Preliminary & Final Design),<br>• Participation in Feasibility Studies<br>• Preparation of technical and tender documents |
| 01.2008 – 01.2009 | Metro İstanbul A.Ş. | Design Chief | **Name of the Project:** Trabzon Municipality Rail System Application Project and Feasibility Study Preparation Service Procurement<br><br>**Tasks Performed:**<br>• Architectural design of Metro stations and Maintenance Building and depot (Concept, Preliminary & Final Design),<br>• Participation in Feasibility Studies<br>• Preparation of technical and tender documents |

**PERSONAL INFORMATION**

Name, Surname : Musa Tuncay
Date of Birth : 01.05.1959
Nationality : Turkish

**EDUCATION**

Education : BSc. In Civil Engineering Eskisehir State Architecture Engineering Academy
MSc. In Civil Engineering / Gazi University

**EXPERIENCE**

| Date | Company | Position | Description |
|---|---|---|---|
| 2019-2023 | KMG Proje | Civil Engineer | Projects worked on:<br>• Manavgat-Seydisehir Railway Project<br>• Merzifon-Samsun Railway Project<br>• Ulukisla-Yenice Railway Project<br>• Kars-Iğdır Railway Project<br>• Polatli Military Region (Centre of Excellence) Railway Interconnection Line Project |
| 2018-2019 | Su Yapı Mühendislik | Civil Engineer | Projects worked on:<br>• Manavgat-Seydisehir Railway Project<br>• Merzifon-Samsun Railway Project<br>• Ulukisla-Yenice Railway Project<br>• Ispartakule-Çerkezköy Railway Project |
| 2014-2018 | KMG Proje | Civil Engineer | Projects worked on:<br>• Manavgat-Seydisehir Railway Project<br>• Merzifon-Samsun Railway Project<br>• Ulukisla-Yenice Railway Project<br>• Ispartakule-Çerkezköy Railway Project |
| 2003-2012 | DLH Construction General Directorate | Head of Railway Survey and Project Department | Projects worked on:<br>• Halkalı - Kapıkule Railway Project<br>• Ankara - Istanbul Railway Project<br>• Ankara - Sivas Railway Project<br>• Sivas - Kars Railway Project<br>• Kars - Tbilisi Railway Project<br>• Ankara - Izmir Railway Project<br>• Adapazari - Bartın Railway Project<br>• Toprakkale - Habur Railway Project<br>• Erzincan - Muş Railway Project<br>• Erzincan- Diyarbakır- Mardin Railway Project<br>• Bandirma - Izmir Railway Project<br>• Tekirdag - Muratli Railway Project<br>• Eskisehir - Antalya Railway Project<br>• Dinar - Aydin Railway Project<br>• Konya - Mersin Railway Project<br>• Kars - Igdir - Nakhchivan Railway Project<br>• Kirikkale - Samsun Railway Project<br>• Antalya - Konya - Aksaray - Nevsehir - Kayseri Railway Project<br>• Kırşehir - Yerköy Railway Project<br>• Kırşehir - Aksaray - Ulukisla Railway Project |

| | | | |
|---|---|---|---|
| | | | • Aydin - Gulluk Port Railway Connection Project<br>• Erzincan - Trabzon - Tirebolu Railway Project<br>• Yerkoy - Kayseri Railway Project<br>• Bandirma - Bursa - Osmaneli Railway Project<br>• Diyarbakır - Urfa Railway Project<br>• Samsun - Fatsa Railway Project<br>• Ardahan - Çıldır - Railway Project<br>• Sinan-Batman Project<br>• Tokat-Turhal Railway Project<br>• Urfa-Mursitpinar Railway Project<br>• Sabiha Gökçen and Atatürk Airport Rail System Project<br>• Cukurova Airport Rail System Project<br>• Kemalpasa Logistics Centre Project<br>• Esenboga Airport Rail System Project<br>• Ankara Subways Project and Supervision Consultancy<br>• Kemalpaşa-Torbalı- Alsancak Port Connection |
| 2003-2003 | DLH Construction General Directorate | Head of Railway Construction Department | Projects worked on:<br>• Ankara - Istanbul High Speed Railway Construction<br>• Tecer - Kangal Railway Construction<br>• Menemen - Aliaga Railway Construction<br>• Izmit City Crossing Railway Construction<br>• Khanli - Bostankaya Railway Construction |
| 2000-2003 | DLH Construction General Directorate | Head of Rail Public Transport Department | Tasks Performed:<br>• Marmaray Project tender and control<br>• Ankara, Istanbul, Izmir, Konya, Kayseri, Kayseri, Samsun, Adana, Mersin rail system feasibility, survey project control and approval. |
| 1993-2000 | DLH Construction General Directorate | Implementation Branch Manager | Projects worked on:<br>• Ankara - Istanbul Speed Railway Construction<br>• Karakaya Railway Bridge (2400m)<br>• Tecer - Kangal Railway Construction<br>• Menemen - Aliaga Railway Construction<br>• Izmit City Crossing Railway Construction<br>• Hanli - Bostankaya Railway Construction |
| 1983-1993 | DLH Construction General Directorate | Civil Engineer | Projects worked on:<br>• Ankara - Istanbul Speed Railway Construction<br>• Karakaya Railway Bridge (2400m)<br>• Tecer - Kangal Railway Construction<br>• Menemen - Aliaga Railway Construction<br>• Sincan-Yenikent Railway Construction |

# Particular Conditions

## Part C- Fraud and Corruption

***(Text in this Particular Conditions - Part C shall not be modified)***

1. **Purpose**

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. **Requirements**

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders, consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v. "obstructive practice" is:

(a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening,

harass or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner34; (ii) to be a nominated 35 sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;

e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders, consultants, contractors,

[34] For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

[35] A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect 36 all accounts, records and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank.

[36] Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

# Particular Conditions

## Part D- Environmental and Social (ES)

## Metrics for Progress Reports

The Contractor shall include in each Progress Report, and in any separate Environmental and Social (E&S) report required under the Contract, the E&S metrics necessary to demonstrate compliance with the Contract, the Environmental and Social Commitment Plan (ESCP), the finalized ESIA/ESMP/SEP, RP&LRP and the C-ESMP, and all applicable sub-management plans.

The Contractor shall carry out all E&S monitoring and reporting in full compliance with the E&S Requirements defined in the "Environmental and Social Requirements" section under "Part-2 Employer's Requirements". The Contractor shall submit monthly E&S monitoring reports to the Employer within fifteen (15) days following the end of each reporting period, unless otherwise instructed by the Employer.

The detailed format, indicators, and level of disaggregation of the reports shall be agreed between the Employer and the Contractor following Contract award and prior to submission of the first report, and may be updated during implementation as required by the Employer or the World Bank.

The Employer may require additional indicators, reporting formats, or supporting data during implementation, and the Contractor shall comply with such requirements.

# Particular Conditions

# Part E- Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment Performance Declaration for Subcontractors

*[The following table shall be filled in by each subcontractor proposed by the Contractor, that was not named in the Contract]*

Subcontractor's Name: *[insert full name]*
Date: *[insert day, month, year]*

Contract reference *[insert contract reference]*
Page *[insert page number]* of *[insert total number]* pages

| **SEA and/or SH Declaration** |
|---|
| We:<br>☐ (a) have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.<br>☐ (b) are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations. |

☐ (c) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations. An arbitral award on the disqualification case has been made in our favor.

☐ (d) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations for a period of two years. We have subsequently demonstrated that we have adequate capacity and commitment to comply with SEA /SH obligations.

☐ (e) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations for a period of two years. We have attached specific evidence demonstrating that we have adequate capacity and commitment to comply with SEA and SH obligations.

**[*If (c) above is applicable, attach evidence of an arbitral award reversing the findings on the issues underlying the disqualification.]***

***[If (d) or (e) above are applicable, provide the following information:]***

Period of disqualification: From: _____ To: _____

If previously provided on another Bank financed works contract, details of evidence that demonstrated adequate capacity and commitment to comply with SEA/SH obligations (**as per (d) above)**

Name of Employer: _____

Name of Project: _____

Contract description: _____

Brief summary of evidence provided: _____

_____

Contact Information: (Tel, email, name of contact person): _____

_____

As an alternative to the evidence under (d), other evidence demonstrating adequate capacity and commitment to comply with SEA/SH obligations (**as per (e) above) )** *[attach details as appropriate]*.

_____

_____

Name of the Subcontractor_____

Name of the person duly authorized to sign on behalf of the Subcontractor_____

Title of the person signing on behalf of the Subcontractor_____

Signature of the person named above_____

Date signed _____ day of _____, _____

Countersignature of authorized representative of the Contractor:

Signature: _____

Date signed _____ day of _____, _____

# SECTION X - CONTRACT FORMS

## Table of Forms

**Notification of Intention to Award** ..... **461**
**Letter of Acceptance** ..... **467**
**Contract Agreement** ..... **468**
**Performance Security – Demand Guarantee** ..... **470**
**Environmental and Social (ES ) Performance Security** ..... **472**
**Advance Payment Security** ..... **474**
**Retention Money Security** ..... **476**

# Notification of Intention to Award

***[This Notification of Intention to Award shall be sent to each Proposer that submitted a Proposal, unless the Proposer has previously received notice of exclusion from the process at an interim stage of the procurement process.]***

***[Send this Notification to the Proposer's Authorized Representative named in the Proposer Information Form]***

For the attention of Proposer's Authorized Representative
Name: *[insert Authorized Representative's name]*
Address: *[insert Authorized Representative's Address]*
Telephone/Fax numbers: *[insert Authorized Representative's telephone/fax numbers]*
Email Address: *[insert Authorized Representative's email address]*

***[IMPORTANT: insert the date that this Notification is transmitted to all participating Proposers. The Notification must be sent to all Proposers simultaneously. This means on the same date and as close to the same time as possible.]***

**DATE OF TRANSMISSION**: This Notification is sent by: *[email/fax]* on *[date]* (local time)

# Notification of Intention to Award

**Employer:** *[insert the name of the Employer]*
**Project:** *[insert name of project]*
**Contract title:** *[insert the name of the contract]*
**Country:** *[insert country where RFP is issued]*
**Loan No. /Credit No. / Grant No.:** *[insert reference number for loan/credit/grant]*
**RFP No:** *[insert RFP reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period you may:

a) request a debriefing in relation to the evaluation of your Proposal, and/or

b) submit a Procurement-related Complaint in relation to the decision to award the contract.

**1. The successful Proposer**

| | |
|---|---|
| **Name:** | *[insert name of successful Proposer]* |
| **Address:** | *[insert address of the successful Proposer]* |
| **Contract price:** | *[insert contract price of the successful Proposer]* |
| **Total combined score:** | *[insert the total combined score of the successful Proposer]* |

**2. Other Proposers *[INSTRUCTIONS: insert names of all Proposers that submitted a Proposal, Proposal prices as read out and evaluated, technical and combined scores.]***

| Name of Proposer | Technical Score | Proposal price | Evaluated Proposal Cost (if applicable) | Combined Score |
|---|---|---|---|---|
| *[insert name]* | *[insert Technical score]* | *[insert Proposal price]* | *[insert evaluated cost]* | *[insert combined score]* |
| *[insert name]* | *[insert Technical score]* | *[insert Proposal price]* | *[insert evaluated cost]* | *[insert combined score]* |
| *[insert name]* | *[insert Technical score]* | *[insert Proposal price]* | *[insert evaluated cost]* | *[insert combined score]* |
| *[insert name]* | *[insert Technical score]* | *[insert Proposal price]* | *[insert evaluated cost]* | *[insert combined score]* |
| *[insert name]* | *[insert Technical score]* | *[insert Proposal price]* | *[insert evaluated cost]* | *[insert combined score]* |

**3. Reason/s why your Proposal was unsuccessful *[Delete if the combined score already reveals the reason]***

***[INSTRUCTIONS: State the reason/s why <u>this</u> Proposer's Proposal was unsuccessful. Do NOT include: (a) a point by point comparison with another Proposer's Proposal or (b) information that is marked confidential by the Proposer in its Proposal.]***

**4. How to request a debriefing**

**DEADLINE: The deadline to request a debriefing expires at midnight on *[insert date]* (local time).**

You may request a debriefing in relation to the results of the evaluation of your Proposal. If you decide to request a debriefing your written request must be made within three (3) Business Days of receipt of this Notification of Intention to Award.

Provide the contract name, reference number, name of the Proposer, contact details; and address the request for debriefing as follows:

**Attention**: *[insert full name of person, if applicable]*

**Title/position**: *[insert title/position]*

**Agency**: *[insert name of Employer]*

**Email address**: *[insert email address]*

**Fax number**: *[insert fax number]* ***delete if not used***

If your request for a debriefing is received within the 3 Business Days deadline, we will provide the debriefing within five (5) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (5) Business Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Business Days from the date of publication of the Contract Award Notice.

**5. How to make a complaint**

**DEADLINE: The deadline for submitting a Procurement-related Complaint challenging the decision to award the contract expires on midnight, [*insert date*] (local time).**

Provide the contract name, reference number, name of the Proposer, contact details; and address the Procurement-related Complaint as follows:

**Attention**: *[insert full name of person, if applicable]*

**Title/position**: *[insert title/position]*

**Agency**: *[insert name of Employer]*

**Email address**: *[insert email address]*

**Fax number**: *[insert fax number]* ***delete if not used***

At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

Further information:

For more information, see the "Procurement Regulations for IPF Borrowers (Procurement Regulations) (Annex III)." You should read these provisions before preparing and submitting your complaint. In addition, the World Bank's Guidance "How to make a Procurement-related Complaint" provides a useful explanation of the process, as well as a sample letter of complaint.

In summary, there are four essential requirements:

1. You must be an 'interested party'. In this case, that means a Proposer who submitted a Proposal in this procurement, and is the recipient of a Notification of Intention to Award.
2. The complaint can only challenge the decision to award the contract.
3. You must submit the complaint within the deadline stated above.
4. You must include, in your complaint, all of the information required by the Procurement Regulations (as described in Annex III).

**6. Standstill Period**

**DEADLINE: The Standstill Period is due to end at midnight on *[insert date]* (local time).**

The Standstill Period lasts ten (10) Business Days after the date of transmission of this Notification of Intention to Award.

The Standstill Period may be extended. This may happen where we are unable to provide a debriefing within the five (5) Business Day deadline. If this happens we will notify you of the extension.

If you have any questions regarding this Notification, please do not hesitate to contact us.

On behalf of the Employer:

**Signature:** _____

**Name:** _____

**Title/position:** _____

**Telephone:** _____

**Email:** _____

# Beneficial Ownership Disclosure Form

*INSTRUCTIONS TO PROPOSERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM*

*This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful Proposer[1]. In case of joint venture, the Proposer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.*

*For the purposes of this Form, a Beneficial Owner of a Proposer is any natural person who ultimately owns or controls the Proposer by meeting one or more of the following conditions:*

- *directly or indirectly holding 25% or more of the shares*
- *directly or indirectly holding 25% or more of the voting rights*

*directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Proposer directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Proposer*

**RFP No.:** [*insert number of RFP process*]
**Request for Proposal No**.: [*insert identification*]

To: **[*insert complete name of Employer*]**

In response to your request in the Letter of Acceptance *dated [insert date of letter of Acceptance]* to furnish additional information on beneficial ownership: *[select one option as applicable and delete the options that are not applicable]*

(i) we hereby provide the following beneficial ownership information.

**Details of beneficial ownership**

| Identity of Beneficial Owner | Directly or indirectly holding 25% or more of the shares (Yes / No) | Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No) | Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Proposer (Yes / No) |
|---|---|---|---|
| *[include full name (last, middle, first), nationality, country of residence]* | | | |

***OR***

(ii) *We declare that there is no Beneficial Owner meeting one or more of the following conditions:*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Proposer

**OR**

*(iii) We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Proposer shall provide explanation on why it is unable to identify any Beneficial Owner]*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Proposer]"

**Name of the Proposer**: *[*insert complete name of the Proposer*]_____

**Name of the person duly authorized to sign the Proposal on behalf of the Proposer**: **[*insert complete name of person duly authorized to sign the Proposal*]_____

**Title of the person signing the Proposal**: [*insert complete title of the person signing the Proposal*]_____

**Signature of the person named above**: [*insert signature of person whose name and capacity are shown above*]_____

**Date signed** [*insert date of signing*] **day of** [*insert month*], [*insert year*]_____

[*] In the case of the Proposal submitted by a Joint Venture specify the name of the Joint Venture as Proposer. In the event that the Proposer is a joint venture, each reference to "Proposer" in the Beneficial Ownership Disclosure Form (including this Introduction thereto) shall be read to refer to the joint venture member.

[**] Person signing the Proposal shall have the power of attorney given by the Proposer. The power of attorney shall be attached with the Proposal Schedules.

# Letter of Acceptance

*[letterhead paper of the Employer]*

*[date]*

To: *[name and address of the Contractor]*

This is to notify you that your Proposal dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Proposers, is hereby accepted by our Agency.

You are requested to furnish (i) the Performance Security and an Environmental and Social Performance Security ***[Delete ES Performance Security if it is not required under the contract]*** within 28 days in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms and the ES Performance Security Form, ***[Delete reference to the ES Performance Security Form if it is not required under the contract]*** and (ii) the additional information on beneficial ownership in accordance with **ITP 53.1** within eight (8) Business days using the Beneficial Ownership Disclosure Form, included in Section X, Contract Forms, of the RFP document.

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Agency: _____

**Attachment:** Contract Agreement

# Contract Agreement

THIS AGREEMENT made the _____ day of _____, _____, between _____of _____ (hereinafter "the Employer"), of the one part, and _____ of _____ (hereinafter "the Contractor"), of the other part:

WHEREAS the Employer desires that the Works known as _____ _____ should be executed by the Contractor, and has accepted a Proposal by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
   (a) the Letter of Acceptance
   (b) the Letter of Proposal
   (c) the addenda Nos _____(if any)
   (d) the Particular Conditions
   (e) the General Conditions
   (f) the Employer's Requirements
   (g) the completed Schedules, and
   (h) the Contractor's Proposal and any other documents forming part of the Contract including, but not limited to:
      i. Code of Conduct for Contractor's Personnel (ES) and
      ii. Local Labour Method Statement.

3. In consideration of the payments to be made by the Employer to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of _____ on the day, month and year specified above.

Signed by _____ (for the Employer)

Signed by _____ (for the Contractor)

# Performance Security – Demand Guarantee

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:** _____*[insert name and Address of Employer]*

**Date:** _____*[Insert date of issue]*

**PERFORMANCE GUARANTEE No.:** _____*[Insert guarantee reference number]*

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2… [2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

---

1 *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency (ies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

2 *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

*[signature(s)]*

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

# Environmental and Social (ES ) Performance Security

## ES Demand Guarantee

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:** _____*[insert name and Address of Employer]*

**Date:** _____*[Insert date of issue]*

**ES PERFORMANCE GUARANTEE No.:** _____*[Insert guarantee reference number]*

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its Environmental and/or Social (ES ) obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2… [2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

---

[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency (cies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

*[signature(s)]*

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

# Advance Payment Security

## Demand Guarantee

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:** _____*[insert name and Address of Employer]*

**Date:** _____*[Insert date of issue]*

**ADVANCE PAYMENT GUARANTEE No.:**_____*[Insert guarantee reference number]*

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ *dated* _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ ( ) is to be made against an advance payment guarantee.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ ( ) [1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:

(a) has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or

(b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Applicant on its account number _____ at _____.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the ___

[1] *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency (ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.*

day of _____, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

*[signature(s)]*

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

[2] *Insert the expected expiration date of the Time for Completion. The Employer should note that in the event of an extension of the time for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

# Retention Money Security

## Demand Guarantee

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:** _____*[insert name and Address of Employer]*

**Date:** _____*[Insert date of issue]*

**RETENTION MONEY GUARANTEE No.:** _____*[Insert guarantee reference number]*

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ *[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. _____ *[insert reference number of the contract]* dated _____ with the Beneficiary, for the execution of _____ *[insert name of contract and brief description of Works]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, payment of *[insert the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money],* the difference between half of the Retention Money and the amount guaranteed under the Performance Security and, if required, the ES Performance Security*]* is to be made against a Retention Money guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ *[insert amount in figures]* (_) *[amount in words]*[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as

---

[1] *The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security and denominated either in the currency(ies) of the second half of the Retention Money as specified in the Contract, or in a freely convertible currency acceptable to the Beneficiary.*

referred to above has been credited to the Applicant on its account number _____ at _____ *[insert name and address of Applicant's bank]*.

This guarantee shall expire no later than the …. Day of ……, 2… [2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

*[signature(s)]*

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

[2] *Insert the same expiry date as set forth in the Performance Security, representing the date twenty-eight days after the completion date described in GC Clause 11.9. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*