

**Draft Terms of Reference (ToR) for
General Consultancy Services for Haryana
Orbital Rail Corridor (HORC) from Palwal
to Sonipat in the State of Haryana**

Table of Contents

1.	Background	3
1.1.	The Haryana Orbital Rail Corridor (HORC) Project	3
1.2.	Feasibility study and Detailed Project Report (DPR)	3
2.	Objectives of the Assignment and Role of GC	3
3.	Scope of the Services, Tasks and Expected Deliverables	6
3.1	Critical study of DPR.....	7
3.2	Project management and monitoring	8
3.3	Preparation of procurement strategy and bid advisory services	10
3.4	Proof-checking of designs, drawings, technical proposals and specifications	16
3.5	Supervision of Civil infrastructure works as well as implementation activities.....	23
3.6	Testing, trials, statutory approvals and commissioning.....	28
3.7	Knowledge transfer, Capacity building of Employer	29
3.8	Support during Operation & Maintenance phase and Defect Liability Period	30
3.9	Ensure compliance of Environmental and Social safeguards	31
3.10	Distribution of roles and responsibilities between the team members of GC.....	33
3.11	Preparation and implementation of Quality Assurance Plan (QAP).....	36
3.12	Review, update and implementation of RAP.....	38
3.13	Review, update and implementation of SHE Plan.....	38
3.14	Development and integration of IT based platform with IT system of Employer	39
3.15	Preparation of reports	41
4.	Scope Exclusions	46
5.	Obligations of the General Consultant.....	46
6.	Staffing Requirement.....	47
7.	Activities and contract period	47
8.	Services and facilities to be provided by Employer to GC	49
9.	Code of Conduct.....	49
	ANNEXURE 1- Project Overview	52
	ANNEXURE 2 – Deployment of GC Personnel	56
	ANNEXURE 3 - GC Personnel Qualification and Experience	61
	ANNEXURE 4 - Office facilities for the Engineer (GC)	121

1. Background

1.1. The Haryana Orbital Rail Corridor (HORC) Project

The Haryana Rail Infrastructure Development Corporation Ltd (HRIDC) was incorporated in August 2017 as a State Joint Venture Company with **51% participation** of the State of Haryana and **49% participation** of the Ministry of Railways (MOR) in the State of Haryana. HRIDC is mandated to undertake design, develop, plan, construct, operate, implement and manage rail projects in the state of Haryana. One of the projects being developed by HRIDC is Haryana Orbital Rail Corridor (HORC). It is a new electrified Double Broad-gauge (BG) rail line of around 121.742 km from Palwal to Harsana Kalan, via Sohna, Manesar, Kharkhoda bypassing the Delhi state (including all connectivities – ~144 km). The project is proposed to have connections with the existing Indian Railway lines at Palwal, Patli, Sultanpur, Asaudha. The Project is also proposed to have connection with the Dedicated Freight Corridor at Prithla.

The construction of HORC shall be taken up in two sections simultaneously; the Priority section comprising of around 8 Km (including connectivity from existing Patli station to Manesar station on HORC) and the balance section comprising of remaining section of HORC. This GC assignment is for the complete HORC project including its connectivities.

A detailed overview of the Project is provided in **Annexure-1** of this Section-7: Terms of Reference.

1.2. Feasibility study and Detailed Project Report (DPR)

The feasibility study was undertaken by HRIDC in February 2019 and Ministry of Railways gave in-principle approval to implement the HORC project in March 2019. Following which, HRIDC undertook preparation of DPR, which was approved by Council of Ministers, Govt. of Haryana in July 2019. Also, the Expanded Board for Railways (EBR) approved the project in October 2019. The process for sanction of Government of India (GoI) and availing of soft loan from Asian Infrastructure Investment Bank (AIIB) (“Funding Agency”) has been initiated and is under active consideration of GoI and AIIB.

2. Objectives of the Assignment and Role of GC

2.1. The objective of this Request for Proposal is to select a General Consultant (“GC”) to provide expert consultancy services in relation to General Consultancy for successful planning, basic & detailed designs, preparation of specifications, preparation of bid documents and tender assistance, checking designs, project management and supervision including construction supervision, safety, quality, interface management,

ensuring full social and environmental safeguards compliance in accordance with Government (National and State) legal framework and AIIB's ESP requirements and testing & commissioning of the Haryana Orbital Rail Corridor (HORC) (the "Project"). The planning shall include O&M phase as well.

2.2. The GC shall be a proactive partner of Employer in successful implementation of the Project. The GC is expected to have adequate experience of delivering such type of infrastructure, knowledge of trends in industry and working with stakeholders including handling multiple government stakeholders, project affected people and communities, civil society organisations/non-government organisations, and workers, among others. The key objectives of the GC shall include but not be limited to the following:

- A)** To ensure effective stakeholder engagement/consultation and management to achieve their alignment to overall objectives of the project and Employer.
- B)** To review critically and supplement or add on to the work done so far / work under progress necessary for the successful implementation and efficient operation of the project.
- C)** To align global best practices and technology solutions keeping in view durability, efficiency, issues of obsolescence, cost economy, etc.
- D)** To plan and assist in implementation of the project while ensuring durability, maintainability and reliability of service, seamless interoperability among various IR/ DFC networks and smooth multi-modal integration between HORC and other modes of transport.
- E)** To adopt appropriate technology solutions, planning approaches, procurement strategies, to help minimize project life cycle cost, cost and time overruns, disputes and issues related to safety and quality.
- F)** To plan and implement / manage procurement / bid process, system integration and interface management
- G)** To support the Employer in implementation of design, construction, testing & commissioning and its services would include, without limitation within the scope of work, review and approval of design prepared by the Contractors including drawing and specifications, supervision of the Contractors' performance, progress monitoring, technical and quality control, ensuring work site safety, evaluation of construction works, certification for completion of various works by the different EPC Contractors covered under the HORC Project for taking over of the works by the Employer and necessary monitoring
- H)** To review General Design & Drawings for the approval of the Employer and review and approval of detailed designs/ drawings submitted by Contractors (of various Packages)

- I)** To plan, design and implement systems along with seamless systems integration to achieve optimal system and ensure safety. This shall include but not be limited to preparation for testing, trials and obtaining all statutory approvals including safety certifications.
- J)** To effectively carry out the supervision of civil works covering earthworks, bridge works, tunnel works, road works, permanent way/ track works, station building works, etc.
- K)** To conduct regular inspection/ testing prior to acceptance of material for incorporation in various civil works
- L)** GC shall also make itself aware of provisions of respective Contract Agreements of various Contract Packages and shall ensure within its role of Engineer adherence/ compliance to these provisions at all times during currency of the Contract.
- M)** Assist Employer in contract management and claims & dispute management
- N)** To ensure implementation, monitoring, and compliance with environmental and social safeguards plans and measures from planning to construction
- O)** To ensure Safety, Health and Environment compliance in construction, operation and maintenance in addition to work site safety, including precautionary measures to avoid COVID 19.
- P)** To ensure contractors and subcontractors are compliant with India's labor laws and regulations and labor standards
- Q)** To assist Employer in incorporating avenues for non-fare box revenue enhancement in design, planning, procurement and implementation of various project components (like stations, depots, additional areas identified in the DPR and/or components as informed by Employer). These non-fare box revenue sources may include transit-oriented development, air space development, advertising, retail, parking, etc.
- R)** To adopt most appropriate Indian and / or international practices, codes, specifications and standards in consultation with Employer.
- S)** To adopt environment – friendly practices across the project life cycle from planning to operation
- T)** To ensure smooth and effective transfer of knowledge to Employer including capacity building of institution and its personnel
- U)** To ensure regular inspection and defect rectification during the operation & maintenance and defect liability period
- V)** To assist the Employer in key meetings and arbitration proceedings that may happen during the course of the Consultancy Services

- W) To assist the Employer in the planning and conduct of meaningful consultations with the project affected people, communities, and other stakeholders during the project preparation, implementation and monitoring
- X) To assist the Employer in the implementation and monitoring of land acquisition process and Resettlement Plan, Livelihood Restoration Plan, Stakeholder Engagement Plan, Gender Measures, other social plans/ measures in an effective and timely manner. The Consultant will ensure following for the Project affected People and local communities, where works will be executed:
 - i). To assist the Employer in establishing a suitable grievance redressal mechanism (GRM) to receive and facilitate resolution of the concerns of people affected by the Project's environmental and social impacts and inform Project-affected people and other stakeholders of its availability
 - ii). To assist the Employer in implementing the GRM and ensure adequate and systematic documentation

3. Scope of the Services, Tasks (Components) and Expected Deliverables

The services of the GC (incl. its expert personnel), may be broadly covered under the following heads and described subsequently:

- A) Critical study of DPR (incl. amendments thereon) of Haryana Orbital Rail Corridor and value addition over & above provisions of these studies
- B) Project management and monitoring
- C) Preparation of procurement strategy and bid process management for selection of Contractors, Suppliers, Detailed Design Consultants, etc.
- D) Activities related to Contract Management
 - a) Proof-checking of designs, drawings, technical proposals and specifications along with ensuring system integration and interface management
 - b) Supervision of Civil infrastructure works as well as implementation activities for Systems including but not limited to electrical & mechanical, solar systems, power supply, traction, signalling, and telecommunication systems.
- E) Testing, trials, statutory approvals and commissioning
- F) Knowledge transfer, capacity building of Employer
- G) Support during Operation & Maintenance phase and Defect Liability Period
- H) Ensure compliance to Social and Environmental safeguards measures and to national laws and regulations and AIIB Environmental and Social Policy.
- I) Other important and enabling services to be provided by GC
 - a) Distribution of roles and responsibilities between the team members of GC
 - b) Preparation and implementation of Quality Assurance Plan

- c) Preparation and implementation of an interim PAP consultation plan/Stakeholder Engagement plan during the project preparation to ensure meaningful consultations using appropriate approach during the COVID19 situation in the preparation of RAP, Livelihood Restoration plan, and other safeguards instruments, aligned with the requirements of AIIB ESP.
- d) Review, update, implementation, monitoring and report preparation of RAP, Livelihood Restoration Plan, Stakeholder Engagement Plan, and other social plans
- e) Review, update and implementation of Safety, Health and Environment (SHE) Plan
- f) Development and integration of IT based platform with IT system of Employer
- g) Preparation of reports to track the progress of all project related works

3.1 Critical study of DPR (incl. amendments thereon) of Haryana Orbital Rail Corridor and value addition over & above provisions of these studies

3.1.1 GC shall collect the Detailed Project Report (DPR), any amendments to DPR, work done so far or under progress and any other relevant material/reports/etc.

3.1.2 The GC shall study in detail the project holistically as well as each of the project components with respect to the following aspects but not be limited to:

- a) Design and Optimization of all the three project components i.e. Civil Engineering (Earthwork, Bridges, Track works, Tunnel works), Electrical & OHE (SCADA, OCS, TPS) and S&T, Design criteria and System Integration.
- b) Standards and Specifications
- c) Technology and Best Practices
- d) Layouts / Drawings
- e) Reports
- f) Constructability
- g) Interoperability among various IR/ DFC networks
- h) Interface Management and Project timelines
- i) Cost Estimate and Controls
- j) Financial and physical phasing
- k) Operation and Maintenance planning, etc.
- l) Overall project integrity, durability and adequacy

3.1.3 The GC shall produce a comprehensive report on assessment of each sub-component, gap analysis, risk identification and areas for improvement in consultation with Employer.

3.1.4 The study shall contain assessment of various sub-components presented in the DPR and its related amendments and reports. Apart from the sub-components mentioned in

these documents, other relevant material related to connectivity with IR/ DFC networks, Multi Modal Integration with other modes of transport, etc. need to be critically reviewed.

- 3.1.5 The GC shall undertake domestic and international benchmarking based on standards, world-wide best practices, market scenarios and gap analysis for different sub-components and technology options. Basis this analysis and gap assessment conducted by GC, the GC shall suggest value additions in different project components, sub-systems and suggest appropriate technology options.
- 3.1.6 Based on this option analysis, the GC shall provide recommendations for specific areas of improvement by way of supplementing or modifying existing details with additional/new details. This shall include a detailed comparative evaluation and value for money analysis over the project life cycle, wherever applicable.
- 3.1.7 The GC shall also suggest new ideas/concepts beneficial for the overall success of the project based on their national and international experience as well as thorough due diligence.
- 3.1.8 The GC shall identify necessary approvals and clearances from relevant / statutory authorities for the supplemented / modified parameters or deviations (if any) and assist Employer in obtaining the same. The assistance expected from the GC shall include but not be limited to preparation of draft document with justification, presentations, etc.
- 3.1.9 The GC shall identify key risks, propose risk mitigation measures and prepare and/or update detailed risk management plan, including disaster management plan, in consultation with Employer.
- 3.1.10 GC shall provide conceptual scheme for stations, property development and other buildings and master layout for depots which shall be undertaken by Employer.
- 3.1.11 The GC shall prepare an updated implementation plan including financial and physical phasing for approval of Employer. The GC shall be responsible for monitoring project progress in accordance with the approved plan (including amendments/revisions thereon, if any) and highlight any nonconformity or deviations.

3.2 Project management and monitoring

- 3.2.1 The GC shall proactively assist Employer in overall project management and monitoring. The aspects, where proactive support is envisaged, include but not be limited to the items detailed below.

A. Approvals

- 3.2.2 The GC shall assist Employer in obtaining all necessary approvals and clearances from statutory and relevant authorities and from the AIIB team, throughout the project

implementation. These shall include but not be limited to Bank approval of agreed safeguards instruments, environment clearances, forest clearances, wildlife clearances, safety, EIG etc.

- a) The GC shall prepare a detailed roadmap for obtaining various clearances required for implementation of the project. This shall include list of clearances, approvals, permits, compliances related to the development and implementation of the project. The road map needs to contain documentation requirement, dependencies and timelines that need to be adhered to for timely approvals.
- b) The GC shall ensure that the process for obtaining the approvals and schedule is well defined including approvals from appropriate regulatory agencies. The GC shall monitor the progress in these matters and report to Employer proactively.
- c) In regard to co-ordination of activities to be carried out by the local authorities and other Government departments, the role of GC would be to frame and put up to Employer, detailed proposals for being discussed and resolved by Employer, in various co- ordination groups set up by Central / State Government(s). The GC shall provide to Employer all technical data, sketches, drawings, and also attend the co-ordination meetings along with Employer for obtaining approval of proposals from these co-ordination groups.
- d) The GC shall provide inputs on comments and opinions sought by the departments/ financing/ regulatory agencies under the State / Central Government with respect to the project being developed / implemented.

3.2.3 The GC shall assist Employer, as required, in contract administration, disputes and claims management.

- a) The GC shall recommend and assist Employer in implementing appropriate strategy / mechanism to deal with contract terminations and renegotiations (if any), contract exit strategies and fall back options.
- b) GC shall prepare contractual correspondences to contractors, manufacturers and suppliers etc. in consultation with Employer.
- c) The GC shall recommend and prepare appropriate dispute resolution mechanism in consultation with Employer. The GC shall assist Employer in review and drafting of responses, participating in meetings with Employer with respect to disputes and claims till the duration of Contract Period.

B. Project Schedule Management

3.2.4 The GC shall prepare a detailed integrated schedule/ project timeline for the entire project including procurement stages which shall include but not be limited to the order in which Employer should carry out each stage of design, procurement, manufacture, delivery to site, construction, erection, testing and commissioning. All

major events and activities in these stages and their sequence should be clearly described.

- 3.2.5 The GC shall use Primavera P6 software or any other suitable software as approved by Employer for scheduling.
- 3.2.6 The GC shall review the detailed schedule submitted by the contractors and highlight the inconsistencies in line with the overall integrated schedule and recommend corrective measures.
- 3.2.7 The GC shall regularly undertake planned vs actual analysis with respect to agreed implementation schedule and create early warning system to identify any red flags and need for any proactive actions to be taken by Employer. The GC shall update overall project schedule in line with the discussion with Employer.
- 3.2.8 The GC shall undertake analysis of critical path and near critical path for the project on a regular basis and suggest corrective measures in order to ensure timely completion of the project in line with the overall integrated schedule.

C. Cost controls including Budgeting and Accounting

- 3.2.9 The GC shall create baseline program cost, budget and cash flow schedule and shall track it as per actual.
- 3.2.10 The GC shall assess the financial position and project long-term financial statements.
- 3.2.11 The GC will assist Employer in preparation and submission of disbursement claims to Funding Institution.

D. Change Management System

- 3.2.12 The GC shall develop and monitor scope and change management procedures. This shall include but not be limited to:
 - a) Establish the procedures for any changes to the Project criteria to create uniformity of application across all existing contracts of the Project.
 - b) Identify and monitor the matters through a change log affecting the project budget, provide timely updates that reflect funds received, funds obligation through contract awards and approved change orders, and projected obligations.

3.3 Preparation of procurement strategy and bid advisory services for selection of Contractors, Suppliers, Detailed Design Consultants (DDCs) and other related services

A. Preparation of procurement strategy

- 3.3.1 The GC shall suggest the governance structure to be followed for approval at different stages of bid process management for various types of bids. The same shall be established in consultation with Employer. The stages shall contain:-
 - a) Procurement strategy
 - b) Tender documents

- c) Pre-bid replies and addendum/corrigendum
- d) Final evaluation report - technical and financial (as required)

3.3.2 The GC shall prepare and recommend a detailed procurement strategy for the consideration of Employer. This shall include but not be limited to:

- a) Compliance with guidelines / policies / regulations of government(s) and Funding Agency
- b) Structuring of bid packages for selection of contractors / suppliers / DDCs / other consultants – number of bid packages, bundling/unbundling of various project components, cost analysis and estimates, scope of work and boundary conditions, etc.
- c) Type of contracts (lump-sum, item rate, etc.)
- d) Mode of procurement (Design-Build, Build Only, Design-Build-Maintain, etc.)
- e) Type of selection process (lowest bid criteria, quality-cum-cost based selection, etc.)
- f) Interface requirement and planning among various project components, bid packages and contracts
- g) Market analysis to ascertain sufficient number of bidders for each bid package
- h) Impact of selected option(s) on estimated project economics (incl. cost and time)
- i) Risk assessment and mitigations measures
- j) Procurement schedule

B. Preparation of bids

3.3.3 The GC shall adopt the approved procurement strategies and prepare bid documentation. These shall include but not be limited to preparation of tender documents, draft contract agreements, etc. Tender documents shall be prepared in line with the guidelines/policies of the government(s) as well as the project Funding Agency.

3.3.4 The tender and contract documents for the agreed tender packages may include:

- a) Invitation for Bid (IFB)
- b) Instructions to Bidders (ITB)
- c) Pre-qualification documents (PQD)
- d) Pre-qualification criteria (PQC)
- e) Tender evaluation criteria
- f) General Conditions of Contract (GCC)
- g) Special Conditions of Contract (SCC)

- h) Bid/Contract Forms
- i) Employer's requirement which includes
 - i. Outline design and drawings including design basis report
 - ii. System wide specification (General Specification)
 - iii. Detailed Terms of Reference / Scope of Work, including any milestones/ team members and their qualifications/ key performance indicators (KPIs) and/or service level agreements (SLAs)
 - iv. Particular Specifications (PS) (wherever required)
 - v. Tender Drawings (wherever required)
- j) Safety, Health and Environment (SHE) manual
- k) Environmental and Social Management Plan (ESMP)
- l) Pricing document/Bill of Quantities (BOQ) (wherever required).
- m) Quality Assurance Plan
- n) Form of Contract Agreement,
- o) Any other requisite documents as applicable.

GC shall prepare all the above documents. For item rate tender packages particular specification, tender drawings and bill of quantities shall be prepared by detailed design consultant and shall be proof checked by GC.

- 3.3.5 Some of the documents listed in 3.4.4 above might have already been prepared by Employer/ DDCs. However, the GC shall review/ proof-check the same and suggest any modifications in line with the project objectives.
- 3.3.6 The GC shall prepare Employer's requirement and pricing document for EPC tender packages covering all aspects relevant to the implementation of the corridor and in the degree of detail as required in tender documents for such projects so as to enable the bidders to make competitive bids.
- 3.3.7 The GC shall recommend and finalize outline design criteria, specifications, standards and codes of practice to be followed, as approved by Employer and obtain approval if required by Employer for necessary corrections and modifications.
 - a) The recommended criteria, specifications, etc. will become part of tender design, on acceptance by Employer.
 - b) The recommended specifications and design criteria shall cover aspects related to the methods of construction, design of temporary works, and disposal plan for excavated materials, as also the external environment under which the work would be required to be executed. The specifications will also prescribe the tests and acceptance standards for various components of works.

- c) It is to be ensured that the designs and specifications will meet the project requirement at reasonable cost, without imposing any limitations in regard to competitive bidding. Employer intends to go green and adopt international best practices in relation to harnessing renewable (solar, etc.) energy, rain water harvesting, other initiatives (as required under law / statutory obligations) in line with government policies/ programmes and initiatives, etc. at stations, depots, viaducts, and other HORC project components.
- 3.3.8 The Tender design and drawings shall be prepared in the manner that is consistent with the final design of the project components and interfacing requirements. The tender designs and drawings shall be sufficiently detailed so as responsive and competitive bids can be obtained. In case of Architectural tender drawings, it shall also cover all aspects of station design such as spatial modelling, overcrowding controls, information signages, multimodal exchanges, green building features, traffic movement, parking facilities, entry/exit and evacuation facilities, public amenities etc.
- 3.3.9 GC shall assist in finalization of Station Planning and Design Criteria (such as level of service, station sizing and evacuation plan, fire and accessibility norms etc.) for stations and property development areas.
- 3.3.10 Based on the accepted tender designs, design criteria, specifications, standards and codes of practice, the GC shall prepare a suitable Pricing Documents/BOQ and estimated cost for the various EPC tender packages. For item rate tenders same shall be prepared by the DDC which shall be proof checked by the GC. GC shall prepare Standard Schedule of Rates with Rate Analysis for above items including stations, depots etc. and take approval from Employer. The Schedule of Rates shall also be accompanied by the Standard Specifications and the Method of Measurement for these items.

C. Bid Process Management

- 3.3.11 The GC shall support the Employer in conducting entire bid process management till signing of contract for selection of Contractors/ Suppliers/ DDCs / Others. This shall include but not be limited to:
- a) Market testing and empanelment (as applicable),
 - b) Invitation for bids,
 - c) Pre-bid conference and response to pre-bid queries,
 - d) Technical / bid related presentation and documents,
 - e) Bid evaluation and recommendation to Employer,
 - f) Re-Invitation of bids if so required,
 - g) Preparation of draft contract agreements.

- h) Ensure that the Environmental and Social Management Plan/s are included appropriately in the contractual obligations of the selected bidder.

3.3.12 The activities to be rendered by the GC in this regard shall include, but not be limited to the following:

- a) The GC shall invite the bids on behalf of Employer through the designated procurement portal (access to be provided by Employer). GC shall follow the rules and regulations of the designated procurement portal in their bid process management.
- b) Pre-qualification of contractors / suppliers / DDCs / Others for bidding. GC shall undertake all necessary works regarding receipt and evaluation of contractor's documents and recommend to Employer the pre-qualified list for their acceptance wherever prequalification is considered necessary with prior approval of Employer.
- c) GC shall organize pre-bid conferences / meetings, prepare responses to the queries of the bidders and issue any associated addendum/corrigendum to tender document(s), make presentation(s). The GC shall send or receive necessary correspondences/ clarifications, upload replies/corrigendum on procurement portal (access to be provided by Employer), etc with prior approval of Employer.
- d) GC shall make appropriate arrangements for receiving bids and opening of the same at the scheduled dates in presence of nominated representative of Employer.
- e) GC shall evaluate the tender proposals and furnish recommendations for the selection of the contractors etc. for all bid packages including ranking of the bidders. For this, GC shall prepare a confidential evaluation report with detailed analysis and justification and prepare presentation materials as per the requirement of Employer as well as Funding Agency. This report/presentation should contain a concise set of basis and justification for ranking of the bids. GC shall be required to make a presentation pertaining to the recommendations to a committee and/or a working group that may be set up by Employer.
- f) Prepare Clarifications before and after bid submission.
- g) Assist in negotiations with Bidders
 - i. Prepare information and data to be used in the negotiations/clarifications.
 - ii. Co-ordinate and assist Employer in negotiations/clarifications with the selected bidder(s) and record minutes of all meetings.
- h) Any other relevant details, as deemed necessary.
- i) The GC shall assist Employer in finalization of Contract agreements.

- 3.3.13 The GC shall recommend and assist Employer in implementing appropriate strategy / mechanism to deal with bid disqualifications, negotiation, terminations and fall back options.
- 3.3.14 The GC shall ensure proactive monitoring and management of approved procurement schedule, highlight triggers for ongoing/next set of activities to be initiated on rolling basis. The GC shall highlight any non-conformity or deviations from the approved procurement schedule and need for amendments, if any.
- 3.3.15 Employer shall form appropriate bid evaluation committee(s) and/or working group(s) which shall oversee the bid process and give necessary approvals at various stages of bid process.
- 3.3.16 The list of indicative packages is as given below. The list is tentative and shall be proposed by GC in the procurement strategy for approval of Employer. There shall not be any financial implication on any increase/decrease in the list below:

S. No	Package Number	Description of Package*
1	Package 1	Priority section: Earthwork, Bridges, Station Buildings and other miscellaneous Civil Engineering Works in Connection with laying of New BG Double Railway Line of HORC project from Km 42.4 to Km 52.6 and its connectivity to Patli Railway Stations of IR Network
2	Package 2	Construction of tunnel from 22.38 Km to 27.10 km of HORC Project.
3	Package 3	Construction of Rail Flyovers (RFOs) over existing IR network and Major Road Under Bridges (RUBS) over National Highway Crossings in connection with HORC project.
4	Package 4	Earthwork, Bridges, Station Buildings and other miscellaneous Civil Engineering Works in Connection with laying of New BG Double Railway Line of HORC Project from Km 52.6 to Km 83.00 and its connectivities to Patli and Sultanpur Railway Station of IR Network .
5	Package 5	Earthwork, Bridges, Station Buildings and other miscellaneous Civil Engineering Works in Connection with laying of New BG Double Railway Line of HORC Project from Km 83.0 to Km 122.00 and its connectivity to Asaudha Railway station of IR Network..
6	Package 6	Earthwork, Bridges, Station Buildings and other miscellaneous Civil Engineering Works in Connection with laying of New BG Double Railway Line of HORC Project from Km (-) 2.8 to Km 42.6 (Excluding Tunnel Section i.e from Km 22.38 to Km 27.10)

7	Package 7	Track Works from Km (-) 2.8 to Km 122.6 and its connectivities to IR network of HORC Project including procurement of rails, PSC sleepers, Switches and Crossings, all rail and sleeper fittings, supply of ballast, linking of track and including annual maintenance of track for a period of 1 year.
8	Package 8	EPC tender from chainage -2.8 km to 122.6 km of HORC i.e. entire HORC and including all stations and connectivities for electrification works and including annual maintenance of OHE works, for a period of 1 year. The package shall exclude electrification works for yard remodelling (including connectivities) works of existing IR stations.
9	Package 9	EPC tender from chainage -2.8 km to 122.6 km of HORC i.e. entire HORC and including all stations and connectivities for Signalling & Telecommunication works and including annual maintenance of signalling and telecom for a period of 1 year. The package shall exclude S&T works for yard remodelling (including connectivities) works of existing IR stations.
10	Package 10	BOQ Electrification works for yard remodelling (including connectivities) of exiting IR stations
11	Package 11	BOQ S&T works for yard remodelling (including connectivities) of exiting IR stations

**In addition to the above packages, GC shall assist Employer in preparing bid documents in connection with HORC project such as connectivity work to existing IR yard and for engaging DDC for design and other activities etc.*

Activities related to Contract Management:

3.4 Proof-checking of designs, drawings, technical proposals and specifications along with ensuring system integration and interface management

A. Proof checking

3.4.1 The GC shall proof check all the technical submittals including but not be limited to Design Documents, Drawings, Technical Proposals, Vendor Proposals and Specifications submitted by either Detailed Design Consultant/Contractors during the Procurement Stage and Construction Stage in a timely manner in line with the duration mentioned in the respective contracts. Certain items may be excluded from the scope of the GC (refer Clause 4 for Scope Exclusions)

3.4.2 Proof checking shall include but not be limited to the following:

- a) The GC shall review the design detail, plan, method statements, drawing, specifications and information etc. provided by the Contractor/Consultant to ensure that they in aspects such as proper format, sufficient details, required

extent, size and scale and within such timelines as may be required to ensure effective execution of Works and/or as otherwise required by the Employer.

- b) The GC shall review the design detail, plan, surveys, drawing, specifications and information etc. provided by the Contractor/Consultant to ensure that they are in consonance to the tender requirements, relevant enactments and regulations and have taken full account of the intended manufacturing and installation methods and comply with the implementing strategy of the HORC Project. The Architectural drawings shall also be reviewed from the perspective of level of service, station sizing, evacuation plan, multimodal integration, fire and accessibility norms etc. GC shall assist Employer in developing the aesthetic theme for the stations, depots, property development and other related areas including finishing scheme, schemes for artworks at those areas.
- c) The GC shall identify and provide proper interface coordination so as to assure timely completion of all works and commissioning of the various sections within optimum time schedule according to the approved implementation schedule. The GC shall conduct site inspections to monitor any inconsistencies in the System Integration at a reasonable frequency in consultation with Employer.
- d) The GC shall furnish their comments after review of the details to the concerned Contractor/Consultant/ designated engineer/ nominated person and insist for compliance.
- e) Upon compliance of the requirements of the comments, the proposal shall be furnished to Employer along with GC's final recommendations for review and approval by Employer.
- f) The GC shall review the 'As Built' drawings for each component of the works prepared by the contractors/suppliers/manufacturers and determine their acceptability under the terms of the relevant contracts.
- g) Any other relevant tasks

B. Interface management

- 3.4.3 The planning, designing, procurement, construction, testing and commissioning of the HORC project involves various activities related with civil engineering, track works, traction & power, signaling, telecommunication, depot & workshop, electrical and mechanical systems, and operation & maintenance, Common Data Environment (CDE) etc., which will be handled separately by different consultants/contractors. The sub-groups managing these activities shall communicate and work coherently in the context of individual requirements of all the sub-groups and of the project in totality.

- 3.4.4 GC shall work closely with all sub-groups and act as bridge between them to ensure there is no lapse in information flow, including resolution of interface/system integration issues.
- 3.4.5 GC shall prepare interface management plan - program interface management, technical interface management, & operational interface management, etc., in consultation with the respective contractors and Employer. The interface management plan thus prepared shall ensure:
- i. Identifying/defining all the potential interfaces among various components of the project.
 - ii. Outlining the process for coordination and management of parties involved across various interfaces.
 - iii. Preparation of an interfacing platform where all the requests can be registered.
 - iv. Defining the process of registering and resolution of an interface request.
 - v. Establishing monitoring process for the interfacing of the registered request.
 - vi. Identify information to be exchanged, define the precise division of responsibilities amongst the stakeholders and identification of integrated test to be performed at each stage
 - vii. Develop and incorporate necessary provisions in respective tender documents
 - viii. Monitor the work program of each contractor so that all key/access dates are met by the individual contractors and highlight any program risk requiring Employer attention.
- 3.4.6 GC shall conduct regular site visits/meetings along with relevant stakeholders to review and monitor any interface related issues as per approved interface management plan in consultation with Employer.

C. System Integration

- 3.4.7 The GC shall be responsible for coordination and act as a facilitator to ensure assimilation of requirements of all phases i.e. planning, designing, procurement, construction, testing and commissioning among various consultants / contractors / suppliers / other stakeholders and thereby prepare, manage and control, the overall system integration processes which will shall lead to successful implementation and operations of Haryana Orbital Rail Corridor.
- 3.4.8 GC shall take all reasonable steps to ensure that the works are coordinated and integrated with the design, manufacture, installation, execution and testing of such other works and shall in particular (but without limitation):
- i. Participate in integrated testing and commissioning and demonstrate to the satisfaction of Employer that the system has been designed and constructed in a compatible manner

- ii. Demonstrate to the satisfaction of Employer the system readiness for commercial operations and interoperability.
- iii. Comply with any direction which Employer may give for the integration of the design of any part of the project

D. Summary of activities to be undertaken during design phase

3.4.9 As described above, during the Design Phase, GC shall be required to review the following items:

- a) Preliminary Design Submission which includes –
 - i) Design submission Programme
 - ii) Complete Geo technical investigation plan including bore holes, machines, methodology etc. complete.
 - iii) The quality assurance plan for design
 - iv) Preliminary construction methodology
 - v) Basis of Design, factors influencing the Design and a review of the outline design criteria;
 - vi) The identification of design codes and standards;
 - vii) Review of technical specifications proposed for the work
 - viii) CAD procedures;
 - ix) Design Manual;
 - x) Proposed software;
 - xi) The preliminary off site (manufacturer's premises) testing recommendations;
 - xii) The preliminary testing and commissioning report
 - xiii) The preliminary maintenance analysis and report
 - xiv) The preliminary equipment proposals, layouts and details. The utility diversion plan;
 - xv) An alignment review;
 - xvi) Proposed site surveys and other field surveys like geological, hydrological, seismic, etc.;
 - xvii) Topographic survey of the site.
 - xviii) Preliminary depot layouts;
 - xix) Reference pillars.
 - xx) Standard details of preliminary alignment like plan and cross section including bench marking, the track alignment, the shape of the earthworks,

track layout at Junction Stations, crossing Stations, Maintenance Depots, the necessary highway/road/track works, identify all bridge structures (ROB, RUB, Culvert, RFO etc.), tunnel structures, location of all utilities whether IR, public or private, temporary works retained level crossings and associated staff shelters, layout of HRIDC station compounds and associated accesses and outline links to utilities.

- xxi) Preliminary geo-technical report including collection of site data, sub-soil investigation required for the design;
- xxii) Preliminary design of formation including drainage system – longitudinal and cross drains, diversions of nalla (open drain) etc.;
- xxiii) Preliminary design of retaining wall wherever required.
- xxiv) Reports detailing the identification of borrow areas for formation and their soil properties.
- xxv) Planning for blanket material, prepared sub-grade along with source of material.
- xxvi) Existing bridge data like chainage, opening size, bed level, HFL, scour level and protection works if any.
- xxvii) Preliminary seismic report;
- xxviii) Data for catchment area and hydrological report and geotechnical investigation report for each bridge
- xxix) Preliminary recommendation of opening sizes of HORC based upon cross verification between existing opening sizes, discharge calculations and other site related parameters.
- xxx) Preliminary RUB, Rail Fly Over and modification proposals to ROB, tunnels;
- xxxi) Preliminary GADs
- xxxii) Preliminary track structures including rail, sleeper, fitting, SEJ, points and crossings, derailing switches, track on bridge approaches, track on bridge proper, level crossings, etc.,
- xxxiii) Preliminary cross section in cutting and embankment showing ballast profile on curve and straight,
- xxxiv) Preliminary track layouts including yard plans,
- xxxv) Connectivity details to existing IR yards/ DFC and modifications there to,
- xxxvi) Preliminary signage proposals,
- xxxvii) Preliminary architectural layouts of buildings and main materials,
- xxxviii) Preliminary construction methodology for buildings

- xxxix) S&T Preliminary design document as per system Works Contract
 - xl) Preliminary design of traction power supply system, overhead equipment, SCADA and E&M Works as per System Works Contract.
 - xli) All relevant ES documents (assessment and plans)

b) Definitive Design Submission which includes:

- i) Dimension of all Major features, elements and members
- ii) Schedules of all materials
- iii) Potential forces and movements due to all possible loadings and actions on the structures, and their accommodation;
- iv) All stress calculations due to secondary loading;
- v) Standard details;
- vi) Proposed Good for Construction drawings pertaining to each component for consideration of the Engineer;
- vii) Electrical and mechanical services and equipment and their interaction with the structures;
- viii) Erection methods;
- ix) Utilities to be diverted / supported,
- x) Report on interfacing contracts;
- xi) Provisions and proposals for construction interfacing with the Interfacing Contractors;
- xii) Maintenance report;
- xiii) Updated Environmental management plan including corrective measures;
- xiv) Demolition methodologies.
- xv) Final location survey, geometry (vertical and horizontal) and setting-out of all main elements and features of alignment including horizontal and vertical curves, transitions, grade compensations etc. complete with corresponding calculations and layouts;
- xvi) Standard details on updated alignment
- xvii) Final hydrology report with field data and samples for general catchment;
- xviii) Final geo-technology report with field data and samples;
- xix) Final seismic report;
- xx) Earthwork design including sub-soil suitability/availability, slopes stability analysis, adequacy of blanketing material used and prepared subgrade etc. complete with calculations;

- xxi) Cross section of the proposed embankment/cutting at specified intervals (at 20m in straight and 10m on curve) indicating thickness of different layers with specification details;
 - xxii) Borrow pit locations with lead diagrams of cut/ fill / borrow;
 - xxiii) Detailed design of Tunnel and ancillary works
 - xxiv) Schedules of all equipment;
 - xxv) Testing proposals;
 - xxvi) Updated bridge list for the section.
 - xxvii) Definitive GAD which includes the final drawing and design to be adopted for construction.
 - xxviii) The locations and nature of all steel structures along with relevant joints and connections and details thereof;
 - xxix) Final hydrology report with field data and samples for each bridge;
 - xxx) Schedules of all equipment;
 - xxxii) Demolition methodologies.
 - xxxiii) Survey of the existing track layout with recommendations where connections between HORC and Indian Railway track are to be done;
 - xxxiv) Track design including sleepers for all locations, fittings, SEJs, LWR, etc. - design and corresponding calculations;
 - xxxv) Points and crossings, derailing switches with detailing,
 - xxxvi) Methodology of Track construction in detail;
 - xxxvii) Signage requirements and plan;
 - xxxviii) Schedules of all machines and equipment;
 - xxxix) Testing and commissioning proposals;
 - xl) Architectural requirements;
 - xli) Existing building rehabilitation recommendations;
 - xlii) Potential forces and movements due to all possible loadings and actions on the structures, and their accommodation;
 - xliii) S&T design document as per S&T works contract.
 - xliv) Definitive design of traction power supply system, overhead equipment, SCADA, and E&M works as per System works contract
- c) Technical Specification Document
- d) Design Manual

- e) Interfacing Contract Report Document
- f) Survey report
- g) Utilities Report
- h) Temporary Work Design Report
- i) Hydrology Report
- j) S&T Management Plans as per S&T works Contract
- k) Management plans pertaining to electrical works as per System works Contract

3.5 Supervision of Civil infrastructure works as well as implementation activities for Systems including but not limited to electrical & mechanical, solar systems, power supply, traction, signalling, and telecommunication systems.

3.5.1 Role and functions of GC during Construction Phase

Construction Phase shall commence immediately upon the issue by the GC, a notice in respect of the relevant Drawings Submission and shall terminate when the section corresponding to a particular work contract is taken over by the Employer. However, construction shall not commence until the original copies of the appropriate Definitive Design and Drawings have been endorsed by contractor as “Good for Construction” and GC issued Notice that he has no objection to these drawings. The construction Phase includes completion and submission of the Final Design and the preparation and submission of the As Built Drawings and other records as specified in works contracts and clearance of the same by GC after review.

- A. GC shall assist/advise Employer timely regarding handing over the site to concerned contractor which they will hand over in stages, in the advance actions required to be taken for the handing over of the site and to achieve the milestones for completion of the construction packages.
- B. The duties of the GC during the Construction Period will be that of ‘Engineer’ and including and encompassing, superintendence of the Contractor's performance of the works on a day to day basis, particularly with regard to quality of materials/construction, execution of work as per approved methodology and work plan, work site safety, removal/relocation of chartered/ unchartered utilities, project monitoring as per approved work plan, compliance to occupational health plan, compliance to environment mitigation plan, interface management with other contractors including works contractors, inspection and acceptance of work, report submission, record keeping, providing facilities for inspection for Employer/other consultants/inspecting agencies, testing and commissioning including integrated testing of work as per provision of contract.

- C. For the Construction Phase, works contractor shall prepare a comprehensive programme for acceptance tests and shall demonstrate to the GC how this programme meets provisions under various contracts, in all respects but not limited to, for the specified technical and performance requirements. The GC shall conduct regular field checks and tests to ensure that work has been carried out as per agreed specifications and standards. GC's Supervisors shall carry out required field checks for Contractor's Requests for Inspection (RFI) pertaining to various items of works and clear the same. The RFI procedures to be observed by the Contractor, particularly with regard to Inspection and testing shall be as agreed by GC and works contractors.
- D. The GC shall clearly specify in its bid proposal, the system of test checks for these RFIs at appropriate levels proposed to be adopted by it with the minimum test check being 100%, 20%, and 10% of the RFIs at the level of Supervisor, ARE, RE respectively. The agreed percentages of test checks shall be made for every individual item of work in every interim payment to the Contractor at the level of Supervisor/ ARE. Test check at the level of RE shall be made in such a way so as to cover all the representative items of work in a contract package every quarter. GC shall certify conducting of these Test Checks as agreed for every interim payment recommended by it. HRIDC may separately undertake Quality Audit Inspections, at periodic intervals or as required, through their own personnel or through a third party. The GC shall do the repeat tests or measurements, if directed by the GM/HRIDC or JGM/HRIDC, in the presence of GM or JGM or of any of his representative.
- E. In the event that the Contractor is required to carry out any remedial works for removal or rectification of any defects or deficiencies, the GC shall require the Contractor to prove through appropriate tests that such remedial works have brought the works into conformity with the Contract. The GC shall take all necessary measures to achieve closure of non-conformances through the Contractor's actions in the shortest possible time, but in no case later than Period of Completion. The GC shall maintain complete records of all remedial works from their identification to rectification.
- F. In the event that the Contractor fails to achieve any of the Project Milestones, the GC shall undertake a review of the progress of construction and identify the causes of delays, if any. If the GC determines that completion of the works is not feasible within the time specified in the Contract, it shall require the Contractor to indicate, within 15 (fifteen) days of its notice to the Contractor, the steps

proposed to be taken to expedite progress, and the period within which the Project Completion shall be achieved. This notice to the Contractor shall be copied to HRIDC. Upon receipt of the Contractor's response, the GC shall review the same and send its final determination to HRIDC and the Contractor forth with.

- G. If at any time during the Construction Period, the GC determines that the Contractor has not made adequate arrangements for ensuring safety of workers and users and other legal and statutory obligations mentioned in the contract in the zone of construction or that any work is being carried out in a manner that threatens the safety of the workers and the users or hampers the progress of the work, it shall notify the Contractor forthwith that the whole or part of the Works shall be suspended for ensuring safety thereof. This notice of suspension for reasons of safety shall be promptly communicated to HRIDC. The suspension shall be lifted by the GC, only upon its determination that the conditions which caused the suspension have been removed or remedied sufficiently, in the GC 's professional judgment and following its subsequent inspection of the works.
- H. If the Works are suspended for reasons not attributable to the Contractor, the GC shall make a determination of these reasons and if necessary, allow for the extension of time set forth in the Project Completion Schedule and compensation to which the Contractor may be entitled as per contract provisions. The GC shall notify HRIDC and the Contractor of its determination prior to the onset of the suspension period; and when the reasons for the suspension have subsided and the Works can be resumed.
- I. The GC shall carry out, or cause to be carried out, all tests specified in the related schedules of the Contract and issue a Completion Certificate/ Provisional Certificate (at least 60 (sixty) days prior to the likely completion of the Rail System), as the case may be as per provision of contract. These functions shall be carried out and communicated to HRIDC and the Contractor in conformance with the related provisions of the works contract.
- J. The GC shall make fair and reasonable assessments of the payment requests and associated documentation submitted by the Contractor and shall provide its determination, prior to such payments being made by HRIDC. In its determination, the GC may certify full or partial payment, depending on its assessment of the Contractor's payment request and documentation.
- K. The GC shall review the 'As Built' drawings for each component of the works prepared by the Contractors and determine their acceptability under the terms of

the Contracts. The GC shall communicate its determination to HRIDC and the Contractors.

- L. The GC shall ensure compliance with site specific ESMP submitted by the Contractors.
- M. The GC shall ensure compliance of SHE plan submitted by the Contractor.
- N. GC shall determine the disposition of any cost proposals submitted by the Contractor under the Works Contract and their reasonableness and provide its recommendations to Employer along with the required details for approval.
- O. GC shall determine the disposition of any time extensions requested by the Contractor under the Works Contract and their reasonableness and provide its recommendations to Employer along with the required details for approval.
- P. The GC shall issue the relevant certificates (excluding performance certificates) as may be required in the works contracts documents.
- Q. The GC shall be responsible to obtain all records of completion drawings and completion documents from the contractor and prepare completion estimates in accordance with provisions of Indian Railways Engineering Code. This shall be submitted within six months of issue of taking over certificate.
- R. The GC shall prepare an inventory of completed works and inventory of spares to be supplied by works contractors for use during maintenance.

3.5.2 GC shall supervise all implementation activities and shall undertake contract management for Systems which shall include but not be limited to:

- a) Electrical and mechanical system such as air conditioning, ventilation, fire-fighting & detection, sub-stations, earthing system, piping, pumps, auxiliary power distribution, SCADA system, access control system, generators, transformers, all components related to low voltage power distribution, illumination for the project and tunnel ventilation etc.
- b) Traction power and distribution system
- c) Signaling and telecommunication system

3.5.3 GC shall undertake testing of complete signalling installation as per the various provision in the codes, manuals and instructions and recording of complete testing data and submission same to Employer. The testing includes indoor testing like functional test, testing of panel with reference to approved locking table, square sheet,

break test of circuits. Outdoor testing includes testing of points for obstructions, track circuits voltages, signals, axle counter, block working etc. to ensure safe working. During testing consultant will liaison with concerned statutory authorities for any correction/modification, if required in the approved drawing to ensure safety in Train operation.

- 3.5.4 GC shall highlight any non-compliance with respect to scope, quality, EMP and SHE for the implementation activities of the systems to Employer as per the required guidelines/standards
- 3.5.5 GC shall certify any Extension of Time/variation /claims by the contractors and provide its recommendations to Employer along with the required details.
- 3.5.6 GC shall assist Employer in identification of key interface issues/requirements from the civil contractors to ensure timely completion of the project
- 3.5.7 The GC shall prepare and submit a regular report including significant events, if any, on the previous day for the systems mentioned in 3.6.2 above. The report shall be sent by e-mail or fax to Employer's head office and to the site office. This report will also include any event/happening which is likely to affect the progress, quality of work and safety.
- 3.5.8 GC shall maintain copies of all reference documents, specifications, and drawings including working/as-built/completion drawings, test data, details of variations and other correspondence in a systematic manner so as to ensure that all relevant personnel are equipped with the latest documents and all data is available as and when required by Employer.
- 3.5.9 GC shall exercise such authority, in his capacity as the 'Engineer' defined in the construction contract documents subject to the Consultant having no authority for:
- i. Amending the 'Contract for Works' awarded to the Contractor.
 - ii. Instructing a variation or Approving a proposal for Variation submitted by the Contractor
 - iii. Agreeing or determining an extension of time and/or additional cost for any reason.
 - iv. Issue of Performance Certificate.
 - v. Agreeing or determining a new rate/extra item
 - vi. Relieving the Contractor of his duties, responsibilities and obligations stated in their contract agreements.
 - vii. Exercising authority for items other than those provided in these Scope of Work and stipulated in the consultant's contract agreement.

3.5.10 Notwithstanding the obligations, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he 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 Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with provisions of construction contract.

3.6 Testing, trials, statutory approvals and commissioning

3.6.1 The GC shall do proof checking of all temporary works in case of civil contracts.

(Note: Temporary works include the safety works required to facilitate the construction of permanent structures such as temporary launching arrangements required for construction of permanent superstructure (i.e. PSC girders or Steel girders) of RFOs over the existing railway lines and RUBs over National Highway crossings.)

3.6.2 Inspection and Testing

- a) GC shall proof check testing and commissioning plans submitted by contractors/vendors etc.
- b) GC shall attend inspection/ testing along with Employer for various quality hold points.
- c) GC shall proof check results of inspection/testing and commissioning including routine/prototype tests and system tests so as to advise Employer on the final acceptance of the system.

3.6.3 Integrated Testing and Commissioning along with trial runs and statutory approvals

- a) The sections intended to be opened for traffic will required to be subjected to the requisite trial tests.
- b) The GC shall prepare integrated testing and commissioning/ trial scheme including schedule as per the statutory and system requirements to verify/ authenticate suitability and adequacy of the system.
- c) The GC shall enable Employer, giving all necessary assistance, to conduct the integrated tests/trials. Any shortfalls noticed during the tests / trials will be arranged to be rectified by the GC through the contractors / suppliers. In order that the deficiencies are limited to the minimum, the design and construction of the project should take due consideration of the requirements under the relevant laws for opening of HORC system with design speed of 160 kmph for the public carriage of passengers.
- d) The GC shall assist Employer in preparing and submitting all documents with all necessary details / information to be furnished to the CRS/other Statutory Authorities in connection with the section to be opened to traffic. All relevant

information as required to be furnished to the CRS/other Statutory Authorities in connection with the section to be opened to traffic shall be furnished by GC to Employer.

- e) The GC shall assist Employer in apprising CRS/other statutory authorities both at the design stage and construction stage to obtain all necessary intermediate approvals as well as certification from the CRS/other Statutory Authorities for successful opening of the section(s) to traffic for commercial operations.
- f) The completed section of the corridor shall be opened for revenue services only after the sections are certified fit for passenger traffic by CRS/other Statutory Authorities.

3.7 Knowledge transfer, Capacity building of Employer

3.7.1 Preparation of Manuals, Standard Operating Procedures (SOPs), Schedule of Dimensions, Policies and Specifications

- a) Instruction Manuals, and Specifications, submitted by Consultants/Contractors shall be reviewed by GC for approval of Employer. Manuals and Specifications not covered in the scope of Contractor/Consultant shall be prepared by GC and submitted to Employer 180 (one hundred and eighty) days prior to Scheduled Completion Date of the Project.
- b) These shall include but not be limited to the following:
 - i. Track Manuals and Formats
 - ii. Civil Works Manual
 - iii. Signaling Manual
 - iv. Telecommunication Manual
 - v. Commercial Manual
 - vi. Operating Manual
 - vii. Disaster Management Manual
 - viii. Overall Maintenance Manual
 - ix. Accident and Safety Manual
 - x. Traction & Power Supply manual
 - xi. Environmental Management Manual
 - xii. Depot & Maintenance Manual
 - xiii. Quality Assurance Manual
 - xiv. Manual for Lifts and Escalators
 - xv. Climate Control
 - xvi. E & M Manual
 - xvii. OCC Manual
 - xviii. Erection Manual
 - xix. Asset Management
 - xx. Safety, Health and Environment Manual

- xxi. Standard Operating Procedures (SOPs)
 - xxii. Schedule of Dimensions
 - xxiii. Human Resource Policy
 - xxiv. Code of Conduct
 - xxv. GRM Policy
- c) These documents shall also form the basis of the training of Operations and Maintenance personnel for the Haryana Orbital Rail Corridor.

3.7.2 **Training of Personnel of Employer**

- a) The GC shall plan and design the training modules for personnel of the Employer for operation, maintenance and repair of various equipment, machines and plants supplied by various suppliers and system as a whole.
- b) GC shall arrange any trainings which are required for capacity building and are not covered under the scope of suppliers/contractors in consultation with Employer. The cost of such trainings shall be borne by Employer.

The GC shall assist Employer in capacity building in identified areas, especially in resource mobilization, manpower planning, project management, contract administration, claims & dispute management, technology know-how, institutional capacity building and ES requirements by the GOI and AIIB.

- 3.7.3 The GC shall assist Employer in manpower planning and mobilization during construction, operation and maintenance phase. These shall include but not be limited to prepare job description, qualifications, competencies, etc.
- 3.7.4 Also, the GC shall handover all relevant documents, conduct knowledge transfer in relation to the scope, and related areas necessary for the success of operation and maintenance phase of the project.
- 3.7.5 GC shall assist Employer during commercial operations by providing necessary experts in the initial phase (i.e. 12 months from the date of commissioning).

3.8 **Support during Operation & Maintenance phase and Defect Liability Period**

- 3.8.1 GC should provide necessary support during operation & maintenance phase (i.e. one year after commissioning) as per the requirement of the Employer
- 3.8.2 Function of GC during the defect liability period (only for the currency period of GC contract)
- a) The GC shall inspect the works at appropriate intervals during the Defect Liability Period.
 - b) The GC shall coordinate, review, monitor and ensure that the EPC Contractors shall replace/remedy the defects occurring under normal usages of works by the

Employer, except for normal wear and tear under such usage during the defect liability period.

3.9 Ensure compliance of Environmental and Social safeguards

3.9.1 The GC will pay full attention and be responsible for compliance of all environmental and social safeguard aspects in accordance with all applicable Government laws and policies, and AIIB requirements. It will also support for effective gender mainstreaming in the project. Activities to be undertaken for social safeguard compliance includes, but not limited to, the following:

- a) Help Employer prepare and implement an interim PAP consultation plan/Stakeholder Engagement plan with appropriate mix of engagement activities /approaches during the project preparation to ensure meaningful consultations appropriate during the COVID-19 situation in the preparation of RAP, Livelihood Restoration plan, and other safeguards instruments, aligned with the requirements of AIIB ESP.
- b) Planning, Implementation, Monitoring, Reporting on Social and Environmental Safeguards requirements including assessments, plans, and measures
- c) Assist Employer in overseeing the preparation of Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP), Resettlement Plan (and livelihood restoration plan), Stakeholder Engagement Plan, and other plans by coordinating with ESIA consultant agency (to be engaged by Employer) as per national and state legal framework and AIIB's ESP,
- d) Review draft and final reports submitted by the ESIA consultant and provide detailed comments.
- e) Assist Employer in integration of ESIA/ESMP findings in engineering designs and tender and bid documents wherever feasible to minimize adverse impacts
- f) Establish system for computerized data base related to the land acquisition and resettlement impacts.
- g) Ensure implementation of the resettlement activities in accordance with the RP, including conduct of meaningful consultations with PAPs
- h) Assist Employer in timely announcement of project cut-off dates in the project area
- i) Monitor implementation of Resettlement Plan
- j) Develop formats for collecting and compilation of data and information on the progress on social safeguard aspects (both physical and financial)
- k) Undertake site visits, participate in consultations with project affected persons and help design appropriate engagement activities with relevant stakeholders during the COVID-19 situation to ensure conduct of meaningful consultations

- l) Liaise with concerned District Administration and other line agencies and facilitate requisite help to RP preparation agency
- m) Assist Competent Authorities in land acquisition process as part of Employer, and ensure alignment with the AIIB ESP ESS2 requirements and help prepare the quarterly monitoring report to be submitted to the Lender
- n) Prepare monthly report of RP
- o) Develop indicators for monitoring social safeguard aspects of the project
- p) Assist Employer in preparation of internal monitoring report by establishing a system for social safeguard monitoring of the project
- q) Prepare and submit to Employer monthly social safeguards compliance report including deviation, if any
- r) Inform Employer of the anticipated resettlement requirements of the project from time to time
- s) Suggest measures to Employer to avoid delays in RP implementation, and also pro -actively participate in resolving issues that arise during implementation
- t) Assist Employer in establishing grievance resolution mechanism for ensuring timely resolution of grievances related to compensation and rehabilitation and resettlement or public grievances and complaints either from affected parties or from general public or any other stakeholder
- u) Coordinate grievance redress committee meetings
- v) Establish a computerized system for compilation and analysis of grievances, complaints, and ensure follow up on all grievances and include in monthly reports,
- w) Assist Employer in preparation of monitoring report for submission to AIIB
- x) Assist Employer in all matters related to social safeguards during AIIB mission
- y) Update the Resettlement Plan (RP) as per final impacts, as required
- z) Co-ordinate and provide support to external monitor or monitoring agency (if any appointed) for preparation of quarterly reports confirming to AIIB requirements,
- aa) Organize public consultation with the affected persons and local community in local language and record the proceedings and submit to Employer for perusal and necessary instruction, if any
- bb) Assisting Employer in dealing with RTI compliance, audit, media reports etc.
- cc) Ensure compliance to all labor laws such as prohibition of child labour, HIV/AIDS, gender issues, labour camps in view of pandemic like COVID-19, conduct training or orientation programme on labour management
- dd) Provide advise to employer on gender measures to enhance project design (including but not limited to passenger access and safety of women travelers and workers during operations, gender-sensitive facilities), promote opportunities for women (employment) and the welfare of women, children, elderly and people

with disabilities as well as on potential project gender risks, such as the occurrence of gender-based violence during construction.

- ee) Carry out any remaining land acquisition and RP tasks during the implementation of the project.
- ff) Any other duties as may be assigned for efficient execution of the social safeguards' compliance.

Other important and enabling services to be provided by GC:

3.10 Distribution of roles and responsibilities between the team members of GC

3.10.1 GC shall monitor all contract works in progress and identify any schedule or coordination conflicts, recommend measures to settle or mitigate problems and implement the recommended measures with the approval of Employer. During construction stage of the Project, the GC shall carry out overall construction supervision of all Infrastructure works.

The GC shall consist of Core Management Team (CMT) and Field Management Teams (FMTs), as required. Separate FMTs will be deployed for the respective jurisdictions of Contract Packages. The role of CMT and FMTs will be to accomplish the following Tasks during the overall period of Consultancy:

a) Tasks of CMT (Gurugram Office Team)

- i. To advise and assist Employer in the preparation of procedural system with incorporating the various procedures required for the funding institutions like AIIB
- ii. To coordinate with MD/HRIDC Chandigarh office and HRIDC Gurugram office for overall implementation of the Project
- iii. To coordinate with respective, headquarter (i.e. Northern Railways) and divisions of Zonal Railways (i.e. Delhi Division) and HRIDC Gurugram/ Site Offices for implementation of the Project under jurisdiction
- iv. To monitor overall project cost relating to master implementation program and assess the financial position and project long-term financial statement
- v. To monitor overall construction schedule and evaluate progress of overall construction work and recommend the countermeasure for recovering the progress, when it is necessary, to Employer
- vi. To carry out critical study of DPR of Haryana Orbital Rail Corridor and value addition over & above provisions of these studies
- vii. To actively manage the works related to preparation of procurement strategy and bid process management for selection of Contractors, Suppliers, Detailed Design Consultants, etc.

- viii. Help Employer prepare and implement an interim PAP consultation plan/Stakeholder Engagement plan with appropriate mix of engagement activities /approaches during the project preparation to ensure meaningful consultations appropriate during the COVID19 situation in the preparation of RAP, Livelihood Restoration plan, and other safeguards instruments, aligned with the requirements of AIIB ESP.
- ix. To review and update the safeguards documents and plan such as ESIA, ESMP, RAP, Livelihood Restoration Plan, SEP, and other relevant plans
- x. Provide advise to employer on gender measures to enhance project design (including but not limited to passenger access and safety of women travelers and workers during operations, gender-sensitive facilities), promote opportunities for women (employment) and the welfare of women, children, elderly and people with disabilities as well as on potential project gender risks, such as the occurrence of gender-based violence during construction.
- xi. To coordinate and liaise with statutory authorities to obtain clearances and permits for the project.
- xii. To prepare the quarterly safeguards monitoring reports for submission to the funding institutions like AIIB
- xiii. To examine and approve proposals on additional environmental mitigation measures and monitoring activities prepared by FMTs.
- xiv. To recommend acceptance or rejection of any part or parts of the completed works to Employer
- xv. To evaluate claims from the Contractors for extension of time, extra work payment, etc. and submit recommendation to Employer
- xvi. To review and recommend for approval of Employer all GADs and to review and issue Non-Objection Certificate to all detail design and drawings prepared by the Contractors.
- xvii. To negotiate with contractors and recommend to Employer on contract variations, if any
- xviii. To evaluate and recommend to Employer for approval of any changes in the plans or any effects on the changes of the contract amount and time schedule of the project
- xix. To prepare integrated periodical reports and submit to Employer
- xx. To participate in the final construction inspection and prepare check list for defect items
- xxi. To integrate as-built drawings prepared by the Contractors and submit to Employer
- xxii. To help establish a suitable grievance redress mechanism to receive and facilitate resolution of the concerns of people affected by the Project's environmental and social impacts and inform Project-affected people and other stakeholders of its availability.

- xxiii. To develop appropriate information materials and inform project affected people and communities about the GRM and where and how grievances can be submitted;
- xxiv. To help draft responses for consideration by the GRC; ensure that the complainants receive the feedback/response within the specified response time;
- xxv. To maintain a complete record/ data base of received grievances and the responses; and prepare monthly reports on GRM implementation.
- xxvi. To help implement the Stakeholder Plan
- xxvii. To ensure environmental and social staff at the field level are coordinated and adequate to effectively monitor implementation of the RP, Livelihood Restoration plan, SEP and other relevant plans.
- xxviii. To facilitate and assist in the implementation of the RP (and livelihood restoration plan) including, among others;
 - a. coordinating with local authorities and institutions for the implementation of the RP;
 - b. conducting detailed measurement surveys, verification of the RPs and project affected persons (PAPs), land and structures acquisition plans, income restoration and resettlement activities, and update RP whenever necessary;
 - c. developing resettlement information and holding community participation campaigns; holding regular meetings with the PAPs;
 - d. assist PAPs in obtaining their compensation/ resettlement entitlements in coordination with local authorities and other relevant institutions;
 - e. updating the database of PAPs and their entitlements for implementation and monitoring purposes;
 - f. monitoring the progress of RP implementation;
 - g. Familiarize the PMU and contractors with the contractor related social safeguards requirements;
 - h. Monitor the compliance regarding social safeguards requirements; identify any noncompliance issues and recommend corrective actions, when required; and
 - i. Prepare monthly reports on the implementation of the RPs and social safeguards compliance in a form acceptable to the Employer and Lender (AIIB).
 - j. Prepare the RAP Completion Report

b) Tasks of Field Management Team(s) at Project Site(s) along HORC (FMTs)

- i. To conduct routine field construction supervision works and regular site inspections
- ii. To confirm stake out furnished by the Contractors for HORC alignment in the field.

- iii. To obtain and test, as necessary and as required, material, works and equipment to maintain quality control.
- iv. To examine all field performance test for equipment of Signalling & Telecommunication System, train operation, electrification system and other equipments installed on HORC project and submit the report to the CMT with copy to Employer
- v. To inspect testing and monitoring of all material and facilities/ devices to ensure that they comply with the specifications and give immediate report to the Contractor, as required, with copy to Employer.
- vi. To carry out receiving inspections for machinery and equipment for maintenance of HORC project infrastructure.
- vii. To recommend to CMT as acceptance or rejection of any part or parts of the completed works
- viii. To verify measurement of quantities of works executed and checking of payment certificate to contractors
- ix. To check remaining quantities and forecast final amount of the contract periodically
- x. To train personnel of Employer to enhance their capacity in terms of environmental and social management
- xi. To supervise implementation of updated Environmental and Social Management Plan and Monitoring Plan undertaken by the Contractors and report to CMT and Employer.
- xii. To carry out initial review of claims from the Contractors and submit to Employer through CMT
- xiii. To prepare, if required, proposal on any changes in the plans or any effects on the changes of the contract amount and time schedule of the project and submit it to CMT.
- xiv. To participate in the final construction inspection and prepare check list for defect items
- xv. To prepare periodical progress reports and submit to CMT
- xvi. To compile and review as-built drawings prepared by the Contractors and submit to CMT
- xvii. To provide support to the Employer in implementation of RP, livelihood restoration plan, SEP, land acquisition process, payment of compensation and resettlement and rehabilitation assistances, review of reports, formation of Grievance redressal mechanism committees, redressal of grievances, etc.

3.11 Preparation and implementation of Quality Assurance Plan (QAP)

- 3.11.1 GC shall prepare a Quality Assurance Plan (QAP) for all project components containing but not be limited to:
- a) Brief of organization along with roles and responsibilities for Employer and the contractors / suppliers / manufactures / other agencies to meet the desired quality standards
 - b) List of codes / standards / best practices to meet the quality for various project components
 - c) Details of various tests to be carried out as per the codal provisions / standards for various project components
 - d) Frequency of tests to be undertaken by various agencies
 - e) Specification of various materials to be used during implementation of the project
 - f) List of approved vendors for purchase of various materials to be procured by the contractor
 - g) List of approved testing agencies/quality audit agencies for various defined tests to be followed by various contractors
 - h) Details/procedure to ensure quality adherence by the contractor which include the procedure of receiving the material at site and procedure for regular third party quality audits to be carried out by the contractors.
 - i) Quality hold points which will require inspection by Employer
 - j) Setting up of site laboratories for ensuring quality control measures on HORC project- minimum six (6) numbers. Details and specifications of the site laboratories to be setup in each EPC contracts shall be prepared by GC. All the tests in these laboratories shall be carried out in supervision of GC.
- 3.11.2 GC shall also review and monitor the individual Quality Assurance Plan submitted by the individual contractors / suppliers / others and shall highlight any inconsistency with the overall Quality Assurance Plan to Employer along with mitigation measures.
- 3.11.3 GC shall conduct site visits, submit non-conformance reports/quality report at reasonable frequency in consultation with Employer. However, GC shall highlight any major non-conformity within reasonably short time so that timely corrective measures can be undertaken. GC shall monitor all non-conformance reports generated till their closure. Employer may separately undertake Quality Audit Inspections, at periodic intervals or as required, through its own personnel or through a third party.
- 3.11.4 GC shall organize quality assurance/quality control training at reasonable frequency in consultation with Employer.
- 3.11.5 GC shall coordinate, review, monitor and report the defects occurring under normal usages, except for normal wear and tear under such usage during the defect liability period.

3.12 Review, update and implementation of RAP, Livelihood Restoration Plan, Stakeholder Engagement Plan, and other social plans, and ensure compliance with laws and regulations and AIIB's ESP. (See tasks in section 3.10)

3.13 Review, update and implementation of Safety, Health and Environment (SHE) Plan

3.13.1 GC shall review and update existing SHE Plan for overall project components containing but not be limited to:

- a) A statement of the SHE policy, organization and arrangements for SHE to be included during the tender stage
- b) Proposed organization to ensure safety requirements along with qualifications, roles and responsibilities to be implemented by various agencies
- c) A statement of policy, procedures for identifying and estimating hazards, and the measures for addressing the same;
- d) A list of SHE hazards anticipated for the project (including those related to COVID-19)
- e) Sufficient information to review the bidders proposals for achieving effective and efficient health and safety procedures;
- f) A description and frequency of the SHE training courses and emergency drills which shall be provided by the contractor/ supplier/ manufacturer/ others, with an outline of the syllabus to be followed;
- g) Details of the safety equipment which shall be provided by the Contractor, including personal protective equipment;
- h) A statement to ensure that Equipment used on the Project Site are maintained in a safe condition and are operated in a safe manner;
- i) A statement of the disciplinary procedures with respect to SHE related matters to be included in the tender document,
- j) A statement of the procedure for reporting and investigating accidents, dangerous occurrences or occupational illnesses

3.13.2 GC shall also review and monitor the individual SHE Plan submitted by the individual contractors / suppliers / others and shall highlight any inconsistency with the overall SHE Plan to Employer along with mitigation measures.

3.13.3 GC shall conduct site visits, submit non-conformance reports/safety report at reasonable frequency in consultation with Employer. However, GC shall highlight any major non-conformity within reasonably short time period so that timely

corrective measures can be undertaken. GC shall monitor all non-conformance reports generated till their closure.

- 3.13.4 GC shall organize SHE trainings at reasonable frequency in consultation with Employer.
- 3.13.5 GC shall assist Employer in setting up decent work environment for construction workers and shall assist in implementation of the action plan for labour protection, including HIV/AIDS prevention program, for construction workers
- 3.13.6 GC shall conduct regular visits to the contractor's plant and facilities including labour camps to ensure compliance as per relevant guidelines and conditions of the relevant contract. GC shall bring to the notice of Employer any non-compliance on this aspect.

3.14 Development and integration of IT based platform with IT system of Employer

- 3.14.1 Employer is in the process of implementing an Enterprise wide IT System/ e-file management system. The objective of the IT Plan is to automate core organizational business functions/ processes and develop a working environment that enables higher efficiency and effectiveness, not only in internal functions, but across the entire ecosystem of Employer, including Contractors. Various applications are envisaged for Employer and components of the proposed system shall broadly include:
 - a. Document Management System to ensure that all drawings/ critical documents related to the construction phase are well documented and archived.
 - b. Geographical Information System that will initially have details of every asset that is created. It will have the entire alignment geo-referenced. The monitoring of various Contracts is proposed to be done through Dashboards that will have a significant component of GIS.
 - c. An Enterprise Asset Management that has spatial co-ordinates of every asset
- 3.14.2 The proposed IT system shall be designed for facilitating preservation of important artifacts (plans, drawings, notes, documents, reports, etc.) in a secure and manageable environment in digitized format. Appropriate triggers will generate dashboards and management reports every time an event causes a substantial shift in project risk or timeline or is a deviation in processes developed. The envisaged system would expedite decision making, ensure better planning and co-ordination between different functions, better data management, effective reporting, knowledge management, etc. Program Management will provide senior management with critical information related to various contracts, activities and funds in the form of management dashboards with inbuilt triggers to ensure timely decision making.

- 3.14.3 Since most of the Project related Data creation would happen outside Employer organization, the proposed IT system is largely dependent on data being created and uploaded by Contractors / GC.
- 3.14.4 While Employer, with due consultation with the GC, would define the data collection templates, GC would upload actual data into the system. As such, a part of the Scope of Work of the GC will include the following elements:
- a. Upload/definition of Project Plans as per the template and using the software defined by Employer
 - b. Maintenance and updation of uploaded Project Plans in software used by Employer
 - c. Upload of drawings/ designs created by Contractor as per the classification and on the software-platform defined by Employer
 - d. Online MB (Measurement Book) Entry in Project Monitoring System, in a template defined by Employer.
 - e. Asset details needs to be updated in the system in format prescribed by Employer.
 - f. Geo-referencing of the alignment on WGS 84 Coordinates
 - g. Capture and upload of geo-referencing coordinates of the assets into GIS
 - h. Upload of digitally signed invoices for payment processing
- 3.14.5 It will be the responsibility of the GC to ensure there is interoperability between the GC's IT System and that being developed by Employer so that movement of information and data across the Employer boundaries is feasible in a seamless manner. This must be factored in, by the bidders, while preparing the price bids.
- 3.14.6 GC to ensure that the Contractor's ESHS performance is in accordance with good international industry practice and delivers the Contractor's ESHS obligations. The ESHS related services include but are not limited to:
- a. review and approve the Contractor's Environment and Social Management Plan (C-ESMP), including all updates and revisions (not less than once every 6 months);
 - b. review and approve ESHS provisions of method statements, implementation plans, GBV/SEA prevention and response action plan, drawings, proposals, schedules and all relevant Contractor's documents;
 - c. review and consider the ESHS risks and impacts of any design change proposals and advise if there are implications for compliance with ESIA, ESMP, other plans, consent/permits and other relevant project requirements;
 - d. undertake audits, supervisions and/or inspections of any sites where the Contractor is undertaking activities related to the Works, to verify the Contractor's compliance with ESHS requirements including its GBV/SEA

- obligations, with and without contractor and/or client relevant representatives, as necessary, but not less than once per month
- e. undertake audits and inspections of Contractor's accident logs, community liaison records, monitoring findings and other ESHS related documentation, as necessary, to confirm the Contractor's compliance with ESHS requirements;
 - f. agree remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's ESHS obligations;
 - g. ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with ESHS obligations;
 - h. check that the Contractor's actual reporting (content and timeliness) is in accordance with the Contractor's contractual obligations;
 - i. review and critique, in a timely manner, the Contractor's ESHS documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
 - j. undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ESHS issues;
 - k. establish and maintain a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g of those reporting allegations of GBV/SEA.
 - l. ensure any GBV/SEA instances and complaints that come to the attention of the consultant are registered in the grievance redress mechanism

3.15 Preparation of reports to track the progress of all project related works

- 3.15.1 The GC shall prepare and deliver reports including but not limited to those provided hereunder. Each of such reports shall be reviewed and, if required, commented by the Employer preferably within 14 days of the receipt of the report. The GC shall thereafter revise and modify the report to comply with Employer's observations and resubmit not later than 7 days of the receipt of such observations. Further, during course of the Consultancy, the Employer may, at any time, instruct the GC for further changes in these reports which the latter shall comply within 7 days of such instruction.

The GC shall prepare the following reports and documents in hard/ soft copy using relevant software program and submit to Employer, the required number of copies of the reports, in the format acceptable to Employer.

3.15.2 Inception Report

The GC shall submit an Inception Report (10 copies in English) within 21 days of commencement of services presenting technical appreciation of the service requirement and identifying both the overall work plan and the analytical steps to

reach solutions. The report should provide the service methodology, approach and provisional programme for completion of the project. The Inception Report shall be a further elaboration of the GC's submissions towards understanding of the Tender, the methodology to be followed and work plan. It shall also include quality assurance plan system of the GC's own working and including, but not limited to, quality policy, organizational structure, organizational chart, roles and responsibility of various positions, names of personnel proposed to man these positions, list of management procedures and element comparison schedule. Roles and responsibilities of Key Personnel and Other Professional Personnel specified (including R&R/Social) shall be expanded and detailed by the GC so as to make each Professional personnel responsible for specific items in a manner that all items of the Terms of Reference distinctively covered. Accordingly, as a part of the inception report, the GC should clearly bring out its plan:

- a) to supervise the contractors on site works, including the site organization proposed to support this activity;
- b) how is it planned to ensure that the desired quality of work is maintained by the contractors;
- c) method of checking contractor's invoices for the works and ensuring its integrity; and
- d) adequacy and verification of the type of equipment brought to site by the Contractor to ensure that works progress as per the agreed schedule

The GC shall deliver detailed management procedures which will describe how the GC will carry out the scope of Services and discharge its responsibility contained in the TOR. The management procedures shall be prepared for various Consultancy management activities including but not limited to personnel recruitment, training, document control, work inspections, material inspections, measurement checks, quality control, and design control.

3.15.3 **Daily Report**

The GC shall prepare and submit a daily report including significant events, if any, on the previous day. The report shall be sent by e-mail or fax to the Employer's head office and the Employer's representative at site. This report will also include any event/ happening which is likely to affect the progress, quality of work and safety.

3.15.4 **Weekly Progress Report**

During project execution phase, a weekly progress report will be submitted by the GC regarding progress of project contract works. This report shall be submitted in soft copy form through e-mail to the Employer's head office and the Employer's representative at site.

3.15.5 Monthly Progress Report

A Monthly Progress Report (20 copies in English) shall be submitted by the GC to Employer. This report shall be submitted by the 5th day of each calendar month and shall account for all work actually performed up to the end of the previous month. The monthly report shall be submitted in a format approved by Employer and shall contain sections/ sub-sections for, but not be limited to, the topics listed below:

A. Programme update - The GC shall maintain the Project Programme including:

- a. The Monthly Programme Update: Actual activity completion dates and percentage of activities completed up to the end of the month of the report shall be indicated. The report shall also indicate estimates of remaining duration and expected activity completion based on current progress. The Monthly Programme Update shall be accompanied by an Activity Report and a Narrative Statement.
- b. The Programme Status: cumulative progress of work up to the end of the month and a forecast of work remained shall be indicated.
- c. Activity Variance Analysis: Activities planned to start prior to or during the report period but not started and activities started and/or completed in advance of the Works Programme shall be analysed.

B. Milestone status

The GC shall monitor status of all Milestones due which have been achieved during the month and forecasts of achievement of any missed Milestones and those due in the next month.

C. Procurement report - The GC shall report on procurement, including:

- a. A summary of all significant procurement activities performed by the contractors during the month and details of outstanding actions.
- b. A report of plant and materials which will be incorporated into the works. The items shall be classified by type as listed in the specifications and the report should show as a minimum the following activities:
 - i. Purchase order date – schedule/actual
 - ii. Manufacturers/suppliers and origin
 - iii. Letter of credit issue date
 - iv. Manufacturers/suppliers shipping date – schedule/actual
 - v. Method of shipment
 - vi. Arrival date in India – schedule/actual
 - vii. Analysis of any delay happened/anticipated with proposal for corrective measures
 - viii. Factory testing report details

D. Safety health and environment (SHE) report

The GC shall report on SHE, including a review of all safety aspects during the month including reports on all accidents and actions proposed to prevent further occurrence.

E. Environment and Social Monitoring report

The GC shall report on Environmental monitoring with up-to-date status and position with respect to the agreed plan.

F. Land Acquisition and Resettlement Action Plan Monitoring Report

The GC shall prepare report covering physical and financial progress of land acquisition and various rehabilitation and resettlement activities undertaken for the implementation of RAP and its updates/addendums. The GC shall also report on monitoring of Resettlement Action Plan with up-to-date status, including related consultations and grievance redress status, and position with respect to the agreed plan. A quarterly monitoring plan shall be submitted to the Lender/AIIB.

G. Quality Report

The GC shall report on quality, including a review of all major non-conformances during the month including reports on actions proposed to prevent further occurrence.

H. Financial Report

The GC shall report on financial aspects including:

- a. A report of all significant financial matters, reviewing all payments due and made, and action proposed or taken in respect to any outstanding matters.
- b. A schedule indicating the status of all variations and expenditure forecast.
- c. A schedule of outstanding claims (if any). The report shall provide interim updated accounts of continuing claims.

I. The Monthly report shall also include:

- a. Status of work performed during the previous month, significant accomplishments, including critical items and problem areas, corrective actions taken or planned, and other problems and resolutions
- b. Deployment of technical and supervisory staff by the Contractor and progress of construction work with reference to the targets

- c. Measures aimed at course corrections – their requirement and their implications
- d. Unresolved claims, their genesis, justifications and recommendations on the same
- e. Staffing schedule of GC, mobilization/demobilization status, comparative statement of payments made to the GC with respect to the progress of works
- f. Details on progress of checking of designs/drawings/approval of drawings specifications for construction
- g. List of approval sought and given
- h. Interface issues, their resolution and pending issues
- i. Testing report/ progress of installations.

3.15.6 Quarterly Report

The GC shall submit a detailed Quarterly Report (5 copies in English) within 7 (seven) days of ending of each quarter. Quarterly reports should include a description of project activities illustrated by progress/completion photographs, status of any delays and detailed plan to make up any shortfall or deficiency, status of contractual claims, and details of all latest financial projections. Quarterly report shall also include Resettlement Action Plan Monitoring Report in similar format submitted as part of monthly reports.

3.15.7 Semi-Annual Environmental and Social Monitoring report

GC shall submit to the Employer a semi-annual environmental and social monitoring report for the Project with all the stipulated details. This report shall be forwarded by Employer to AIIB for further review.

3.15.8 Completion Report

- a. The GC shall prepare detailed Work Completion Reports (5 copies in English), separately for each contract package, inclusive of all data and drawings (including soft copies) pertaining to the execution of the contracts which shall be submitted at the commissioning of the works.
- b. The GC shall prepare detailed Contract Completion Reports (10 copies in English), separately for each contract package, inclusive of all data and drawings (including soft copies) pertaining to the execution of the contracts which shall be submitted at the completion of the contracts. These reports will include experience during the defect liability period.
- c. The GC shall prepare an Executive Summary Report (15 copies in English, one original, loose set in English), covering in a refined form, the main summary of

the material contained in the Completion Reports, which shall be submitted along with Work and Contract completion reports.

3.15.9 ESHS reporting:

- a. “The Consultant shall provide immediate notification to the Client should any incident in the following categories occur while carrying out the Services. Full details of such incidents shall be provided to the Client within the timeframe agreed with the Client.
- b. Confirmed or likely violation of any law or international agreement;
- c. any fatality or serious (lost time) injury;
- d. significant adverse effects or damage to private property (e.g. vehicle accident); or
- e. any allegation of gender-based violence (GBV), sexual exploitation or abuse (SEA), sexual harassment or sexual misbehavior, rape, sexual assault, child abuse or defilement, or other violations involving children,
- f. Ensure that contractor immediate notifications on ESHS aspects are shared with the Client immediately;
- g. Immediately inform and share with the Client any immediate notification related to ESHS incidents provided to the Consultant by the Contractor, and as required of the Contractor as part of the Progress Reporting;
- h. Share with the Client in a timely manner the Contractor’s ESHS metrics, as required of the Contractor as part of the Progress Reports.”
- i. Any other report sought by Employer from time to time during the General Consultancy Period.

4. Scope Exclusions

- 4.1 Scope of work for GC shall include but not be limited to the parts covered above except the following:
 - i. Traffic Demand Assessment and financial Modelling for the Haryana Orbital Rail Corridor.
- 4.2 However, the responsibility of ensuring compatibility of the above works with Project Schedule, Strategy and general principle shall be with GC. Other works shall continue to be in the scope of GC including those of the Depot.

5. Obligations of the General Consultant

- 5.1 The GC shall at all times exercise all reasonable skill, care and diligence, in the discharge of his duties. The GC shall also be responsible for the accuracy and completeness of works and commissioning of Haryana Orbital Rail Corridor.
- 5.2 The GC will be responsible to ensure that the goods and services used on the Project are appropriate, suitable and are reasonably costed. The designs and specification adopted on the project should be such that they, in no way, limit the requirements

regarding competitive bidding. It is also essential that the GC is and remains impartial in the performance of its duties.

- 5.3 In performance of all services, the GC shall function in close co-ordination with Employer.
- 5.4 The GC shall maintain full records relating to all aspects of the work covered by the project. Such records shall be made available at all times to the Employer for inspection. Mere acceptance by Employer shall not relieve the GC of their professional obligations to correct at their own cost any errors in their work.
- 5.5 All documents, plans, reports, drawings, engineering specifications and similar materials, and any data or records pertaining to the work, including soft copies thereof, shall be treated as confidential by GC and shall not, without written consent of Employer, be made available to any unauthorized person and shall be delivered to Employer upon completion of the work and shall become the property of Employer. However, GC may retain, for his own record, copies of the said plans and documents.

6. Staffing Requirement

- 6.1 The GC shall prepare Rolling Deployment Schedule for the entire period of the implementation of the project including the period of commissioning and take approval from Employer. Depending on the pace of the progress on the project, Employer may require GC to adjust and regulate the engagement and deployment of their Experts.
- 6.2 The details of indicative deployment of Key Experts, Non-Key Experts, and their indicative minimum period of deployment is enclosed as **Annexure-2** of this Section-7: Terms of Reference. The minimum qualification and experience of Key & Non-Key Experts are also enclosed at **Annexure-3** of this section.

7. Activities and contract period

- 7.1 The Activities of this Contract shall be as follows:

S.No.	Activities	Completion time in months
1.	Submission of report after critical study of DPR (incl. amendments thereon), value addition over & above provisions of these studies with proposed implementation roadmap as per Clause 3.1 of Section 7: Terms of Reference.	D*+2
2.	Submission of overall project schedule with critical path which shall include but not be limited to each stage of	D*+3

	design, procurement, manufacture, delivery to site, construction, erection, testing and commissioning as per Clause 3.2 of Section 7: Terms of Reference.	
3.	Implementation and monitoring of land acquisition process and Resettlement Plan as per Clause 3.10 of Section 7: Terms of Reference	As per approved Project Schedule
4.	Development and integration of IT based platform as per Clause 3.14 of Section 7: Terms of Reference	As per approved Project Schedule
5.	Activities related to Procurement	
a.	Development of procurement strategy, procurement schedule as per Clause 3.3 (A) of Section 7: Terms of Reference	D*+3
b.	Preparation of bid documents, tender design, proof checking of consultant's tender design for tenders Standard Schedule of Rates, Standard Specifications and Method of Measurement as per Clauses 3.3 (B) of Section 7: Terms of Reference	For priority section, bid documents have to be prepared within D*+3 and for remaining packages as per approved procurement schedule
c.	Bid process management including assistance in selection of contractors, suppliers, detailed design consultants, re-invitation of bids if so required and other related services till finalization of contract agreement as per Clauses 3.3 (C) of Section 7: Terms of Reference	As per approved procurement schedule
6.	Activities related to Contract Management:	
a.	For Systems Packages: Proof-checking of designs / drawings, technical proposals and specifications submitted by contractors/consultants along with Interface Management, System Integration, Supervision of all implementation activities for Systems, Quality, Safety and Environment Management, Project Management and Monitoring etc. as defined in Clauses 3.4 and 3.5 of Section 7: Terms of Reference.	As per the Completion Schedules of the System Bid Packages
b.	For Civil work Packages: Proof-checking of designs / drawings, technical proposals and specifications submitted by	As per the Completion Schedules of the

	contractors/consultants along with Interface Management, System Integration, Quality, Safety and Environment Management, Project Management and Monitoring etc. as defined in Clauses 3.4 and 3.5 of Section 7: Terms of Reference.	Civil work Bid Packages
7.	Testing and Commissioning of the entire system, Trial Run, Statutory Approvals and start of Revenue Operations as defined in Clause 3.6 of Section 7: Terms of Reference.	Approved Commissioning Targets
8.	Knowledge management, Knowledge transfer and capacity building of Employer Staff including preparation of plans and O&M manuals etc. as defined in Clause 3.7 of Section 7: Terms of Reference.	As per approved Project Schedule
9.	Support during Operation & Maintenance phase and Defect Liability Period of the Systems as defined in Clause 3.8 of Section 7: Terms of Reference.	As per approved Project Schedule

**Where 'D' is the Commencement Date*

7.2 **Contract Period** - Estimated time of completion of this General Consultancy Services is 72 months for the entire corridor divided into two (2) phases:

- ❖ Project implementation/ construction period of 60 months (i.e. 5 years)
- ❖ Providing support during O&M Phase of the Project for 12 months (i.e. 1 year)

Note: A full-fledged organization of GC shall be required during the first 5 years of services (during Project implementation/ construction period). However, for the next one year (during O&M phase support period) a thin organization of GC shall be required covering all the aspects with respect to Civil, Electrical and S&T with bare minimum personnel.

8. Services and facilities to be provided by Employer to GC

Employer on request of the GC, will provide necessary documentation to the foreign consultants and personnel to support in obtaining work permits, residence permits, visas and other documents required for stay in India. The site facilities for Employer and Engineer is detailed out in **Annexure 4** of this Section-7: Terms of Reference.

9. Code of Conduct

A minimum requirement for the Code of Conduct shall be applicable to GC, taking into consideration the issues, impacts, and mitigation measures identified, for example, in:

- project reports e.g. ESIA/ESMP
- any particular GBV/SEA requirements

- consent/permit conditions (regulatory authority conditions attached to any permits or approvals for the project)
- required standards including the Bank’s EHS Guidelines, if any
- relevant international conventions, standards or treaties, etc., national, legal and/or regulatory requirements and standards (where these represent higher standards than the Bank’s EHS Guidelines)
- relevant standards e.g. Workers’ Accommodation: Process and Standards
- relevant sector standards e.g. workers’ accommodation
- grievance redress mechanisms.

The types of issues identified could include. risks associated with labor influx, spread of communicable diseases, sexual harassment, gender based violence, illicit behavior and crime, and maintaining a safe environment etc.

A satisfactory code of conduct will contain obligations on all Consultant’s Experts that are suitable to address the following issues, as a minimum. Additional obligations may be added to respond to particular concerns of the region, the location and the project sector or to specific project requirements. The code of conduct shall contain a statement that the term “child” / “children” means any person(s) under the age of 18 years.

The issues to be addressed include:

- i. Compliance with applicable laws, rules, and regulations
- ii. Compliance with applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), the Consultant’s Experts, the Client’s personnel, and the Contractor’s personnel, including sub-contractors and day workers (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment)
- iii. The use of illegal substances
- iv. Non-Discrimination in dealing with the local community (including vulnerable and disadvantaged groups), the Consultant’s Experts, the Client’s personnel, and the Contractor’s personnel, including sub-contractors and day workers (for example, on the basis of family status, ethnicity, race, gender, religion, language, marital status, age, disability (physical and mental), sexual orientation, gender identity, political conviction or social, civic, or health status)
- v. Interactions with the local community(ies), members of the local community (ies), and any affected person(s) (for example to convey an attitude of respect, including to their culture and traditions)

- vi. Sexual harassment (for example to prohibit use of language or behavior, in particular towards women and/or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate)
- vii. Violence, including sexual and/or gender-based violence (for example acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion, and deprivation of liberty)
- viii. Exploitation including sexual exploitation and abuse (for example the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading behavior, exploitative behavior or abuse of power)
- ix. Protection of children (including prohibitions against sexual activity or abuse, or otherwise unacceptable behavior towards children, limiting interactions with children, and ensuring their safety in project areas)
- x. Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer and not open areas)
- xi. Avoidance of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection)
- xii. Respecting reasonable work instructions (including regarding environmental and social norms)
- xiii. Protection and proper use of property (for example, to prohibit theft, carelessness or waste)
- xiv. Duty to report violations of this Code
- xv. Non-retaliation against personnel who report violations of the Code, if that report is made in good faith

Note:

The Code of Conduct should be written in plain language and signed by each Expert to indicate that they have:

- i. received a copy of the code;
- ii. had the code explained to them;
- iii. acknowledged that adherence to this Code of Conduct is a condition of employment; and
- iv. understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities.

A copy of the code shall be displayed in the Engineer's office. It shall be provided in appropriate languages.

ANNEXURE 1- Project Overview

Employer's requirements as shall be stipulated in Bid Documents for the works contract(s) shall be contained in the Bid Document and in its Corrigenda, which may be referred to. The details given in this section are indicative and be considered to understand the project in its totality.

Background:

The Union Cabinet of India in February 2016 has given approval for allowing the Ministry of Railways to form Joint Venture Companies with the State Governments to mobilize resources for undertaking various rail infrastructure projects in States.

Following which, a Memorandum of Understanding (MoU) was signed in June 2016 between Ministry of Railways and Government of Haryana for setting up of Joint Venture (JV) Company for development of railway infrastructure in the State of Haryana.

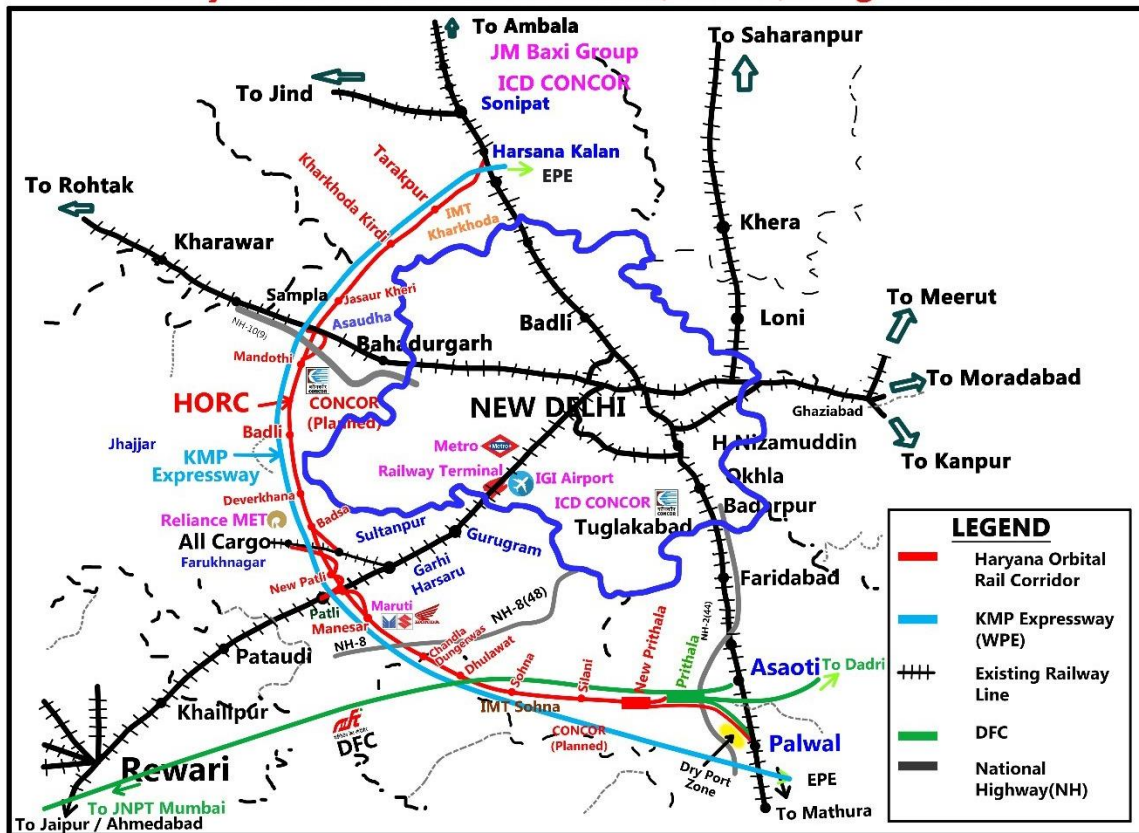
Accordingly, Haryana Rail Infrastructure Development Corporation Ltd (HRIDC) was incorporated in August 2017 as a State Joint Venture Company with **51% participation** of the State of Haryana and **49% participation** of the Ministry of Railways (MOR) in the State of Haryana with following objectives:

- To identify the rail infrastructure projects in the State of Haryana
- Anchor role to the State Government in the planning and implementation of railway infrastructure projects
- Act as a nodal agency to plan and complement the development of railway infrastructure in the State
- Generate greater financial resources through participation of the State, other stakeholders, including the private sector in project specific Special Purpose Vehicle(s) (SPVs)

Haryana Rail Infrastructure Development Corporation Limited (“**HRIDC**”) joined hands with Haryana State Industrial and Infrastructural Development Corporation (“**HSIIDC**”), Gurugram Municipal Development Authority, Maruti Suzuki India Limited, International Cargo Terminals and Infrastructure Private Limited and All Cargo Logistics MMLP so as to promote and incorporate a limited liability company, **Haryana Orbital Rail Corporation Limited**, under the Companies Act, 2013 for the purposes of development, construction, management and functioning of this Rail System on joint venture basis.

Alignment of HORC project is shown in map below:

Haryana Orbital Rail Corridor(HORC)-Alignment



Salient features of proposed rail infrastructure facilities are as follows:

1.	Serving Railway Station	Harsana Kalan on Delhi-Ambala Line and Palwal & Asaoti (through Pirthala yard of DFCCIL) on Delhi-Mathura line.
2.	Route length of HORC	121.74 km
	Total route length including Connectivities	143.93 km
3.	Gauge	Broad Gauge 1676 mm
4.	Ruling gradient	1 in 150 (compensated)
5.	No. of Curves	61
6.	Maximum Permissible Speed	160 kmph

7.	Bridges:- a) Major b) Minor c) ROB d) RFO e) RUB (Road Crossings)	23 195 02 03 153
8.	Design Loading	IRS 25T Axle load for superstructure and 32.5T Axle load for substructure and formation
9.	Rails	60 Kg (T-12)/90 UTS - Prime quality
10.	Sleepers	60 kg PSC sleepers with 1660 Nos. per Km
11.	Point and crossings	1 in 12 with CMS crossings, thick web switches on PSC Sleepers with fan-shaped layout in crossing stations connecting with main line and loop lines
12.	Rail Joints	Flash Butt weld (FBW) primarily LWR Track with SWR on sharp curves and at other obligatory locations
13.	Ballast	65 mm size Ballast with 350 mm cushion
14.	OHE and Traction	Electrified (High Rise OHE)
15.	Total Estimated Cost	INR 5,617.69 Crores
16.	Number of crossing/ Junction stations	14 New stations namely New Pirthala, Silani, Sohna, Dhulawat, Chandla Dunderwas, Manesar, New Patli, Badasa, Deverkhana, Badli, Mandothi, Jasaurkheri, Kharkhoda Kirholi and Tarakpur
17.	Gradient in station yards	1 in 400
18.	Safety provisions	The stations and the locations where infringement from outside is envisaged shall be barricaded.

Proposed Benefits of the Project

- The project will facilitate the diversion of goods traffic not meant for Delhi and will help in developing multimodal hubs in NCR region of Haryana. The project will serve open unserved areas of the state of Haryana, thereby enhancing economic and social activity of the Haryana sub-region of NCR.
- In addition, the rail corridor will serve passenger trains on this route, which will directly connect region of Gurugram with capital of state i.e. Chandigarh, bypassing Delhi,

leading to reduced journey travel time. Also, it is proposed that trains like Shatabdi Express, etc. may take this route bypassing Delhi so as to provide fast, reliable, safe and comfortable journey to the citizens of Haryana. Also, the proposed corridor will facilitate running of trains from Bijwasan Railway terminal in Delhi to various parts of the state of Haryana.

- Further, there was a need for connecting Southern Districts of Haryana with Northern Part of Haryana and its Capital city Chandigarh, bypassing Delhi. This Project will fulfil this long pending demand of the people of the State. This Project along with KMP Expressway will act as an Economic Corridor for the NCR region and giving boost to industrial growth and urbanisation in this area.
- Will promote creation of logistics hubs – The project is expected to serve the major logistic hubs and also encourage development of new logistic hubs and market yards in the region.
- Will assist in decongestion of Delhi by diverting goods and passenger trains not originated/ destined for Delhi.
- Will reduce pollution in the region by incentivising shift of road traffic in Delhi and NCR to electrified railway traffic, which will have almost negligible pollution.
- Enhanced connectivity with existing transportation system – The project will have freight and passenger transportation bypassing Delhi with connectivity to Indian Railway Routes as well as dedicated freight corridor (DFC) network.
- Will free land parcels in Delhi area, as some of the yards & goods sheds will get relocated outside Delhi, releasing huge area of prime real estate, over the project life cycle.

Note: The DPR of the project may be referred for better appreciation of the project. However, it may be noted that the information provided in the DPR be considered as indicative only and no decision be undertaken without checking and verifying the true source.

ANNEXURE 2 – Deployment of GC Personnel

The indicative deployment of resource is given in table below:

HORC - Indicative Deployment of GC Personnel							
Length of HORC (including Connectivities): 144 Route Km; Construction period: 5*12 = 60 months; O&M support period: 1*12 = 12 months							
S. No./ Code	Resource Name/ Site	PD/DPD/ Key 1/ Key 2/ Non-Key 1/ Non-Key 2/ Non-Key 3/ Non-Key 4	Evaluation to be done during Technical Bid	Numbers	Minimum Man Months per personnel	Total Man Months	Minimum Total Experience (Months)
A	PROJECT-IN-CHARGES						
PD	Project Director	PD	YES	1	1X72	72.0	25
DPD -1	DPD – Civil	DPD	YES	1	1X60	60.0	20
DPD -2	DPD – Electrification	DPD	YES	1	1X48	48.0	20
DPD -3	DPD - S&T	DPD	YES	1	1X48	48.0	20
B	PROJECT AND CONTRACT Management						
RE-1	RE - Planning and Contracts	Key 1	YES	1	1X60	60.0	12/10 (Graduate/Post Graduate)
F-1	Chief Finance Manger	Key 1	YES	1	1X72	72.0	12
ARE -1	ARE - Planning and Contracts	Non-Key 1		1	1X72	72.0	7/10 (Graduate/Diploma)
ARE -2	ARE- QS & Billing	Non-Key 1		2	2X52	104.0	7/10 (Graduate/Diploma)
F-2	Finance Manager	Non-Key 1		1	1X72	72.0	7
S-1	Supervisor -Planning and	Non-Key 2		2	1X60+1X72	132.0	4/7 (Graduate/Diploma)

	Contracts						
S-2	Supervisor - QS and Billing	Non-Key 2		2	2X52	104.0	4/7 (Graduate/Dipl oma)
F-3	Executive-- Finance	Non-Key 2		1	1X72	72.0	4
C	DESIGN AND DRAWING						
C.1	CIVIL						
RE-2	RE - Civil/ Design	Key 1	YES	1	1X60	60.0	12/10 (Graduate/Post Graduate)
ARE -3	ARE - Civil/ Design	Non-Key 1		2	2X60	120.0	7/10 (Graduate/Dipl oma)
S-3	Supervisor - Civil/ Design	Non-Key 2		4	4X60	240.0	4
C.2	OHE AND ELECTRICAL						
ARE -4	ARE - Drawing and Design (Elec.) Engineer	Key-2	YES	1	1X48	48.0	7/10 (Graduate/Dipl oma)
S-4	Supervisor - Drawing and Design (Elec.) Engineer	Non-Key 2		1	1X48	48.0	4/7 (Graduate/Dipl oma)
C.3	SIGNALLING AND TELECOM						
ARE -5	ARE - Drawing and Design (S&T)	Key-2	YES	1	1X48	48.0	7/10 (Graduate/Dipl oma)
S-5	Supervisor - Drawing and Design (S&T) Engineer	Non-Key 2		1	1X48	48.0	4/7 (Graduate/Dipl oma)
D	CONSTRUCTION SUPERVISION						
D.1	CIVIL AND TRACK WORKS						
RE-3	Geotechnic al expert	Key 1	YES	1	1X30	30.0	10 (Post Graduate)
RE-4	Geologist	Key 1	YES	1	1X30	30.0	10 (Post Graduate)
RE-5	RE - Civil/ For Project Site	Key 1	YES	2	1X54 + 1X49	103.0	12
RE-6	RE - Permanent Way	Key 1	YES	1	1X65	65.0	12

ARE-6	ARE – Tunnel	Key 2	YES	1	1X45	45.0	7/10 (Graduate/Diploma)
ARE-7	ARE – Bridge	Key 2	YES	1	1X39	39.0	7/10 (Graduate/Diploma)
ARE-8	ARE - Civil for Project Site	Non-Key 2		3	1X54 + 1X45+1X45	144.0	7/10 (Graduate/Diploma)
ARE-9	ARE - Permanent Way	Non-Key 2		3	1X62 + 2X47	156.0	7/10 (Graduate/Diploma)
S-6	Supervisor – Tunnel	Non-Key 3		2	2X45	90.0	4/7 (Graduate/Diploma)
S-7	Supervisor – Bridge	Non-Key 3		2	2X39	78.0	4/7 (Graduate/Diploma)
S-8	Supervisor – Civil for Project Site	Non-Key 3		12	3X39 + 4X45 + 4X12 + 1X24	369.0	4/7 (Graduate/Diploma)
S-9	Supervisor - Permanent Way	Non-Key 3		5	1X60 + 2X59 + 2X48	274.0	4/7 (Graduate/Diploma)
S-10	Surveyor	Non-Key 3		1	1X60	60.0	4/7 (Graduate/Diploma)
D.2	OHE AND GENERAL ELECTRICAL						
RE-7	RE - Electrical (General & OHE)	Key 1	YES	1	1X63	63.0	12
ARE-10	ARE - Electrical (General & OHE)	Non-Key 2		3	1X43 + 2X36	115.0	7/10 (Graduate/Diploma)
S-11	Supervisor - Electrical – General	Non-Key 3		3	3X24	72.0	4/7 (Graduate/Diploma)
S-12	Supervisor - Electrical – OHE	Non-Key 3		4	2X43 + 2X36	158.0	4/7 (Graduate/Diploma)
D.3	SIGNALLING AND TELECOM						
RE-8	RE - S&T	Key 1	YES	1	1X63	63.0	12
ARE-11	ARE - Signalling and Telecom	Non-Key 2		2	1X43+ 1X42	85.0	7/10 (Graduate/Diploma)
S-13	Supervisor –	Non-Key 3		4	2X43 +	170.0	4/7 (Graduate/Diploma)

Draft ToR for General Consultant for Haryana Orbital Rail Corridor Project

	Signalling				2X42		oma)
S-14	Supervisor – Telecom	Non-Key 3		1	1X36	36.0	4/7 (Graduate/Diploma)
E	IT						
ARE-12	ARE - IT Systems	Key 2	YES	1	1X60	60.0	7
S-15	Supervisor - IT systems	Non-Key 1		1	1X72	72.0	4/7 (Graduate/Diploma)
F	Quality, Safety, Health and Environment, Social/R&R						
ARE-13	ARE - QA/QC (Civil)	Key 2	YES	1	1X60	60.0	7/10 (Graduate/Diploma)
SAF-1	Safety and Health Expert	Key 2	YES	2	1X52 + 1X60	112.0	7
E &H - 1	Environmental Expert	Key 2	YES	2	1X52 + 1X60	112.0	5/7 (Post Graduate/ Graduate)
R&R -1	R&R/ Social Expert	Key 2	YES	1	1X24	24.0	10/12 (Post Graduate/ Graduate)
S-16	Supervisor - QA/QC (civil)	Non-Key 1		6	1X60 + 2X39 + 3X45	273.0	4/7 (Graduate/Diploma)
SAF-2	Assistant – Safety and Health expert	Non-Key 1		4	4X60	240.0	4
E &H - 2	Assistant – Environmental expert	Non-Key 1		2	1X52+ 1X60	112.0	4/7 (Graduate/Diploma)
R&R -2	Assistant R&R/Social Expert	Non-Key 1		3	3X24	72.0	7
G	Support Staff Team						
S-17	Computer Operator cum Stenographer	Non-Key 3		8	8X60	480.0	4
S-18	Multi Skilled assistant cum Clerk/ Record/ Storekeeper	Non-Key 3		13	5X60+2X45 + 3X39 + 2X43 + 1X47	640.0	4

Draft ToR for General Consultant for Haryana Orbital Rail Corridor Project

S-19	Draftsman / CAD Operator/ Estimator	Non-Key 3		3	3X60	180.0	2/4 (Graduate/Dipl oma)
S-20	Accountant	Non-Key 3		3	3X60	180.0	4
S-21	Office Attendant	Non-Key 4		12	1X60+3X72 + 2X45 + 3X39 + 2X43 + 1X47	616.0	2

SUMMARY

S.No	Category	Total Nos	Total Manmonths
1	PD	01	72
2	DPD	03	156
3	KEY 1	10	546
4	KEY 2	11	548
5	NON-KEY 1	22	1,137
6	NON-KEY 2	22	1,144
7	NON-KEY 3	61	2,787
8	NON-KEY 4	12	616
TOTAL		142	7,006

ANNEXURE 3 - GC Personnel Qualification and Experience

1. Project Director (PD)

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>a) Essential: Graduate Degree in Civil Engineering from a recognized institution</p> <p>b) Preferred:</p> <p>i) Retired/Voluntary retired IRSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 25 years.</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 15 years' experience of handling Railway line or metro rail or regional rail or sub-urban rail or eligible works (as defined in eligible works) project(s) as In-charge or one level below the In-charge of project/ specific section of project with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>ii) At least 5 years' experience in SA Grade and above of Engineering department of Railways and/or as GM and above in Civil Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having at least 5 years' experience in construction of railway line in any grade.</p> <p><i>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</i></p> <p>Preference will be given to those having experience of MDB financed projects.</p>

Note:

1. The proposed person should not be older than 67 years as on deadline for submission of proposals.

2. Deputy Project Director (DPD) – Civil

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>a) Essential: Graduate Degree in Civil Engineering from a recognized institution</p> <p>b) Preferred:</p> <p>i) Retired/ Voluntary retired IRSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 20 years.</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 10 years' experience of handling Railway line or metro rail or regional or sub-urban rail or eligible works (as defined in eligible works) project(s) including procurement strategy, preparation of bid documents, evaluating and finalizing the tenders, etc. as In-charge or one level below the In-charge of project/ specific section of project with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>ii) At least 7 years' experience in JA Grade and above of Engineering department of Railways and/or as JGM and above in Civil Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having atleast 5 years' experience in construction of railway line in any grade.</p> <p><i>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</i></p> <p>Preference will be given to those having experience of MDB financed projects.</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

3. Deputy Project Director (DPD) – Electrification

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>a) Essential: Graduate degree in Electrical/ Electronics Engineering OR a combination of any sub stream of basic streams of Electrical/ Electronics Engineering from a recognized University/ Institution</p> <p>b) Preferred:</p> <p>i) Retired/ Voluntary retired IRSEE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 20 years.</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 10 years' experience of handling any Electrification project(s) of Railway or metro rail or regional rail or sub-urban rail or eligible works (as defined in eligible works) project(s) including procurement strategy, preparation of bid documents, evaluating and finalizing the tenders, etc. as In-charge or one level below the In-charge of project/ specific section of project with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>ii) At least 7 years experience in JA Grade and above of Electrical Engineering Department of Railway and/ or as JGM and above in Electrical Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of atleast 05 years in electrification projects in any grade.</p> <p><i>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</i></p> <p>Preference will be given to those having experience of MDB financed projects.</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

4. Deputy Project Director (DPD) – Signalling & Telecommunication

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>a) Essential: Graduate degree in Electrical/Electronics Engineering OR a combination of any sub stream of basic streams of Electrical/Electronics Engineering from a recognized University/ Institution</p> <p>b) Preferred:</p> <p>i) Retired/ Voluntary retired IRSSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 20 years for Graduate Degree holders.</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 10 years' experience of handling any Signaling & Telecommunication (S&T) project(s) of Railway or metro rail or regional rail or sub-urban rail or eligible works (as defined in eligible works) project(s) including procurement strategy, preparation of bid documents, evaluating and finalizing the tenders, etc. as In-charge or one level below the In-charge of project/ specific section of project with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>ii) At least 7 years' experience in JA Grade and above of S&T Department in Railways Gazetted Cadre of S&T department in Railways and/ or as JGM and above in Signal & Telecommunication Engineering department in RVNL/ RITES/ IRCON or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of at least 05 years in execution of Construction Projects involving Railway signaling works in any grade.</p> <p><i>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</i></p> <p>Preference will be given to those having experience of MDB financed projects.</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

5. Resident Engineer – Civil/ Design

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Graduate Degree in Civil Engineering from a recognized institution.</p> <p>(b) Preferred:</p> <p>i) Post Graduate Degree in Structural Engineering (Civil) from a recognized institution.</p> <p>ii) Retired/ Voluntary retired IRSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 12 years for Graduate Engineer and atleast 10 years for Post Graduate in Structural Engineering</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 8/6 years (Graduate/ Post Graduate) of experience of design involving earthworks, bridges, tunnels, station buildings, earth retaining structures etc in railway infrastructure projects or any eligible work</p> <p style="text-align: center;">OR</p> <p>(ii) At least 5 years' experience either in Gazetted cadre of Civil Engineering Department of Railways and / or as Manager and above in Civil Engineering department in RITES/ IRCON / RVNL or equivalent grade in Konkan Railway / MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of at least 5 years in design of Civil Engineering works in any grade.</p> <p>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

6. Resident Engineer – Planning and Contracts

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Graduate in Civil Engineering from a recognised institution or equivalent</p> <p>(b) Preferred: Certification/ Post Graduate degree in Project Management/ Construction Management from a recognized institution</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 12/10 years for Graduate/ Post Graduate Engineer.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 8/6 years (Graduate/ Post Graduate) experience of preparation of procurement strategy, tender documents, bid process management, managing contracts of Railway infrastructure projects or of eligible works with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>(ii) At least 5 years' experience either in Gazetted cadre of Engineering Department of Railways and / or as Manager and above in Civil Engineering Department in RITES/ IRCON / RVNL or equivalent grade in Konkan Railway / MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of at least 5 years in Civil Engineering works related to Railway construction projects in any grade.</p> <p>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</p>

Note:

- The proposed person should not be older than 65 years as on deadline for submission of proposals.

7. Resident Engineer – Permanent Way

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Degree in Civil Engineering or equivalent from a recognized institute.</p> <p>(b) Preferred: Retired/ Voluntary retired IRSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 12 years for Graduate Engineers</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 8 years' experience of track laying in construction of Railway Lines or Track Renewals in rail infrastructure projects with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>(ii) At least 5 years' experience either in Gazetted cadre of Engineering department of Railways and / or as Manager and above in RITES/ IRCON / RVNL or equivalent grade in Konkan Railway / MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined for track laying in construction of Railway Lines or Track Renewals/ track maintenance. The person should also meet the hurdle criteria of having experience of at least 5 years in track laying in construction of Railway Lines or Track Renewals/ track maintenance in any grade.</p> <p><i>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</i></p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

8. Chief Finance Manager

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Graduation in any discipline or equivalent</p> <p>(b) Preferred:</p> <p>(i) Graduation in Commerce</p> <p>(ii) Master's Degree in Finance</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 12 years.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 8 years' experience of end to end financial planning/ monitoring/ management, preparation of financial statements, project expenditure control in rail/ highway infrastructure projects with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>(ii) At least 5 years' experience either in Gazetted cadre of Accounts department of Railways and / or as Manager and above in RITES/ IRCON / RVNL or equivalent grade in Konkan Railway / MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined in Finance Department. The person should also meet the hurdle criteria of having experience of at least 5 years in financial works in any grade related to Railway construction projects or any eligible works.</p> <p style="text-align: center;">OR</p> <p>(iii) At least 5 years' experience in Gazetted cadre of Government Organizations and/ or as Manager (or equivalent) in PSUs either individually or combined in Finance Department. The person should also meet the hurdle criteria of having atleast 5 years' experience in end to end financial planning/ monitoring/ management, preparation of financial statements, project expenditure control related to infrastructure projects in any grade.</p> <p><i>Note: The experience under (ii) and (iii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</i></p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

9. Resident Engineer – Civil for Project Site

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Degree in Civil Engineering from a recognised institution or equivalent.
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 12 years for Graduate Engineer</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 8 years' experience of construction/supervision of railway Infrastructure projects involving earthworks, bridges, tunnel, station buildings etc. with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>(ii) At least 5 years' experience either in Gazetted cadre of Engineering Department of Railways and/ or as Manager and above in Civil Engineering department in RITES/ IRCON /RVNL or equivalent grade in Konkan Railway/ MRVC/DFCCIL/any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of at least 5 years in Civil Engineering works related to Railway construction projects involving tunnel, bridges, earthworks, station building, etc. in any grade.</p> <p>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

10. Geotechnical Expert

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: M.Tech in Geotechnical Engineering from a recognised institution or equivalent.
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 10 years for Post Graduate Engineers.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 7 years' experience of carrying out Geotechnical investigation works, preparing and review of geotechnical interpretation report for Tunnels, Bridges and other structures in Railway / Highway Infrastructure projects with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>(ii) At least 5 years' experience either in Gazetted cadre of Engineering Department of Railways and/ or as Manager and above in Geotechnical Engineering department in RITES/ IRCON /RVNL or equivalent grade in Konkan Railway/ MRVC/DFCCIL/any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of at least 5 years in Civil Engineering works related to tunnel construction in any grade.</p> <p style="text-align: center;">OR</p> <p>(iii) At least 5 years' experience as Assistant Engineer (or equivalent) and above in Geotechnical Engineering department in Government organizations or as Manager (or equivalent) in PSUs either individually or combined. The person should also meet the hurdle criteria of having atleast 5 years' experience in construction/ supervision of tunnel of Highway project in any grade.</p> <p>Note: The experience under (ii) and (iii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

11. Geologist

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Msc in Geology from a recognised institution or equivalent.
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 10 years for Post Graduate holders.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 7 years' experience in the field of geological investigations, preparation and interpretation of geological reports in Railway / Highway Infrastructure projects with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>(ii) At least 5 years' experience either in Gazetted cadre of Engineering Department of Railways and/ or as Manager and above in Geology department in RITES/ IRCON /RVNL or equivalent grade in Konkan Railway/ MRVC/DFCCIL/any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of at least 5 years in Civil Engineering works related to tunnel construction in any grade.</p> <p style="text-align: center;">OR</p> <p>(iii) At least 5 years' experience as Assistant Engineer (or equivalent) and above in Government organizations or as Manager (or equivalent) in Geology Department in PSUs either individually or combined. The person should also meet the hurdle criteria of having atleast 5 years' experience in construction/ supervision of tunnel of Highway project in any grade.</p> <p>Note: The experience under (ii) and (iii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

12. Resident Engineer – Signalling and Telecommunication

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Degree in Electronics/ Electrical Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>i) Retired/ Voluntary retired IRSSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 12 years for Graduate Engineers.</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>(i) Minimum professional experience of 8 years as In-charge or one level below the In-charge of signaling works of Railways with Signaling Contractors for RRI/ SSI/ PI and/ or as Expert (S&T) or equivalent or higher with Project Management Consultants or General Consultant or Construction Agency for RRI/SSI/PI either individually or combined.</p> <p style="text-align: center;">OR</p> <p>ii) At least 5 years' experience in Gazetted Cadre of S&T department in Railways and/or as DGM and above in Signal & Telecommunication Engineering department in RVNL/ RITES/ IRCON or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of at least 5 years in execution/ Construction projects involving Railway signaling in any grade.</p> <p>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

13. Resident Engineer – Electrical (General & OHE)

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Degree in Electrical/ Electronics Engineering OR a combination of any sub stream of basic streams of Electrical/ Electronics Engineering from a recognized University/ Institution.or equivalent.</p> <p>(b) Preferred: Retired/ Voluntary retired IRSEE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total professional experience (post minimum professional qualification): At least 12 years for Graduate Engineers.</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 8 years' experience of execution/ supervision of a Railway Electrification project with Project Management Consultant or General Consultant or Construction Agency.</p> <p style="text-align: center;">OR</p> <p>(ii) At least 5 years' experience in Gazetted cadre of Electrical Engineering Department of Railway and/or as Manager and above in Electrical Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined. The person should also meet the hurdle criteria of having experience of atleast 5 years in railway electrification projects in any grade.</p> <p>Note: The experience under (ii) above shall be added to any experience under (i) to meet the requirement under (i) and for assigning of marks.</p>

Note:

- The proposed person should not be older than 65 years as on deadline for submission of proposals.

14. Assistant Resident Engineer – Civil/ Design

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognized institution</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Structural Engineering (Civil) from a recognized institution.</p> <p>(ii) Retired/ Voluntary retired IRSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7/10 years' experience for Degree/ Diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification): At least 4/6 years' (Degree/Diploma) experience of design involving earthworks, bridges, tunnels, station buildings, earth retaining structures etc in railway infrastructure projects or any eligible work.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

15. Assistant Resident Engineer – Planning and Contracts

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p> <p>(ii) Certification in Project Management / Construction Management from a recognized institution.</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7/10 years' experience for Degree/ Diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification): At least 4/6 years (Degree/ Diploma) experience of preparation of procurement strategy, tender documents, bid process management, managing contracts of Railway infrastructure projects or of eligible works</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

16. Assistant Resident Engineer – Permanent Way

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognized institute or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Civil Engineering from a recognized institute or equivalent.</p> <p>(ii) Retired/ Voluntary retired IRSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder or 10 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 4/6 years (Degree/ Diploma) experience of track laying in construction of Railway Lines or Track Renewals or track maintenance in rail infrastructure projects or in any eligible works.</p> <p>(ii) Preference shall be given to the person having experience in Mechanized track linking works.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

17. Finance Manager

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Graduation in any discipline or equivalent (b) Preferred: (i) Graduation in Commerce (ii) Master's Degree in Finance
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 7 years. (b) Relevant Experience (post minimum professional qualification): (i) At least 4 years of experience of end to end financial planning/ monitoring/ management, preparation of financial statements, project expenditure control in rail/ highway infrastructure projects or of any eligible works

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

18. Assistant Resident Engineer – Civil for Project Site

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder or 10 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 4/6 years (degree/ diploma) experience of construction/ supervision of railway Infrastructure projects involving earthworks, bridges, station buildings etc.</p> <p>(ii) Preference will be given to person having experience in DFCC/RVNL Projects.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

19. Assistant Resident Engineer – Tunnel

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder or 10 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 4/6 years (degree/ diploma) experience of construction/ supervision of tunnel in Railway/highway Infrastructure projects or of eligible works.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

20. Assistant Resident Engineer – Bridge

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder or 10 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 4/6 years (degree/ diploma) experience of construction/ supervision of RCC, steel and Pre- stressed concrete Bridges and other Civil Engineering structures with pile foundation/ open foundation in Railway Infrastructure projects or of eligible works.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts/ supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

21. Assistant Resident Engineer – Drawing and Design (S&T)

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electronics/ Electrical Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired IRSSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 7 years for Graduate Engineers or 10 years for Diploma Engineers in designing Railway Signalling</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 4 year (for Graduates) & 6 years (for Diploma holders) shall be with Project Management Consultants or Construction Agency or General Consultant and/ or with Signalling Contractors for RRI/ SSI/ PI and/ or with OEMs of Electronic Interlocking system either individually or combined.</p> <p style="text-align: center;">OR</p> <p>ii) At least 4 years' experience in designing as ASTE (Signal) / ASTE (Design) and above in S&T Department of Railways and/ or as Assistant Manager and above in Signal & Telecommunication Engineering department in RITES/ IRCON/RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined.</p> <p style="text-align: center;">OR</p> <p>iii) At least 2 years' experience in designing as DSTE (Signal) / DSTE (Design) and above in S&T Department of Railways and/ or as Manager and above in Signal & Telecommunication Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined.</p>

Note:

- The proposed person should not be older than 65 years as on deadline for submission of proposals.

22. Assistant Resident Engineer – Signalling & Telecommunication

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electronics/ Electrical Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics / Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired IRSSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 7 years for Graduate Engineers or 10 years for Diploma Engineers in Infrastructure Projects of Railway Signalling</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 4 years (for Graduates) & 6 years (for Diploma holders) shall be with Project Management Consultants or Construction Agency or General Consultant and/ or with Signalling Contractors for RRI/ SSI/ PI either individually or combined.</p> <p style="text-align: center;">OR</p> <p>ii) At least 5 years' experience as ASTE (Signal) and above in S&T Department of Railways and/ or as Assistant Manager and above in Signal & Telecommunication Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation and/or as Site Engineer (S&T) and above in RVNL or similar contract employment in RITES/IRCON either individually or combined.</p> <p style="text-align: center;">OR</p> <p>iii) At least 3 years' experience as DSTE (Signal) and above in S&T Department of Railways and/or as Manager and above in Signal & Telecommunication Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation and/ or as Sr Site Engineer(S&T) and above in RVNL or similar contract employment in RITES/IRCON either individually or combined.</p>

Note:

1. *The proposed person should not be older than 65 years as on deadline for submission of proposals.*

23. Assistant Resident Engineer – Electrical: Drawing and Design

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electrical/ Electronics Engineering OR a combination of any sub stream of basic streams of Electrical/ Electronics Engineering from a recognized University/ Institution.or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired IRSEE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 7 years for Graduate Engineers or 10 years for Diploma Engineers in Infrastructure Projects involving Railway electrification aspects.</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 4 years (for Graduates) & 6 years (for Diploma holders) shall be with Project Management Consultants or Construction Agency or General Consultant and/ or with Electrification Contractors either individually or combined.</p> <p style="text-align: center;">OR</p> <p>ii) At least 4 years' experience in designing as JE (Electrical)/ JE (Design) and above in Electrical Department of Railways and/ or as Sr Executive and above in Electrical Engineering department in RITES/ IRCON/RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined.</p> <p style="text-align: center;">OR</p> <p>iii) At least 2 years' experience in designing as SE(Electrical)/ SE(Design) and above in Electrical Department of Railways and/ or as Assistant Manager and above in Electrical Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined.</p>

Note:

- 1. The proposed person should not be older than 65 years as on deadline for submission of proposals.*

24. Assistant Resident Engineer – Electrical: OHE & General

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electrical/ Electronics Engineering OR a combination of any sub stream of basic streams of Electrical/ Electronics Engineering from a recognized University/ Institution.or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired IRSEE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder or 10 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 4/6 years (degree/ diploma) experience of railway electrification projects</p>

Note:

1. The proposed person should not be older than 65 years as on deadline for submission of proposals.

25. Safety and Health Expert

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential:</p> <p>i) Diploma in Engineering or Graduate in any stream from a recognized Institution.</p> <p>ii) Certification course on Safety for Infrastructure/ construction projects</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7 years.</p> <p>(b) Relevant Experience (post minimum professional qualification): At least 4 years' experience in preparation and implementation of safety and health manuals, ensuring safety at construction sites, conducting safety audits, preparation of safety reports for infrastructure projects. Experience in railway projects will have advantage.</p>

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.*
- However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts/ supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

26. Environmental Expert

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Bachelor's Degree in Environmental Management, Environmental Engineering (b) Preferred: Master's Degree in Environmental Engineering
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder or 5 years for Master's degree holder. (b) Relevant Experience (post minimum professional qualification): (i) At least 4/2 years (degree/ Master's degree) experience in environmental management & monitoring in Railway /Highway infrastructure projects or of any eligible works.

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts/ supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

27. Assistant Resident Engineer – QA/QC (Civil)

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired IRSE officer of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder or 10 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 4/6 years (degree/ diploma) experience of Supervisor and above in Quality Assurance & Quality Control in construction of Railway infrastructure projects or of any eligible works.</p>

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.*
- However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

28. Assistant Resident Engineer – QS and Billing

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Diploma in Civil Engineering from a recognized Institution or equivalent. (b) Preferred: Graduate Degree in Civil Engineering from a recognized institution or equivalent
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder or 10 years for diploma holder. (b) Relevant Experience (post minimum professional qualification): (i) At least 4/6 years (degree/ diploma) experience of preparation of detailed Estimate of project components, billing, budgeting & cost controlling of Railway Infrastructure projects or of any eligible works.

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts/ supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

29. Assistant Resident Engineer – IT Systems

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Graduate Degree in Computer Science & Engineering/ Information Technology from a recognized Institution or equivalent. (b) Preferred: Certification in Database management, ERP systems or related fields
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 7 years for degree holder (b) Relevant Experience (post minimum professional qualification): (i) At least 4 years' experience of working on integration of IT systems in large scale environment, database design and management systems and other similar works preferably in infrastructure projects

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

30. R&R/Social Expert

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Graduate Bachelor's degree in Social Sciences or other related fields from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Post-Graduate Degree in Social Sciences from a recognized institution or equivalent</p> <p>ii) Certification in Social Science Programmes</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 10 years for post-graduate degree holder or 12 years for graduate degree holder.</p> <p>(b) Relevant Experience (post minimum professional qualification): At least 7 years of experience in preparation of social impact assessment, planning/implementation of resettlement and rehabilitation activities under infrastructure development projects. Should have knowledge of implementation of resettlement and rehabilitation programmes as per the provisions of Right to Fair Compensation and Transparency in Land Acquisitions, Rehabilitation and Resettlement Act, 2013 through periodic monitoring. Also, should possess knowledge of national and State guidelines, policies, and Acts on land acquisition, rehabilitation and resettlement. Experience in monitoring of social safeguards requirements and implementation of gender action plans under bilateral donor agencies or multi-lateral development banks funded infrastructure projects; preferably familiar with AIIB social safeguards requirements.</p> <p>Those having experience in Metro /Railway Projects will be preferred.</p> <p>Should have ability to communicate and work effectively with local communities, contractors and concerned government agencies.</p> <p>Preference will be given to those having experience of MDB financed projects.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors

(except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

31. Supervisor – Civil/ Design

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Graduate Degree in Civil Engineering from a recognized institution (b) Preferred: Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 4 years for Graduate (b) Relevant Experience (post minimum professional qualification): At least 2 years' experience of design involving earthworks, bridges, tunnels, Station buildings, earth retaining structures etc in railway infrastructure projects or any eligible work

Note:

- 1. The proposed person should not be older than 50 years as on deadline for submission of proposals.*
- 2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total*

32. Supervisor – Planning and Contracts

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p> <p>(ii) Certification in Project Management/ Construction Management from a recognized institution.</p> <p>(iii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4/7 years' experience for Degree/ Diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (Degree/ Diploma) of experience of preparation of procurement strategy, tender documents, bid process management, managing contracts of infrastructure projects of railways or highways or of any eligible works.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

33. Supervisor – Permanent Way

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering or equivalent</p> <p>(b) Preferred:</p> <p>(i) Degree in Civil Engineering</p> <p>(ii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (Degree/ Diploma) of track laying in construction of Railway Lines or Track Renewals or track maintenance in rail infrastructure projects or in any eligible works.</p> <p>(ii) Preference shall be given to the person having experience in supervision of Mechanized Track Linking</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

34. Executive-Finance

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Graduation in any discipline or equivalent</p> <p>(b) Preferred:</p> <p>(i) Graduation in Commerce</p> <p>(ii) Master's Degree in Finance</p> <p>(iii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2 years of experience of end to end financial planning/ monitoring/ management, preparation of financial statements, project expenditure control in railway/ highway infrastructure projects or of any eligible works</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

35. Supervisor – Civil for Project Site

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p> <p>(ii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (degree/ diploma) experience of construction/ supervision of Railway Infrastructure projects or of any eligible works.</p> <p>(ii) Preference shall be given to person worked in DFCC/RVNL Projects</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

36. Supervisor – Tunnel

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p> <p>(ii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (degree/ diploma) experience of construction/ supervision of tunnel in Infrastructure projects of railway line or highway or of eligible works.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

37. Supervisor– Bridge

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p> <p>(ii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (degree/ diploma) experience of construction/ supervision of RCC, steel and Pre- stressed concrete Bridges and other Civil Engineering structures with pile foundation/open foundation in Railway Infrastructure projects</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

38. Supervisor – Drawing and Design (S&T) Engineer

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electronics and communication/ Electronics/ Electrical Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics and communication /Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired Signalling official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 4 years for Graduate Engineers or 7 years for Diploma Engineers in designing Railway Signalling</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 2 years (for Graduates) & 4 years (for Diploma holders) experience shall be with Project Management Consultants or General Consultant or Construction Agency and/ or with Signalling Contractors for RRI/ SSI/ PI and/ or with OEMs of Electronic Interlocking system either individually or combined.</p> <p style="text-align: center;">OR</p> <p>ii) At least 2 years' experience in designing as JE (Signal) / JE (Design) and above in S&T Department of Railways and/ or as Sr Executive and above in Signal & Telecommunication Engineering department in RITES/ IRCON/RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined.</p> <p style="text-align: center;">OR</p> <p>iii) At least 2 year experience in designing as SE(Signal) / SE(Design) and above in S&T Department of Railways and/ or as Assistant Manager and above in Signal & Telecommunication Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined.</p>

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.

2. *However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

39. Supervisor – Signalling

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electronics/ Electrical Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired Signalling official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 4 years for Graduate Engineers or 7 years for Diploma Engineers in Infrastructure Projects of Railway Signalling</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 2 years (for Graduates) & 4 years (for Diploma holders) shall be with Project Management Consultants or Construction Agency or General Consultant and/ or with Signalling Contractors for RRI/ SSI/ PI either individually or combined.</p> <p style="text-align: center;">OR</p> <p>ii) At least 3 years' experience as JE (Signal) and above in S&T Department of Railways and/ or as Sr Executive and above in Signal & Telecommunication Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation and/ or as Site Engineer (S&T) and above in RVNL or similar contract employment in RITES/IRCON either individually or combined.</p> <p style="text-align: center;">OR</p> <p>iii) At least 2 years' experience as SE (Signal) and above in S&T Department of Railways and/ or as Assistant Manager and above in Signal & Telecommunication Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation and/ or as Sr Site Engineer(S&T) and above in RVNL or similar contract employment in RITES/IRCON either individually or combined.</p>

Note:

1. *The proposed person should not be older than 50 years as on deadline for submission of proposals.*
2. *However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

40. Supervisor – Telecommunication

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electronics and communication/ Electronics/Electrical Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics and communication /Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired Telecommunication official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 4 years for Graduate Engineers or 7 years for Diploma Engineers Infrastructure Projects of Railway Telecommunication</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 2 years (for Graduates) & 4 years (for Diploma holders) shall be with Project Management Consultants or General Consultant and/ or with Telecommunication Contractors individually or combined.</p> <p style="text-align: center;">OR</p> <p>ii) At least 3 years' experience as JE (Telecom) and above in S&T Department of Railways and/ or as Sr Executive and above in Signal & Telecommunication Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation and/or as Site Engineer (S&T) and above in RVNL or similar contract employment in RITES/IRCON either individually or combined.</p> <p style="text-align: center;">OR</p> <p>iii) At least 2 years' experience as SE (Telecom) and above in S&T Department of Railways and/or as Assistant Manager and above in Signal & Telecommunication Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation and/ or as Sr Site Engineer(S&T) and above in RVNL or similar contract employment in RITES/ IRCON either individually or combined.</p>

Note:

1. *The proposed person should not be older than 50 years as on deadline for submission of proposals.*
2. *However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

41. Supervisor – Electrical: Drawing and Design

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electrical/ Electronics Engineering OR a combination of any sub stream of basic streams of Electrical/ Electronics Engineering from a recognized University/ Institution.or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired Electrical official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>a) Total Professional Experience (post minimum professional qualification): At least 4 years for Graduate Engineers or 7 years for Diploma Engineers in Infrastructure Projects involving Railway electrification aspects.</p> <p>b) Relevant Experience (post minimum professional qualification):</p> <p>i) At least 2 years (for Graduates) & 4 years (for Diploma holders) experience shall be with Project Management Consultant or General Consultant and/ or with Electrification Contractors either individually or combined.</p> <p style="text-align: center;">OR</p> <p>ii) At least 3 years' experience in designing as JE (Electrical) / JE (Design) and above in Electrical Department of Railways and/ or as Sr Executive and above in Electrical Engineering department in RITES/ IRCON/RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined.</p> <p style="text-align: center;">OR</p> <p>iii) At least 2 years' experience in designing as SE(Electrical) / SE(Design) and above in Electrical Department of Railways and/ or as Assistant Manager and above in Electrical Engineering department in RITES/ IRCON/ RVNL or equivalent grade in Konkan Railway/ MRVC/ DFCCIL/ any Metro Rail Corporation either individually or combined.</p>

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.

2. *However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

42. Supervisor – Electrical: General

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electrical/ Electronics Engineering OR a combination of any sub stream of basic streams of Electrical/ Electronics Engineering from a recognized University/ Institution.or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired Electrical official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (degree/ diploma) experience of maintenance or construction of Electrical works for building/ sub-station/ distribution system including all its aspects in Infrastructure projects of railway line or highway projects or of any eligible works.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

43. Supervisor – Electrical: OHE

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Electrical/ Electronics Engineering OR a combination of any sub stream of basic streams of Electrical/ Electronics Engineering from a recognized University/ Institution.or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Degree in Electronics/ Electrical Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired Electrical official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience: At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (degree/ diploma) experience in maintenance / construction of OHE & PSI works of Railway Electrification including all its aspects in Infrastructure projects of railway line or of any eligible works.</p>

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.*
- However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

44. Assistant – Safety and Health expert

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Diploma in any stream. (b) Preferred: Certification course on Safety for Infrastructure/ construction projects.
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 4 years (b) Relevant Experience (post minimum professional qualification): (i) At least 2 years' experience in supervision of safety works in infrastructure projects. (ii) Preference will be given to person with experience in Railway projects

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.*
- However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

45. Assistant-Environmental expert

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Diploma in Environmental Management, Environmental Engineering (b) Preferred: (i) Bachelor's Degree in Environmental Engineering
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder. (b) Relevant Experience (post minimum professional qualification): At least 2/4 years (degree/ diploma) experience in environmental management & monitoring in infrastructure projects of railway or highway or of any eligible works.

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.*
- However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

46. Supervisor - QA/QC (Civil)

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (degree/ diploma) experience of Supervisor and above in Quality assurance and quality Control in construction of Railway infrastructure projects or of any eligible works.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

47. Supervisor – QS and Billing

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent</p> <p>ii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (degree/ diploma) experience of preparation of detailed Estimate of project components, billing, budgeting & cost controlling of Railway Infrastructure projects or of any eligible works.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

48. Surveyor

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Civil Engineering from a recognised institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Civil Engineering from a recognized institution or equivalent.</p> <p>(ii) Retired/ Voluntary retired Engineering official of Indian Railway or equivalent to similar experience in other countries</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 years (degree/ diploma) experience of Surveyor in Construction of Rail/ Road Projects of railway line or highway or of any eligible works.</p>

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.*
- However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

49. Supervisor – IT Systems

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Computer Science & Engineering/ Information Technology from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Graduate Degree in Computer Science & Engineering/ Information Technology from a recognized institution or equivalent</p> <p>ii) Certification in Database management, ERP systems or related fields</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for degree holder or 7 years for diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification):</p> <p>(i) At least 2/4 (degree/ diploma) experience of working on integration of IT systems in large scale environment, database design and management systems and other similar works preferably in Infrastructure projects.</p>

Note:

1. The proposed person should not be older than 50 years as on deadline for submission of proposals.
2. However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.

50. Assistant – R&R/ Social Expert

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Graduate Bachelor’s degree in Social Sciences or other related fields from a recognized Institution or equivalent.</p> <p>(b) Preferred:</p> <p>(i) Post-Graduate Degree in Social Sciences or other relevant field from a recognized institution or equivalent</p> <p>ii) Certification in Social Science Programmes</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 7 years.</p> <p>(b) Relevant Experience (post minimum professional qualification): At least 4 years of experience in preparation of social impact assessment, planning/ implementation of resettlement and rehabilitation activities under infrastructure development projects. Should have knowledge of implementation of resettlement and rehabilitation programmes as per the provisions of Right to Fair Compensation and Transparency in Land Acquisitions, Rehabilitation and Resettlement Act, 2013 through periodic monitoring. Also, should possess knowledge of national and State guidelines, policies, and Acts on land acquisition, rehabilitation and resettlement. Experience in monitoring of social safeguards requirements and implementation of gender action plans under bilateral donor agencies or multi-lateral development banks funded infrastructure projects; preferably familiar with AIIB social safeguards requirements.</p> <p>Those having experience in Metro /Railway Projects will be preferred. Should have ability to communicate and work effectively with local communities, contractors and concerned government agencies.</p>

Note:

- The proposed person should not be older than 50 years as on deadline for submission of proposals.*
- However in exceptional circumstances Employer may permit at his sole discretion, a person older than 50 years but not older than 65 years after considering his physical and overall fitness to perform the desired duties subject to the condition that the total number of experts / supervisors (except S&T, Signal Design, P. Way, Environment & Electrical (OHE/TSS/SCADA) Experts) more than 50 years of age should not be more than 50% of the total.*

51. Support Staff - Computer Operator cum Stenographer

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: (i) Graduation in any discipline or equivalent (ii) Certification course in computer applications.
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 4 years for Graduate degree holder (b) Relevant Experience (post minimum professional qualification): At least 2 years' experience in shorthand of correspondence, reports, and other related material. Should have knowledge of MS Office, Internet, Mail Drafting, Typing. Those having experience in Railway/Metro Projects will be preferred.

Note:

1. *The proposed person should not be older than 40 years as on deadline for submission of proposals.*

52. Support Staff - Multi Skilled assistant cum Clerk/ Record/ Storekeeper

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Graduation in any discipline or equivalent.
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 4 years for Graduate degree holder</p> <p>(b) Relevant Experience (post minimum professional qualification): At least 2 years (Degree/ Diploma) experience in clerical and administrative duties. Should have knowledge of Internet, Calling, Mail Drafting, Typing.</p> <p>Preference will be given to those having experience in Railway/ Metro Projects.</p>

Note:

1. *The proposed person should not be older than 40 years as on deadline for submission of proposals.*

53. Support Staff - Office Attendant

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: 10 th standard.
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 2 years as office boy/office Attendant

Note:

- The proposed person should not be older than 40 years as on deadline for submission of proposals.*

54. Support Staff - Draftsman / CAD Operator

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	<p>(a) Essential: Diploma in Engineering/ Architecture or other related field from a recognized Institution or equivalent.</p> <p>(b) Preferred: Graduate Degree in Engineering/ Architecture or other related field from a recognized institution or equivalent</p>
2.	Length of Experience	<p>(a) Total Professional Experience (post minimum professional qualification): At least 2 years for Graduate degree holder or 4 years for Diploma holder.</p> <p>(b) Relevant Experience (post minimum professional qualification): At least 1/2 years (Degree/ Diploma) experience in preparation of technical drawings. Should have knowledge of AutoCAD. Those having experience in Railway/ Metro Projects will be preferred.</p>

Note:

- The proposed person should not be older than 40 years as on deadline for submission of proposals.

55. Support Staff – Accountant

S No.	Qualification Parameters	Requirement as per RFP
1.	Professional Qualification	(a) Essential: Graduation in any discipline or equivalent
2.	Length of Experience	(a) Total Professional Experience (post minimum professional qualification): At least 4 years for Graduate (b) Relevant Experience (post minimum professional qualification): At least 2 years' experience in preparation of Accounts & tax returns, Financial Audits, Budgeting, reports, payroll, financial reporting, and maintaining financial controls. Those having experience in Railway/Metro Projects will be preferred.

Note:

1. The proposed person should not be older than 40 years as on deadline for submission of proposals.

Important Notes for Annexure-3:

- ❖ The Project Director/Team Leader of the GC shall act as 'Engineer' on behalf of the Employer and exercise such authority as may be delegated by the Employer for day to day working.
- ❖ Project Director may further allocate and delegate such authority, as may be necessary for effective management of the Consultancy, to other Personnel in the GC's organization such as Deputy Project Director, Resident Engineer, etc.
- ❖ The Engineer will be required to obtain the specific approval of the Employer in the matters as specified in construction Contract Agreement.
- ❖ All communication from the GC shall be carried out by the Project Director or such Personnel who have been delegated the requisite authority.
- ❖ One copy of all correspondences emanating from the GC addressed to other than the Employer shall invariably be marked to Employer.
- ❖ If any of the above personnel have any history of involvement in vigilance/ CBI/ SPE/ Police case resulting in major penalty punishment of removal/ dismissal/compulsory retirement or conviction, then that personnel shall be disqualified and his CV shall be assigned zero marks.
- ❖ Employer has the authority to replace any specialist not suitable for the position.

ANNEXURE 4 - Office facilities for the Engineer (GC)

For Gurugram Office for CMT of GC

Necessary sitting space and office furniture shall be provided by the Employer in HRIDC Gurugram office. The GC consultant shall share the office space of the Employer.

OR

HRIDC Gurugram will take on rent required space near its office location for GC Consultant and shall provide necessary sitting space and office furniture.

For Site Office(s) for FMT of GC and Employer

The Work's Contractor shall provide necessary sitting space and office furniture for the Employer and GC consultant for their proper functioning.

The Contractor (Work's Contractor) shall provide for the use of the Employer and GC office accommodation, office furniture, communication (WiFi/ Internet connection in office premises) throughout the course of the work and for such period of time during the defects liability period as the Employer & Engineer may require, as deemed necessary. All the facilities under this clause will continue to be maintained by the Work's Contractor free of cost till the defect liability period is over.

NOTE:

It is clearly understood that the Employer shall not provide any transport facility, office equipment, stationery items to the GC. The items such as Desktop/ Laptop, Plotter, toner and other day-to day items shall be procured by GC. Hence, the Bidder should include such expenses in the fixed cost component.