



ರೈಲು ಮೂಲಸೌಲಭ್ಯ ಅಭಿವೃದ್ಧಿ ಕಂಪನಿ (ಕರ್ನಾಟಕ) ನಿಯಮಿತ

ರೇಲ ಇನ್‌ಫ್ರಾಸ್ಟ್ರಕ್ಚರ್ ಡೆವಲಪ್‌ಮೆಂಟ್ ಕಂಪನಿ (ಕರ್ನಾಟಕ) ಲಿಮಿಟೆಡ್

Rail Infrastructure Development Company (Karnataka) Limited

K-RIDE

(A Joint Venture of Govt. of Karnataka and Ministry of Railways)

BID DOCUMENT

NAME OF WORK

TENDER PACKAGE C-1A

“Design and Construction of Elevated Viaduct of Length 14.213 Km (Chainage -0/724 to 11/280 & 14/697 to 16/906, including Ramp), At-Grade formation of Length 3.417 Km (Chainage 11/280 to 14/697), construction of 7 Stations building (At Grade – 02, Elevated – 05), 1 ROB and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project.

**Part 4: FINANCIAL BID & BILL OF QUANTITIES
SECTION 12: PRICING**

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SECTION 12: PRICE SCHEDULES (FINANCIAL BID)

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**BANGALORE SUBURBAN RAIL PROJECT (BSRP)
PRICE SCHEDULES (FINANCIAL BID)**

Name of Work:

“Design and Construction of Elevated Viaduct of Length 14.213 Km (Chainage -0/724 to 11/280 & 14/697 to 16/906, including Ramp), At-Grade formation of Length 3.417 Km (Chainage 11/280 to 14/697), construction of 7 Stations building (At Grade – 02, Elevated – 05), 1 ROB and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project.

PREAMBLE

1. **General Requirement.**

1. The Price Schedule shall be read in conjunction with the Instructions to Tenderers, Conditions of Contract & Special Conditions of Contract, Particular Conditions, Contract Data, Notice Inviting Tender, Employer's requirement VII A -Volume-1, 2 and 3, Scope of work, Technical Specifications, Tender Drawings, Schedule, Annexure and Addendums.
2. The Price Schedule / Bill of quantities consists of **Six schedules** as shown below:
 - i. **Schedule 'A'**: Consists of Lump sum Cost and shall include Design and Construction of Elevated Viaduct of Length 14.213 Km and other Associated Works between KSR Bengaluru City and Yelahanka of Corridor – 1A of Bangalore Suburban Railway Project (BSRP).
 - ii. **Schedule 'B'**: Consists of Lump sum Cost and shall include Design and Construction of At-Grade Formation of Length 3.417 Km and other Associated Works between KSR Bengaluru City and Yelahanka of Corridor – 1A of Bangalore Suburban Railway Project (BSRP).
 - iii. **Schedule 'C'**: Consists of Lump sum Cost and shall include Design and Construction of Special spans by Composite steel Girder (7 No), Open Web Girder (3 Nos), Balanced cantilever Box Girder (4 Nos) method for Railway Crossings / All other crossings including the adjacent spans and other associated works between KSR Bengaluru City and Yelahanka of Corridor – 1A of Bangalore Suburban Railway Project (BSRP).
 - iv. **Schedule 'D'**: Consists of Lump sum Cost and shall include Design and Construction of all Civil, Structural including roof, roof sheeting, Entry / Exit structures, FOB, for all (5) Elevated & (2) At-Grade stations including provision for Solar Panel installation.

The cost of the works / activities pertaining to the Utilities which are required to be retained and or protected during execution of Works shall be deemed to be included in this Schedule 'A', 'B' 'C' & 'D'. The cost of the construction of road for traffic diversions and construction of roads within the

station boundary limit, General / Ancillary works associated with construction of viaduct and stations viz. Barricading, Traffic diversion / management, Median development, Geotechnical works, etc. along the Viaduct and in Station premises shall be deemed to be included in this Schedule 'A', 'B' 'C' & 'D. The work under part Schedule 'A', 'B' 'C' & 'D' above is on Lump sum basis.

v. **Schedule E: (Item Rate Component – Architectural Finishes, Façade, PHE, and E&M works)**

- Consists of BOQ for item rate for Design & Construction of all:

- **Schedule `E1`:** Detailed Design & Engineering of all Architectural finishes, Façade works, PHE and E&M works.
- **Schedule `E2`:** Architectural works (Front of House (FoH) and Back of House (BoH)) in public and non-public areas which includes Concourse, Platform, Foot over Bridge (FoB), Entry/Exit, plaza area, system rooms; masonry/block work walls, mullions, tie beams, lintels, plastering etc, as approved by the Employer. Façade works include the required supporting structural elements as approved by the Employer. The Design & Construction Works shall be carried out as described in the Tender Documents / BOQ.
- PHE works as approved by the Employer. The Design & Construction Works shall be carried out as described in the Tender Documents / BOQ.
- **Schedule `E3`:** Electrical and Mechanical (E&M) works, as approved by the Employer. The Design & Construction Works shall be carried out as described in the Tender Documents / BOQ.
- **Schedule `E4`:** Multi Modal Integration (MMI) Works to be executed under Common SR for year 2023-24 or Latest published by KPWD. Whenever KPWD items are not available, the other department items of IR-USSOR / CPWD / BESCO / KPTCL / BWSSB shall be considered as per sequence of priority and with the approval from Employer.

vi. **Schedule `F`:** Consists of

Incidental / unforeseen works associated with operation of above schedules and consists of Lump sum provision for incidental and unforeseen items likely to occur during the execution of work. These items of **Schedule F** will be executed under schedule of rates 2023-24 or latest published by KPWD. The cost under this Schedule stands fixed as ₹ 20,00,00,000/- (Rupees Twenty Crores) and this amount is provided as fixed amount in the summary of Financial Bid / Price Schedule. Whenever KPWD items are not available, the other department items of IR-USSOR / CPWD / BESCO / KPTCL / BWSSB) shall be considered as per sequence of priority and with the approval from Employer.

3. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders (ITB), Work's Requirement, Conditions of Contract, Notice Inviting Tender, Technical & Particular Specifications, Tender Drawings, Annexures and Addendums.
4. The amount for various Schedules and Summary of Price Schedule shall be quoted in Indian Rupees both in figures and in words.
5. The whole cost of complying with all the provisions of the Contract is deemed to have been included in the quoted amount.
6. All columns in the "Summary of Price Schedule" and the total tender amount shown in the bottom shall be filled in figures and words as per the procedure mentioned in e-procurement portal. The person authorized to sign on behalf of the Tenderers shall sign in full at bottom of all pages and at the end of the schedule.
7. General directions and description of works and materials are neither repeated nor summarized in the Price Schedule. They are deemed to have been covered or described elsewhere in the Bid Document or implied as good Engineering & Construction Practices adopted for similar works.

8. The method of measurement of works regulating the interim payment, wherever applicable, shall be in accordance with the requirements as stated in the individual sections of the Technical Specifications and Conditions of Contract.
9. The Tenderer may please note that, to perform this contract, nothing extra will be payable on account of field constraints, availability of front (except for the provisions made elsewhere in the Bid Document), preparation of detailed scheme, for taking necessary clearances and approvals from all the concerned authorities / local bodies etc. The quoted value shall include the cost of all these items / aspects.
10. **The Tenderer's offer shall be inclusive of all taxes and duties payable by them, labour cess and any other cess, levies etc except of GST.** GST, Income Tax, and any other statutory taxes to be deducted at source, if any, will be deducted by the Employer in accordance with the Income Tax Act and any other acts in force and in accordance with instructions issued by the Authorities on this behalf, from time to time.
11. The Engineer may, in any payment certificate, make any correction or modification that should have been reflected in any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Employer's/Engineer's acceptance, approval, consent or notice of no-objection to any of the documents of the contractor or to (any part of) the works.
12. Any Works (the Permanent Works and the Temporary Works) in accordance with the Contract shall be deemed to be included in the Price schedule, unless indicated otherwise. It is the Contractor's obligation to meet the Conditions of Contract and carry out the works as defined in the scope and in accordance with the design, drawings, technical, and material and workmanship specifications to become eligible for payments under the Contract.
13. Demolition of existing structures shall be carried out without making any damage to adjacent structures, utilities and with all safety measures. It will be deemed to include cost of all plants, labour, supervision, materials, transport, all temporary works, erection, maintenance, utility identification, contractor's profit and establishment / overheads, together with preparation of design and drawings, all general risks, insurance liabilities, compliance of labour laws, taxes and duties, and obligations set out or implied in the contract.
14. All the amounts should be filled both in figures and in words. In case of any discrepancy between the two, the value provided in words shall be treated as sacrosanct.
15. The Contractor may raise their 'On Account' bills on a monthly basis as per the status of work on the last day of the respective month.
16. The bidder should ensure that the financial / commercial quote should be only quoted in the Commercial bid option on e-tender portal of K-RIDE & nowhere else. If by mistake/ inadvertently the amount is quoted/ indicated anywhere in the technical submission / uploading of the entire Bid document/ Corrigendum / Addendum, the bid will be rejected outright and will not be considered for any further evaluation.
17. Errors will be corrected by the Employer for any arithmetical errors in computation or summation as indicated in the Contract Document.
18. Geo technical data provided in the tender document is an indicative only for Bidding purpose. The successful Bidder has to carry out the Geo-Technical Investigations to perform this contract.
19. If work is stopped due to utilities, no claim shall be entertained on this account.
20. The rate quoted by the bidder shall be inclusive of all taxes, duties etc except GST as per the prevailing rate at the base date (i.e. 28 days prior to the final date of submission of bid). Any changes in the rate of GST or any other taxes during the execution of the work shall be adjusted both ways.

21. **Schedule of Payments**

The Schedule of Payments 'A', 'B', 'C' & 'D' will not be modified. The percentages stipulated in Schedule of Payments 'A', 'B', 'C' & 'D' and 'A', 'B', 'C' & 'D' of Pricing Document may be sub-divided upon award of the Contract with the approval of the Engineer / Employer, and his decision in this regard shall be final and binding.

Schedule of Payment for item rate component of works (i.e. for Schedule 'E'): BOQ for Detailed Design & Construction of Architectural finishes, Façade works, PHE and E&M works (i.e., for Schedules E):

The payment shall be governed based on the actual works executed. Payments against the works will be made on the basis of quantities actually executed, measured and certified by the Engineer.

Rates payable will be percentage above or below or at par or as quoted by the Tenderer against respective Schedule.

22. **Utility Diversions:**

The Contractor shall be responsible for getting approval including cost estimates, co-ordination and supervision of execution of works pertaining to relocation/ shifting / removal of Utilities, through respective Utility owning agencies, as per the Employer's Requirements and in accordance with the Contract.

The payment for these Utility Diversions will be made under **Schedule "F"** after certification of Utility diversion works by the Engineer / Employer. The Contractor shall be fully responsible for co-ordination, monitoring and supervision of works to be carried out by the utility owning agencies or their authorized contractors/ subcontractors pertaining to utility diversion.

Any delay in completion of works pertaining to these Utility Diversions shall not relieve the Contractor's obligation and it shall be at Contractor's own risk and cost. Such delayed time and risk cost / prices are deemed to be included in Schedule 'A', 'B', 'C' & 'D'.

We hereby confirm that the quoted prices in the Schedule of Payments are fully compliant to all the Tender Document requirements, without any deviations.

Signature of the Authorized Signatory of the Tenderer

Important Notes:

- A. The Tenderer should quote their amount (Lumpsum) against Schedule-A Schedule-B, Schedule-C and Schedule-D of Price Schedule in e-Procurement Portal.
- B. The Tenderer should quote the amount or percentage above / below / at Par of amount in Schedule 'E1', 'E2' & 'E3' of Price Schedule.
- C. The cost under **Schedule - 'E4' and Schedule 'F'** stands fixed as ₹.15,00,00,000 and ₹. 20,00,00, 000 /- respectively inclusive of all taxes, duties, royalties, cess except GST and this amount is provided as a fixed amount in the summary of Financial Bid / Price Schedule.
- D. The total value of the Tender quoted by the Tenderer shall be computed based on the total amount quoted in Schedule - A, B, C, D and Schedule-E duly adding the fixed amount of Schedule 'F' to the total amount.

- E. The quoted value covers all items of the work as detailed in the "Employer's Requirement" contained in Section VII (Vol 1, Vol 2, Vol 3 and Vol 4 along with Annexures) as well as conforming to all General Conditions of Contract in Section VIII, Particular Conditions of Contract in Section IX, SHE requirements in Section XI and all other stipulations laid down in the Bid Document in every other Section including all addenda / corrigenda thereof till the date of submission of Bids.
- F. The quoted value is inclusive of all costs of Designs, Drawings, Reports, Surveys, Site Facilities, Construction, Equipment, Plants, Instruments, Labour, Supervision, Casting Yard Facilities, Launching Girders, Materials, Erection, Testing, Maintenance, Temporary Works, Site Office, Site Access, Safety, Security, Defect Rectification till the end of DLP, Insurance, Profit, Duties, GST, Taxes, Levies, Royalties as per applicable law together with all associated risks etc., and all other liabilities and obligations set out or implied in all the sections of the contract and including remedy of any defects during the Defect Liability Period.
- G. The employer reserves the right to omit / offload / partially execute any items in any of the Schedules during construction without any liability to either party.

2. EXPLANATORY NOTES FOR E&M 'BILL OF QUANTITIES' (BOQ)

2.1 General

- 2.1.1 The Contract includes the following but is not limited to:
The revision of design, verification of site data, drawings, programs for execution, schedule of ordering, schedule of receipt.
- 2.1.2 The procurement of the whole equipment including:
a) Spare parts,
b) Tools, testing equipment,
- 2.1.3 The on-site erection and setting to work of the electrical fixed installations and technical buildings described in the Technical Specification.
- 2.1.4 The in-plant testing, and acceptance tests.
- 2.1.5 The on-site testing.
- 2.1.6 The commissioning of installation and acceptance protocols.
- 2.1.7 The supply of relevant documentation mainly including:
a) Installation, execution, and as-built drawings,
b) Test procedures,
c) Maintenance operation manuals: The Contractor is required to submit soft copies of all the documents,
- 2.1.8 Training in India and Overseas (if required).

2.2 Procurement Program

The procurement of the material shall be planned in a phased manner such that the material reaches site in time. The Contractor shall submit a detailed works program as per the provisions of the General Specification and Technical Specification and obtain approval from the Engineer before commencing with the procurement of material.

2.3 Tender Prices

The Tenderer's attention is drawn to the following facts while quoting the prices for the Contract:

- 2.3.1 The prices (including percentage above or below or at par) quoted in the Bill of Quantities shall be inclusive of all applicable duties and any other charges leviable except GST payable.

A BOCW cess at the rate as specified by 'The Building and Other Construction Workers Welfare Cess Act, 1996, of the Total Bill Amount shall be deducted from each Interim Payment Certificate (IPC) of the Contractor.

2.3.2 The prices (including percentage above or below or at par) quoted in the Bill of Quantities and accepted by the Employer shall be 'fixed' throughout the Contract Period and are not subject to variation on any account except for the equipment and cables listed in clause 2.10 of this document. For these items, price variation will be applicable as per IEEMA formula. The Prices quoted for "Installation, Testing & Commissioning works" are subject to Price variation in accordance with clause 2.10 of this document.

2.3.3 **Deleted.**

2.3.4 **Deleted.**

2.3.5 **Deleted.**

2.3.6 **Record of Taxes & Duties**

The Contractor shall maintain complete records in respect of payments made by them for taxes and duties payable to various authorities (except Income Tax or Corporate Tax) and advise the Employer the summary of such payment every month in a format advised by the Employer during execution of the contract.

The detailed records shall however remain open for inspection by the Employer/ Engineer at any time and copies of the records shall be furnished as required by the Employer.

The amount payable/recoverable from the Contractor will generally be calculated based on these records along with supporting documents. However, Employer at his sole discretion, if not satisfied with the veracity of records or records are incomplete or otherwise, may separately determine the amount payable/recoverable from the contractor in accordance with the conditions of the Tender, which shall be final and binding.

The Contractor shall also maintain records of the imported components supplied to local manufacturers and actual utilization of the same in the manufacture of complete equipment. The Contractor shall be fully responsible for any loss or misuse of these components in manufacture of equipment's.

The contractor shall submit the copies of the monthly returns filed, once in three (3) months to ascertain the status of GST refunded claimed on account of inverted duty structure.

The Contractor shall furnish along with the 2nd and subsequent IPCs copies of all the purchases of Goods and Services made within the State of Karnataka in the format prescribed and furnish the details to the Employer, if any required, for claiming reimbursement of state taxes from the Govt. of Karnataka as per approved funding pattern for the project.

2.3.7 **Statutory Clearance**

The Contractor shall be solely responsible for discharging all the statutory payments to the authorities concerned including custom duty, IGST, GST and Income tax, etc.

2.3.8 **Deleted**

2.3.9 **Deleted**

2.4 Quantities

2.4.1 For the purpose of this Contract, all unit quantities given in the Bills of Quantities and in tender drawings are the estimated quantities (Tentative) of the Works and are intended in the first instance to provide a common basis for Tendering and Tender Evaluation. Quantities may vary as per the site conditions and actual quantity to be procured after preparation of shop drawings and approval of the same. When a Contract has been entered into, the function of the Priced Bill of Quantities is to provide for the valuation of the work executed. No alteration of any rate or price shall be allowed on account of any difference between the quantities billed and the actual quantities measured from the drawings.

- 2.4.2 The Tenderer shall make himself completely acquainted with all conditions, obligations, specifications, drawings, etc.; of the Tender Documents before quoting his prices. He shall have no right to claim any price revision on the basis of ignorance of the Tender Documents or local conditions, or to make any claims as regards the integrity of the unit prices of the Bill of Quantities.

2.5 Units and Currency

- 2.5.1 All sizes and quantities entered in the Bills of Quantities are in metric units.
- 2.5.2 The currency to be used in the Contract will be Indian Rupees only. The Tenderer shall fill in each column with unit rate or lump-sum or percentage as the case may be, for each item of the Bill of Quantity, on the basis of the Tender documents and pre-tender survey. The prices (including percentage above or below or at par) quoted in the Bill of Quantities are for completed and finished items of work and complete in all respects, it is considered to have included all constructional plant, tools, materials, machinery, labour, supervision, fuel, oil, consumables, electric power, water, transportation, all leads and lifts, dewatering, all temporary works, false work, form work, construction of temporary stores and buildings, fencing, watering, lighting, erection, maintenance, night working, inspection facilities, safety measures at worksites, road users overhead charges, labour camps, insurance costs for labour and works, overheads, profits etc.;
- 2.5.3 Any cutting/overwriting/striking off in Bill of Quantities shall be initialled by the authorized representative of the Tenderer before submission of Tender without which it will not be taken into consideration by the Employer.

2.6 Rates & Sums to be for Work Finished Complete

- 2.6.1 Tenderers shall be deemed to have read the Employer's Requirements and other parts of the Tender Documents and reviewed the Drawings to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices and shall be deemed to include the full scope of the Contract, including overheads and profits and shall bear a proper relationship to the cost of carrying out the work described.
- 2.6.2 Notwithstanding any limits that may be implied by the wording of the individual items and/or the explanations in the Preamble, the rates and prices, which are entered in the Bill of Quantities, shall be for the work finished complete in every respect.
- 2.6.3 The Tenderer shall be deemed to have taken full account of all requirements, liabilities, obligations and risks, whether expressed or implied, and to have priced the items accordingly. The Items in the Bills of Quantities are the only items against which payment will be made. The cost of any item of work not specifically described or measured in the Bills of Quantities but required for the execution of the Contract shall be included in the rates and prices for the measured items in the Bills of Quantities. The rates and prices shall therefore include for all incidental and contingent expenses and risks of every kind necessary to supply, install, test and commission (including Integrated Testing and Commissioning) complete, and remedying any defects in the whole of the Works in accordance with the Contract.

2.7 Allowances in Rates and Prices

- 2.7.1 Full allowance shall be made in the prices against the various items in the Bills of Quantities for all costs involved in performing the following except to the extent that work is specifically described and paid for in the Bills of Quantities. The list below is not exhaustive and the Tenderers are expected to take all costs involved while quoting the rates and prices that will not be subject to variation on any account.
- all setting out and final survey work;
 - temporary access roads and bridges, fencing, watching and security, lighting.
 - paying fees (subject to GCC / PCC clauses) and giving notices to Authorities;

- d) payment of all patent rights and royalties;
- e) reinstatement of the Site;
- f) safety precautions and all measures to prevent erosion and suppress fire and other hazards;
- g) interference to the Works by persons, vehicles, and the like being legitimate users of the facilities on or in the vicinity of the Site;
- h) the protection and safety of the Employer trains and services;
- i) the protection and safety of Railway trains and services on adjacent tracks;
- j) supplying, maintaining and removing on completion, the Contractors own accommodation, offices, depots, stores, workshops, transport, welfare services and other facilities including telephones and facsimile machines and all charges in connection therewith;
- k) the supply, inspection, testing, packaging and transportation of materials and of the Works as specified including the provision and use of equipment and arrangements for the Engineer's Inspectors and others;
- l) maintaining public thoroughfares and footpaths, and maintaining access upon existing recognised routes;
- m) providing, transporting to the Site, setting to work, operating (including all fuel and consumable stores), maintaining and removing from the Site upon completion all Construction Plant and Contractor's Equipment necessary for the execution of the Works and including the cost of all tests and other requirements in respect of such; plant and equipment;
- n) working adjacent to or across existing services and installations;
- o) complying with the requirements of the Employer in regard to Safety and Health, Quality Assurance, Environmental and project implementation plans and making periodical submissions;
- p) co-ordination and interference to the Works by the works of Designated Contractors and others employed by the Employer being legitimate users of the facilities on or in the vicinity of the Site;
- q) remedying of defects and shrinkage, and works of amendment, reconstruction, replacement of other faults, fair wear and tear excepted, during Defects Liability Periods;
- r) Insurance, including all risks in supply, erection, storage, transit, third party, Workmen's Compensation and others;
- s) All tools, and equipment required for all tests prior and after delivery and for testing and commissioning installed systems;
- t) Carrying out all modifications to the given drawings, preparing construction detailed drawings and supplying originals, copies, and electronic files in accordance with employer's requirement.
- u) Marine Insurance
- v) All risk Insurance after arrival of goods in India
- w) Custom clearance / Port Clearance (if applicable)
- x) Handling at Port of arrival in India (if applicable)
- y) Inland transportation from port of arrival or manufacturer's works to site of work
- z) Various bank guarantees / warranties/undertakings.

2.8 Tender Pricing

- 2.8.1 The Tenderer shall take regard of the actual site conditions and the estimated quantities entered in the Bill of Quantities. The Tenderer shall price his tender accordingly and the rates and prices entered against a line item shall be the full and only price paid for all work performed against that item except as described in the Tender Documents.
- 2.8.2 Not used.
- 2.8.3 The Tenderer shall quote the rates and prices in words as well as in figures. Any cutting/overwriting in Bill of Quantities shall be initialed by the authorized representative of the Tender.

- 2.8.4 Items against which no rates or prices are indicated in the Bill of Quantities, will not be paid for by Employer when executed and shall be deemed to have been covered in the rates of other item/s and prices in the Bill of Quantities.

2.9 Measurement and Payment

- 2.9.1 This Contract is primarily a re-measure contract with items that are described herein. For the re-measure items, the total price paid for a work item will be varied by the quantities actually performed. The quantities indicated in the BOQ and tender drawings are tentative quantity may vary as per the site conditions and actual quantity to be procured after preparation of shop drawings and approval of the same. The final quantities shall be based on quantities actually executed, measured and certified as per approved built drawings by the Engineer.
- 2.9.2 The measurement and payment described is for the purpose of making a valuation of the work acceptable to the Engineer, and Interim Payments to the Contractor, as work proceeds. All interim payments shall be without prejudice in accordance with relevant clause of GCC and PCC. The Works as executed will be measured for assessment of progress for interim payments in accordance with the method adopted in the relevant standard/Specification, the Bills of Quantities and under the items as set forth notwithstanding any custom to the contrary.
- 2.9.3 Deleted.
- 2.9.4 Notwithstanding anything stated herein, the Engineer retains the right to withhold payment on any pay item due for payment when the works to be performed are not performed or are not carried out to the Engineer's satisfaction in accordance with Specifications and Drawings.
- 2.9.5 Compensation for items shall include for all costs incurred in procurement/manufacture, testing, inspection, shipping, hauling, off-loading, storing at site in Bangalore, installation, testing and commissioning including integrated testing and commissioning.
- 2.9.6 Payment in stages

Payment for items shall include for all costs incurred in procurement/manufacture, testing, inspection, shipping, hauling, off-loading, storing at site in Bangalore, installation, testing and commissioning including integrated testing and commissioning. Prices so assigned in the BOQ, for supply and installation of items of materials, plant and equipment shall be full compensation for supply and installation of items of materials, plant and equipment in accordance with drawings and specifications. Payment towards supply and installation will be made after receipt of items of materials, plant and equipment to the Contractor's depot (in the land provided by the Employer) in Bangalore and storing them in a place and manner approved by the Engineer and submission of the following documents:

- a. 65% payment on supply of materials, 10% of payment for installation, 15% payment on completion of testing & commissioning and balance 10% of payment on completion of testing, commissioning, submission of all test results, other documentation including as-built drawings, manuals, etc. for:
- I. M. V. Switchgear, Distribution Boards.
 - II. Cable trays.
 - III. Indoor & Outdoor Lighting including High Mast.
 - IV. DG sets.
 - V. UPS System.
 - VI. Distribution Cables.
 - VII. HVAC works.
 - VIII. Fire Pumps, Fire Hydrant Pipes.
 - IX. Plumbing Pumps & WTP.
 - X. LAN works.
 - XI. Access control system.
 - XII. Compressed Air system.
 - XIII. Lifts.

- XIV. Hume Pipes, HDPE pipes etc.
- b. 80% payment against supply and installation and balance 20% price so assigned for testing and commissioning of items of materials, plant and equipment when the plant, equipment is tested and commissioned successfully including integrated testing and commissioning and submission of all test results, other documentation including as-built drawings, manuals, etc. as described in the specifications, have been approved by the Engineer.
 - I. Earthing & Lightning Protection System.
 - II. FIRE Alarm including cabling, detectors, panels, RI etc.
 - III. HVAC piping, Cabling & ducting.
 - IV. Fire hydrant system like valves, Hose cabinets etc.
 - V. 32mm,25mm GI conduit & wiring for circuit mains.
 - c. Payment will be made in RA bills as part payments duly certified by the Employer for receipt of materials in good condition and correct quantity.
 - d. Original invoice voucher to be verified by the Employer and copy to be enclosed with RA bills.
 - e. Security & Safety of material brought to the site will be sole responsibility of contractor till the completion of corresponding work and handing over to the Employer.
- 2.9.7 Testing and commissioning shall include for all testing and putting-to-work of all equipment, sub-systems, and systems; re-testing, fault finding, adjustments and reworking as necessary; submittal of all test reports and other documents all to the approval of the Engineer. Payment will be made after certification by the Contractor and acceptance by the Engineer that the sub-systems and systems, including all equipment have successfully completed the test procedures, and have been set-to-work and that all test results and other documentation, as described in the specifications, have been approved by the Engineer.

2.10 Price Variation for E&M Works (Schedule `A` to Schedule `C`)

Prices quoted by the Tenderer shall be fixed throughout the performance of the Contract and not subject to variation on any account except for items indicated in following clause/s.

2.10.1 Price Variation for 'Supply Component'

The following equipment / items shall be subject to price variation as per latest relevant IEEMA circulars, items/equipment's other than the detailed shall not be subjected to price variation clause.

Table 1: Items under Price Variation

Sl.No	Item Description	Reference Documents No.
1.	M V Switchgear and Distribution Board	PART-A A.04, A.02
2.	MV cabling and Busducts	PART-A - A.03
3.	UPS/Battery Charger	PART-A A.08

The price variation for the items listed in the above table shall be payable on the basis of relevant IEEMA formula attached as Annexure -1/ Section 12. Supply component shall be 80%.

2.10.2 Price Variation for 'Labour Component'

Contract price shall be adjusted for increase or decrease in rates and prices for the prices quoted for labour component for "Erection/Installation, testing and commissioning" in accordance with the formula given below:

$$V_L = 0.85 \times 0.20 \times R \times [(L_i - L_o)/L_o]$$

Where;

V_L = Increase or decrease in the cost of work during the month under consideration due to change in rates for local labour.

- Lo= The average consumer price index for industrial workers for Bangalore Centre as applicable for the month of submission of the bid as published by Labour Bureau, Ministry of Labour, GOI.
- Li = The average consumer price index for industrial workers for Bangalore Centre during the 'month under consideration' as published by Labour Bureau, Ministry of Labour, GOI.
- R = Gross value of the work done for 'Installation, Testing and Commissioning Component' of the work under consideration.

Labour Component shall be 20% of work done.

- 2.10.3 For items covered under IEEMA price variation clause, the latest date of delivery for considering price variation shall not be later than 180 (one hundred and eighty) days before the relevant Key Date for commissioning. However, if the price variation calculated as per the actual date of delivery is resulting in a price advantage to the Employer; the actual date of delivery shall be considered for evaluating the price variation. Price variation as per IEEMA formula will be applicable only if the mentioned items are manufactured in INDIA and If any of these items is imported then the price variation will not be applicable on that item.
- 2.10.4 Price variation that may accrue during the period from the date of tender submission will not be considered for Tender evaluation and for deciding inter-se position of the Tenderers.

--- XXX ---



SUMMARY OF PRICE SCHEDULE

(Centre of e-governance has disabled submission of documents pertaining to financial proposal in e-portal. Bidders are requested to enter the Financial Proposal in the respective cell provided in the e-portal. This format of Financial Proposal is only for reference.)

Name of Work:
“Design and Construction of Elevated Viaduct of Length 14.213 Km (Chainage -0/724 to 11/280 & 14/697 to 16/906, including Ramp), At-Grade formation of Length 3.417 Km (Chainage 11/280 to 14/697), construction of 7 Stations building (At Grade – 02, Elevated – 05), 1 ROB and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project.

	Schedule	Description	Total Quoted by Tenderer (inclusive of all taxes, duties, cess etc except GST)																	
			Quoted Amount in																	
			in INR	in USD	in Yen	in Euro														
C1	C2	C3	C4	C5	C6															
R1	Schedule 'A'	Design and Construction of Elevated Viaduct of length 14.213 km [km. (-)0.724 to 11.280] 12.004 km, [km. 14+697 to 16+906] 2.209 km, Civil Eng. related works, other hitherto Charted / uncharted Utility Diversions and other related Infrastructural works of Corridor -1 from KSR Bengaluru City to Yelahanka, Bangalore Suburban Railway Project (BSRP).																
R2	Schedule 'B'	Design and Construction of At Grade section of length 3.417 km [km. 11+280 to 14+697] formation in Embankments / Cuttings including Blanketing, Major Bridges, extension of existing Minor Bridges / RUBs / ROB, Retaining Walls, Drains, Civil Eng. related works, other hitherto Charted / uncharted Utility Diversions and other related Infrastructural works of Corridor -1 from KSR Bengaluru City to Yelahanka, Bangalore Suburban Railway Project (BSRP).																
R3	Schedule 'C'	Design and Construction of Special spans by Composite steel Girder (7 No), Open Web Girder (3 Nos), Balanced cantilever Box Girder (4 Nos) method for all crossings including the adjacent spans and other associated works between KSR Bengaluru City and Yelahanka of Corridor – 1 of Bangalore Suburban Railway Project (BSRP). Each Bridges - Lump Sum Component of the Works:																
		<table border="1"> <thead> <tr> <th rowspan="2">S. No</th> <th colspan="2">Chainage</th> <th rowspan="2">Span (m)</th> <th rowspan="2">Structure Type</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>-0+724</td> <td>-0+646</td> <td>78</td> <td>STEEL</td> <td>Special span – Open Web Girder</td> </tr> </tbody> </table>	S. No	Chainage		Span (m)	Structure Type	Remarks	From	To	1.	-0+724	-0+646	78	STEEL	Special span – Open Web Girder		
		S. No		Chainage					Span (m)	Structure Type	Remarks									
From	To																			
1.	-0+724	-0+646	78	STEEL	Special span – Open Web Girder															

Part-4: Financial Bid & Bill of Quantities
Section 12 : Pricing Schedules

		2.	-0+646	-0+593	53	STEEL	Special span – Composite Steel Structure	.....	.....
		3.	-0+305	-0+255	50	STEEL	Special span – Composite Steel Structure	.....	.....
		4.	0+315	0+386	71	STEEL	Special span – Open Web Girder	.....	.....
		5.	4+603	4+656	53	STEEL	Special span – Composite Steel Girder	.....	.....
		6.	5+270	5+326	56	PSC	Balanced cantilever	.....	.....
	5+326		5+429	103	Special span – Balance Cantilever		.....	.....	
	5+429		5+482	53	Balanced cantilever		.....	.....	
		7.	5+545	5+605	60	STEEL	Special span – Composite Steel Structure	.....	.....
		8.	6+121	6+169	48	STEEL	Special span – Composite Steel Structure	.....	.....
		9.	7+034	7+088	54	PSC	Balanced cantilever	.....	.....
	7+088		7+184	96	Special span Balance Cantilever		.....	.....	
	7+184		7+298	114	Special span Balance Cantilever		.....	.....	
	7+298		7+349	51	Balanced cantilever		.....	.....	

		10.	8+623	8+663	40	STEEL	Special span Composite Steel Structure	.....	.....		
		11.	9+679	9+733	54	STEEL	Special span Composite Steel Structure	.....	.....		
		12.	10+052	10+097	45	PSC	Balanced cantilever	.....	.....		
			10+097	10+187	90		Special span – Balance cantilever	.....	.....		
			10+187	10+232	45		Balanced cantilever	.....	.....		
		13.	15+668	15+748	80	STEEL	Special span – Open Web Girder	.....	.....		
		14.	16+326	16+386	60	PSC	Balanced cantilever	.....	.....		
			16+386	16+511	125		Special span – balance Cantilever	.....	.....		
			16+511	16+571	60		Balanced cantilever	.....	.....		
		Total for Schedule `C` - Lump Sum Component of the Works									
R4	Schedule 'D'	Each Stations - Lump Sum Component of the Works: Detailed design and construction of all civil, Structural, PEB, incl roof structure, entry exit structures, FoB and all associated works required for Stations											
		1.	KSR Bengaluru City - Elevated Station (Both Corridor 1 & 3)								
		2.	Srirampura - Elevated Station								
		3.	Malleswaram - Elevated Station								
		4.	Muthyalanagar - Elevated Station								
		5.	Lottegollahalli - Elevated Station								
		6.	Kodigehalli - At-Grade Station								
		7.	Judicial Layout - At-Grade Station								



Part-4: Financial Bid & Bill of Quantities
Section 12 : Pricing Schedules

S.No	Schedule	Item Description	Total amount (inclusive of all taxes, duties, cess except GST) in Rs only	Percentage (+ or -) in %	Quoted amount in Rs only
		Total for Schedule `D` - Lump Sum Component of the Works	.....	.....
R5	Schedule 'E' (BOQ)	Schedule 'E1' Detailed Design & Engineering of Architectural finishes, Façade works, PHE, E&M and MMI works.	2,70,82,863		
		Schedule E2 For item rate component of works: BOQ for Construction of Architectural finishes, Façade works, PHE works	70,00,65,888		
		Schedule E3 For item rate component of works BOQ for Construction of E&M works	65,45,37,641		
		Schedule E4 Multi Modal Integration (MMI) Works (Fixed Component)	15,00,00,000		15,00,00,000
		Total for Schedule `E`			
R6	Schedule 'F'	Component of Provisional Sum of Works (Fixed Component)	20,00,00,000		20,00,00,000
	Total of Schedules 'A', 'B', 'C', 'D', 'E' and 'F'	(in figures) (R1 + R2 + R3 + R4 + R5 + R6)	.....	.....
		(in words) (R1 + R2 + R3 + R4 + R5 + R6)	.....	.....

Signature of the Authorized Signatory of the Tenderer

ANNEXURE-1
SCHEDULE FOR ON ACCOUNT PAYMENTS UNDER LUMP SUM PORTION
<p>Name of Work: “Design and Construction of Elevated Viaduct of Length 14.213 Km (Chainage -0/724 to 11/280 & 14/697 to 16/906, including Ramp), At-Grade formation of Length 3.417 Km (Chainage 11/280 to 14/697), construction of 7 Stations building (At Grade – 02, Elevated – 05), 1 ROB and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project.</p>
<p>The payment would be governed by the stage payment schedule as detailed below:</p> <p>Overall percentage 100% i.e., quoted lumpsum price is divided into the following heads. The Percentage breakup of cost component for each Head is as below:</p>

1. APPORTIONMENT OF CONTRACT PRICE OF SCHEDULE-A:

Schedule	Description	Component	Percentage of Schedule-A
1	2	3	4
Schedule-A	Design and Construction of Elevated Viaduct of length 14.213 km [km. (-)0.724 to 11.280] 12.004 km, [km. 14+697 to 16+906] 2.209 km, Civil Eng. related works, other hitherto Chartered / uncharted Utility Diversions and other related Infrastructural works of Corridor -1 from KSR Bengaluru City to Yelahanka, Bangalore Suburban Railway Project (BSRP).	1. General Items (Head-G)	2%
		2. Design & Drawings (Head-D)	2%
		3. Construction of Viaduct (Head-V)	96%
Total			100%

2. WEIGHTAGES OF COMPONENTS FOR INTERIM PAYMENTS:

2.1 GENERAL ITEMS (HEAD G): 2% OF THE COST OF SCHEDULE-A

Sl. No	Stage Payments	Percentage of Cost of Schedule-A	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
1	Submission of Soil investigations, Topo Survey, including Transfer of TBMs and Detailed survey and Submission of best fit alignment report, Buildings condition survey report and infringement survey report of entire Corridor, Construction/Provision and Commissioning (with all specified furniture, appliances, items etc.) of all Project Offices and Site offices and maintaining all these of these offices throughout the Contract Period and DLP, Safety Barricading of the entire corridor	2% of the cost of Schedule-A	L.S.	15%
2	Commissioning of site laboratory, submission of quality, safety, environment and public health manuals, Initial Pile Load Tests, submission of Interface Management Plan and submission of instrumentation scheme of entire Corridor and diversion schemes if any and Maintaining of the same throughout the Project duration		LS	10%

Sl. No	Stage Payments	Percentage of Cost of Schedule-A	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
3	<p>a) Utility Survey, GPR survey, Submission of utility identification report of entire Corridor after actual trenching and making good road etc. complete and submission to utility owning agency, co-ordination as & methodology final scheme for relocation.</p> <p>b) Approval and Co-ordination for Removal of Trees, Tree Translocation, Compensatory Afforestation Proposal including the submission of Methodology.</p> <p>c) Cutting of all trees, Translocation of all specified trees,</p>		L.S.	20%
4	<p>a) Resources allocated to ESHS management.</p> <p>b) Drafting and updating the ESHS documentation, reporting, inspections.</p> <p>c) Implementation of the Health and Safety Plan: Meetings, health care center, medical check-ups, emergencies and evacuations, safety protective equipment, hygiene.</p> <p>d) Protection of adjacent areas, prevention of erosion and wastewater management.</p> <p>e) Traffic, noise and atmospheric emissions management, land take.</p> <p>f) Waste and hazardous products management.</p> <p>g) Vegetation clearing and site rehabilitation.</p> <p>h) Accommodation, drinking water, meals and transportation of staff.</p> <p>i) Recruitment, Training and management costs.</p> <p>j) Submission of quarterly audit report of SHE requirements of entire Corridor and Action Taken on non- compliance of non-conformance report and its closure during last month.</p> <p>Note: To be paid quarterly on pro-rata basis for submission of quarterly audit report.</p>		LS	8%
5	<p>a) Deployment of SHE personnel as per SHE Manual for the entire Corridor. The payment shall be made on a monthly basis starting from the third month after the Commencement Date.</p> <p>b) Accommodation, drinking water, meals and transportation of staff.</p> <p>c) Training and local recruitment management costs.</p> <p>Notes:</p> <p>I. 70% of the apportioned payment as per this Milestone shall be equally spread over 30 months (after initial 3 months) for the purpose of payment.</p> <p>II. Remaining 30% payment shall be released on completion of work, subject to continued deployment of SHE personnel in the period beyond 30 months.</p>		LS	20%

Sl. No	Stage Payments	Percentage of Cost of Schedule-A	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
	<p>III. Any shortfall of deployment of SHE Personnel from the numbers indicated in the SHE Manual will attract a penalty at the rate of 3 times the pro-rata shortfall. For example, if the SHE Manual requires 17 staff and the deployment is 16 staff for a particular month, then $[3 \times 1/17 =]$ 17.65% of the payment due for that month will be permanently deducted. Likewise, a shortage of 2 staff will result in 35.3% lesser payment and so on. This penalty shall also apply to 30% final payment also on pro rata manner.</p>			
6	<p>IT requirements of K-RIDE (online project management platform, documentation management system, enterprise work program platform, BIM modeling, PMIS etc.) - Refer relevant Para under Employer's Requirements for details.</p> <p>Notes:</p> <p>a. 30% of the apportioned payment under this Milestone shall be released after Contractor put in place the necessary hardware, IT center and software licenses. This should be accomplished not later than 3 months from commencement date.</p> <p>b. 40% of the apportioned payment under this Milestone shall be equally spread over 30 months after completion of SN -1 above and deployment of requisite IT staff in full as per requirement. Shortfall of staff shall attract penalty in similar manner as for SHE staffs as per Sl. No.5 above.</p> <p>c. Balance 30% will be released on completion of work, subject to continued deployment of IT staff in the period beyond above 30 months.</p>		LS	15%
7	<p>Regular maintenance and repair of existing roads, service road, foot path, construction and maintenance of temporary diversions as required for traffic management during construction period to keep them in traffic worthy condition. Restoration of road damaged for construction purpose is also included for the entire Corridor of 46.88 km.</p> <p>Note: To be paid monthly on pro-rata basis. Payment of this item will start from 6 months from commencement of project.</p>		L.S.	9%

Sl. No	Stage Payments	Percentage of Cost of Schedule-A	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
8	<p>Drone Survey: Visual inspection/precise data acquisition at various locations of elevated corridor (C1/01) of BSRP using unmanned aerial vehicle i.e Drone of required capacity and peripherals for the structures & other components. This will include high resolution images at multiple locations taken at various angles for visual defects from all visible directions/sides of girders, parapets, railings, bridge bearings, bearing pedestals, pier cap and pier up to ground/river level and any other components of bridge. This work includes as follows:</p> <p>a) Two trained Drone pilots b) Drone with 4K camera resolution and focus lens as per site requirements. c) Transportation and Logistics cost including hiring of boat with boat man for bridges over river as per site requirements. d) Soft copy of final deliverables of camera image and 4K video taken from Drone will be presented for approval. e) The inspection report will be submitted in a hard drive with details in editable form and hard copy will be submitted in colour printed report of the work (on monthly basis).</p>			3%
Total				100%

2.2 DESIGN & DRAWING (HEAD D): 2% OF THE COST OF SCHEDULE-A:

Sl. No.	Stage Payments	Percentage of Cost of Schedule -A	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
1.	Preliminary Design, GADs	2% of the cost of Schedule-A	LS	15%
2.	Definitive Design, Construction Drawings, GFC Drawings		LS	60%
3.	Completion Drawings/As Built Drawings		LS	25%
Total				100%

2.3 CONSTRUCTION OF VIADUCT (HEAD V): 96% OF THE COST OF SCHEDULE-A

Sl. No.	Stage Payments	Percentage of Cost of Schedule -A	Payable unit	Percentage breakup (Weightages)
1.	Commissioning of Casting Yard (Contractor and Engineer shall make joint program of commissioning of various activities of casting yard. Payment shall be released on monthly basis based on progress achieved as certified by Engineer).	96% of the cost of Schedule-A	Proportionately till Commissioning	1%
2.	Pile Foundations including testing of Piles, routine pile load tests, ND Tests, Soil Boring, Trial trenching, GPR Survey at specific locations etc.		Per Pile Group	15%

Sl. No.	Stage Payments	Percentage of Cost of Schedule -A	Payable unit	Percentage breakup (Weightages)
3.	Pile Caps, Open Foundations including PCC, shoring, Plate Load Test.	96% of the cost of Schedule-A	Per Pile Cap/Open Foundations	10%
4.	Piers including Pier Caps, Portal, Eccentric Piers, Precast Pier Caps & Pre-stressing, Pedestals, Median, Crash Barrier & Shear Keys/Stopppers.		per pier	15%
5.	Casting of segments of Box Girders / U Girders / I-Girders		per span	30%
6.	Supply and Erection of Composite Steel Girders/open web girder for viaduct.		per span	3%
7.	Erection of segments of Box Girders / U Girders / I-Girders including parapet including pre-stressing, grouting etc., all complete.		per span	13%
8.	Bearings - Supply and fixing for all spans including Elastomeric Bearing and POT-PTFE or spherical Bearings. Note: 50 % on supply and 50% on fixing.		per span	2%
9.	Providing & Fixing Expansion Joints (Omega Joints and Strip Seal Joints) Note: 50 % on supply and 50% on fixing		per span	1%
10.	Misc. Items: Completion of the work in all respects including railing, G.I. Brackets for cable, earthing, manholes, rainwater harvesting, clearing of sites in all respects so that area is in traffic worthy condition, drainage pipes, hand rails, drainage spouts, down take pipes including connecting to rain water harvesting, Traffic / Cautioning Sign Boards, Road Diversions, Setting out, Span Load testing of Girders, Dismantling and transportation, etc.		per span	7%
11.	All other balance works to complete the entire work as per the scope & specifications and handing over of viaduct including the clearing of the site in all respects to K-RIDE.		LS	3%
Total				100%

The details are shown in tentative GAD enclosed with the tender. In case of variation in route length on either side, i.e., increase or decrease, the total value of viaduct, i.e., "V" (Construction of Viaduct) & "D" (Design & Drawing), will get modified accordingly on prorata basis for payment purpose.

The Contractor will submit a quantity schedule for the work as per the details finalized by them for the components listed in the table above, which will be subject to review and approval by the employer/engineer. Unit payment of the items shall be governed by the Quantity schedule within the total % payment specified against that item. For example, if 'V' is the accepted value of viaduct and if there are 'N' no of units in a sub- item, out of which, payment for 'y' units is claimed and the applicable percentage of payment for that sub- item is 'S', and the applicable percentage of payment for that main item is 'P', the payment due on completion of 'y' no. of units would be $(V \times P \times S \times y / N)$.

The quantity schedule after being approved by the Engineer will be used for making all interim payments.

The Contractor should note that while interim payment will be governed by the quantity schedule, total cost of the 'Lump Sum' component would remain unchanged for the specified work subject to adjustment for the length, if need be, of the viaduct brought out in (1) above.



Payment will be made on the submission of the IPC with quantity schedule versus progress achieved for review and certification and recommendation of the Engineer to the Employer for various items. Further bifurcation or redistribution of price centres, if need be, within the overall % age or amongst sub works will be agreed mutually with the contractor.

Further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of K-RIDE. The decision of K-RIDE is final in this regard and the same is binding on the contractor.

Signature of Tenderer

ANNEXURE- 2

SCHEDULE FOR ON ACCOUNT PAYMENTS UNDER REGULARITY PAYMENT LUMP SUM PORTION (Schedule-B)

Name of Work:

*Design and Construction of Elevated Viaduct of Length 14.213 Km (Chainage -0/724 to 11/280 & 14/697 to 16/906, including Ramp), At-Grade formation of Length 3.417 Km (Chainage 11/280 to 14/697), construction of 7 Stations building (At Grade – 02, Elevated – 05), 1 ROB and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project.

The payment would be governed by the stage payment schedule as detailed below:

Overall percentage 100% i.e., quoted lumpsum price shall be divided in following heads. The Percentage breakup of cost component for each Head is as below:

1. APPORTIONMENT OF CONTRACT PRICE OF SCHEDULE-B:

Schedule	Description	Component	Percentage of Schedule-B
1	2	3	4
Schedule-B	Design and Construction of At Grade section of length 3.417 km [km. 11+280 to 14+697] formation in Embankments / Cuttings including Blanketing, Major Bridges, extension of existing Minor Bridges / RUBs / ROB, Retaining Walls, Drains, Civil Eng. related works, other hitherto Charted / uncharted Utility Diversions and other related Infrastructural works of Corridor -1 from KSR Bengaluru City to Yelahanka, Bangalore Suburban Railway Project (BSRP).	1. Design & Drawings	2%
		2. Earthwork, Retaining Wall & Drains	56%
		3. Minor Bridges	4%
		4. Major Bridges	4%
		5. RUB (Road Under Bridges)	14%
		6. ROB (Road Over Bridges)	15%
		7. All other balance works to complete the entire work as per the scope & specifications, handing over to K-RIDE	5%
	Total		100%

2. WEIGHTAGES OF COMPONENTS FOR INTERIM PAYMENTS:

2.1 DESIGN & DRAWING: 2% OF THE COST OF SCHEDULE-B

Sl. No.	Stage Payments	Percentage of Cost of Schedule -B	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
1.	Preliminary Design, GADs	2% of the cost of Schedule-B	LS	15%
2.	Definitive Design, Construction Drawings, GFC Drawings		LS	60%
3.	Completion Drawings/As Built Drawings		LS	25%
Total				100%

Further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of K-RIDE. The decision of K-RIDE is final in this regard and the same is binding on the contractor.

2.2 EARTHWORK, RETAINING WALL & DRAINS: 56% OF THE COST OF SCHEDULE-B

Sl. No.	Stage Payments	Percentage of Cost of Schedule -B	Payable unit	Percentage breakup (Weightages)	Payment Procedure
1	2	3	4	5	6
1.	General clearance, ground improvement, embankment/cutting including compaction so as to achieve 50% of desired height below the bottom of blanketing layer.	56% of the cost of Schedule-B		7%	1. Unit of measurement is linear length along alignment. Payment of each stage will be made on pro-rata basis on completion of a stage in a continuous length of minimum 500 m as per weightage given in this Schedule. 2. Provided that payment for the blanketing layer shall be made on completion of minor bridges including slab/RCC box in the length for which stage payment is claimed. For the avoidance of doubt, payment for minor Bridges shall be payable separately in accordance with relevant item.
2.	Balance earthwork in embankment/ cutting including compaction up to bottom of blanketing layer.			20%	
3.	Earthwork in Blanketing layer complete in all respect. Including bitumen / Asphalt layer as per IR specification and Geo-textile layers.			18%	
4.	Finishing the formation to the final finished level with camber/cross slope and other incidental works, complete.		LS	20%	
5.	Longitudinal/cross drains including cable ducts on either side of drain, retaining structures, retaining walls, sacrificial retaining walls, pitching, turfing, catch water drains, toe walls.			35%	
TOTAL				100%	

Notes:

- i) Payment can be processed on execution of various sub works recorded by the contractor & submitted to Engineer for review certification and recommendation of the Engineer to the Employer for various items of the work Progressed.
- ii) Track centre, Ground level, formation level etc. shown in indicative plan (Tender Drawings) and profile are indicative which may change as per design and site conditions. However, stage payment shall be made as per approved definitive plan and profile. The rates shall be inclusive of all minor variations
- iii) Minor Variation is considered up to $\pm 5\%$ in total barrel length and/or perimeter in case of Minor Bridge, $\pm 5\%$ in the clear span of Major Bridge /RUB, $\pm 5\%$ in case of linear length of ROB.
- iv) Beyond these limits, the extra quantities of items will be paid extra as per lumpsum payment as per the rate derived in KPWD or as per the relevant conditions.
- v) LS = Lumpsum.
- vi) Further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of Engineer / Employer. The decision of Engineer / Employer is final in this regard and the same is binding on the contractor.

2.3 MINOR BRIDGES: 4% OF THE COST OF SCHEDULE-B

Sl. No.	Stage Payments	Percentage of Cost of Schedule -B	Payable unit	Percentage breakup (Weightages)	Payment Procedure
1	2	3	4	5	6
1.	On ground clearance, ground improvement if required to suit design bearing capacity and testing, completion of the foundation works, On completion of RCC Boxes, abutment, piers for slab / girder bridges etc.	4% of the Cost of Schedule-B	LS	75%	1. Cost of each bridge shall be determined on pro rata basis with respect to the total linear length (Barrel length in case of RCC box and length of slab for slab bridges) of Minor Bridge
2.	On completion of balance works as per drawing like walkway, footpath, cable duct, railings, wing walls, return walls, Ballast Retainer, hand railing, all types of protection work, pitching, turfing, back filling and approaches, river training works, if any, etc. complete in all respects		LS	25%	2. Payment shall be made on completion of each component / stage of a Minor Bridge as per the weightage given in this schedule
TOTAL				100%	

Notes:

- Payment will be made on certification and recommendation of the Engineer to Employer for various items.
- If a bridge is constructed using precast elements, then 50 % payment against the cost of the item shall be released upon finishing casting of elements and transporting all such elements to the site of bridge construction. Balance 50% shall be released after completion of erection/laying in all respects. The rates shall be inclusive of all minor variations.
- LS= Lumpsum
- Further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of Engineer / Employer. The decision of Engineer / Employer is final in this regard and the same is binding on the contractor.
- The above weightage shall be further sub divided for components of works with mutual consent and approval by the Engineer/Employer.

2.4 MAJOR BRIDGES: 4% OF THE COST OF SCHEDULE-B

Sl. No.	Stage Payments	Percentage of Cost of Schedule -B	Payable unit	Percentage breakup (Weightages)	Payment Procedure
1	2	3	4	5	6
1.	Foundation: Ground clearance, preparation of base below the pile cap or below the pier base for open foundation as applicable, ground preparation work, completion of the foundation works	4% of the cost of	LS	25%	(a) Cost of each bridge shall be determined on pro rata basis with respect to the total linear length of the Major Bridges.
	for wing walls and return walls and testing.				(b) Payment shall be made on completion of each

Sl. No.	Stage Payments	Percentage of Cost of Schedule -B	Payable unit	Percentage breakup (Weightages)	Payment Procedure
1	2	3	4	5	6
2.	Substructure: Completion of abutment, piers including Pier caps/bed blocks, Pedestals (without bearings) as applicable, work up to the bottom of super-structure, completion of wing walls and return walls in all respects.	Schedule-B	LS	15%	(c) For item no. 3 Superstructure: if a bridge is constructed using pre-cast concrete element / composite girders/plate girders: 50% payment shall be released upon finishing casting of concrete pre-cast elements /Assembled. plate girders/open web girders & transportation to site.
3.	Superstructure: Completion of super structure including bearings ready for track linking, walkway footpath, cable duct, testing etc.		LS	45%	
4.	Misc. works: Completion of balance works as per drawing, handrails, curtain walls, all protection works, pitching, completion of approaches including back filling, turfing, river training works if any, testing on completion etc. complete in all respects and fit for use.		LS	15%	
TOTAL				100%	

Notes:

- Payment will be made on certification and recommendation of the Engineer to Employer for various items.
- The rates shall be inclusive of all minor variations.
- LS= Lumpsum
- Further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of Engineer / Employer. The decision of Engineer / Employer is final in this regard and the same is binding on the contractor.

2.5 RUB (ROAD UNDER BRIDGES): 14% OF THE COST OF SCHEDULE-B

Sl. No.	Stage Payments	Percentage of Cost of Schedule -B	Payable unit	Percentage breakup (Weightages)	Payment Procedure
1	2	3	4	5	6
1.	On ground clearance, ground improvement if required to suit design bearing capacity and testing, Road diversion works, completion of the foundation works, on completion of RCC Boxes (Barrel), abutments, piers & slab for slab bridges etc.,	14% of the cost of Schedule-B	LS	80%	1. Cost of each bridge shall be determined on prorata basis with respect to the total linear length (Barrel length in linear meter) of the RUBs. 2. Payment shall be made on completion of each component / stage of RUB as per the weightage given in this schedule.
2.	On completion of balance works as per drawing like walkway, footpath, cable duct, railings, wing walls, return walls, Ballast Retainer, hand railing, all types of protection works, pitching, turfing, back filling, drains, retaining wall for approach roads, approach roads, river training works, if any, etc. complete in all respects.		LS	20%	
TOTAL				100%	

Notes:

- Payment will be made on certification and recommendation of the Engineer to Employer for various items.
- If a bridge is constructed using precast elements, then 50% payment against the cost of the item 1 above shall be released upon finishing casting of elements and transporting all such elements to the site of bridge construction. Balance 50% shall be released after completion of erection/laying in all respects. The rates shall be inclusive of all minor variations.
- LS= Lumpsum
- Further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of Engineer / Employer. The decision of Engineer / Employer is final in this regard and the same is binding on the contractor.

a. ROB (ROAD OVER BRIDGES): 15% OF THE COST OF SCHEDULE-B

Sl. No.	Stage Payments	Percentage of Cost of Schedule -B	Payable unit	Percentage breakup (Weightages)	Payment Procedure
1	2	3	4	5	6
1.	Foundation: Ground clearance, preparation of base below the pile cap or below the pier base for open foundation as applicable, ground preparation work, completion of the foundation works for wing walls and return walls and testing.	15% of the cost of Schedule-B	LS	20%	Payment shall be made on completion of each stage of a bridge as per the weightage given in this schedule.

Sl. No.	Stage Payments	Percentage of Cost of Schedule -B	Payable unit	Percentage breakup (Weightages)	Payment Procedure
2.	Substructure:		LS	15%	
	Completion of abutment, piers including Pier caps / bed blocks, Pedestals (without bearings) as applicable, work up to the bottom of super-structure, completion of wing walls and return walls in all respects.				
3.	Superstructure:		LS	40%	
	Completion of super structure including bearings, walkway footpath, cable duct, testing etc.				
4.	Misc. works:	LS	25%		
	Completion of balance works as per works, pitching, completion of approaches including back filling, turfing, river training works if any, testing on completion, Approach roads, retaining walls, drains etc. complete in all respects and fit for use. Protective works in OHE territory.				
TOTAL				100%	

Notes:

- a. Payment will be made on certification and recommendation of the Engineer to Employer for various items. b.
- The rates shall be inclusive of all minor variations (+/-5%).
- c. LS= Lumpsum
- d. Further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of Engineer / Employer. The decision of Engineer / Employer is final in this regard and the same is binding on the contractor.

- A. Earthwork, Retaining Wall and Drains:** Unit of measurement is linear length along the alignment, in case of variation in route length on either side, i.e. increase or decrease, the total value of component of Earthwork, Retaining wall and drains will get modified accordingly on prorata basis for payment purpose. The component of design and drawing charges for Earthwork, retaining wall and drains also worked out proportionately on the basis of component value of Earthwork, retaining wall and drains as per schedule- B and the variations shall be calculated on prorata basis. Note: The variations in width and height of Earthwork, retaining wall and drains are deemed to have been included in the lumpsum cost.
- B. Minor Bridges:** Cost of each bridge shall be determined on pro rata basis with respect to the total linear length (Barrel length in case of RCC box and width of slab for slab bridges) of the Minor Bridges. In case the variation in barrel length on either side i.e., increase or decrease, the total value of the component of Minor bridges will get modified accordingly on pro rata basis for payment purpose. The component of design and drawing charges for Minor bridges also worked out proportionately on the basis of component value of Minor bridges as per schedule-B and the variations shall be calculated on prorata basis. Note: The variations in span and height of minor bridges are deemed to have been included in the lumpsum cost.
- C. Major Bridges:** Cost of each bridge shall be determined on pro rata basis with respect to the total linear length of the Major Bridges. In case the variation in total linear length (along the alignment) on either side i.e., increase or decrease, the total value of the component of Major bridges will get modified accordingly

on prorata basis for payment purpose. The component of design and drawing charges for Major bridges also worked out proportionately on the basis of component value of Major bridges as per schedule-B and the variations shall be calculated on prorata basis. Note: The variations in width and height of major bridges are deemed to have been included in the lumpsum cost.

- D. RUB:** Cost of each bridge shall be determined on pro rata basis with respect to the total linear length (Barrel length in linear meter) of the RUBs. In case the variation in barrel length on either side i.e., increase or decrease, the total value of the component of RUB will get modified accordingly on pro rata basis for payment purpose. The component of design and drawing charges for RUB also worked out proportionately on the basis of component value of RUB's as per schedule-B and the variations shall be calculated on pro rata basis. Note: The minor variations due to span and height of minor bridges are included in the barrel length cost.

Note: The variations in width and height of major bridges are deemed to have been included in the lumpsum cost.

- E. ROB/ROR:** Cost of each bridge shall be determined on pro rata basis with respect to the total linear length (span from abutment face to abutment face) of the ROB's along the road. The cost of ROB is including the approaches. In case the variation in total linear length (span from abutment face to abutment face) along the road on either side i.e., increase or decrease, the total value of the component of ROB will get modified accordingly on pro rata basis for payment purpose. The component of design and drawing charges for ROB also worked out proportionately on the basis of component value of ROB as per schedule-B and the variations shall be calculated on pro rata basis.

Note: Minor variations, as defined above, in span, width and height are deemed to have been included in the lumpsum cost.

The Contractor will submit a quantity schedule for the work as per the details finalized by them for the components listed in the table above, which will be subject to review and approval by the Employer / Engineer. The decision of the Employer in this regard is final and binding on the contractor.

The quantity schedule after being approved by the Employer/Engineer will be used for making all interim payments. The Contractor should note that while interim payment will be governed by the quantity schedule, total cost of the 'Lump Sum' component would remain unchanged for the specified work.

For all Schedules, further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of Engineer / Employer. The decision of Engineer / Employer is final in this regard and the same is binding on the contractor.

ANNEXURE-3
SCHEDULE FOR ON ACCOUNT PAYMENTS UNDER REGULARITY PAYMENT LUMP SUM PORTION (Schedule-C)
Name of Work: “Design and Construction of Elevated Viaduct of Length 14.213 Km (Chainage -0/724 to 11/280 & 14/697 to 16/906, including Ramp), At-Grade formation of Length 3.417 Km (Chainage 11/280 to 14/697), construction of 7 Stations building (At Grade – 02, Elevated – 05), 1 ROB and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project.
The payment would be governed by the stage payment schedule as detailed below: Overall percentage 100% i.e., quoted lumpsum price shall be divided in following heads. The Percentage breakup of cost component for each Head is as below:

SPECIAL SPANS BY COMPOSITE STEEL / OWG / BALANCED CANTILEVER METHOD

1. APPORTIONMENT OF CONTRACT PRICE OF SCHEDULE-C:

Schedule	Description	Component	Percentage of Schedule-A
1	2	3	4
Schedule-C	Design and Construction of Special spans by Composite steel Girder (7 No), Open Web Girder (3 Nos), Balanced cantilever Box Grider (4 Nos) method for all crossings including the adjacent spans and other associated works between KSR Bengaluru City and Yelahanka of Corridor – 1 of Bangalore Suburban Railway Project (BSRP).	1. General Items (Head-G)	2%
		2. Design & Drawings (Head-D)	3%
		3. Construction of Special spans (Head-V)	95%
Total			100%

3. WEIGHTAGES OF COMPONENTS FOR INTERIM PAYMENTS:

3.1.1 GENERAL ITEMS (HEAD G): 2% OF THE COST OF SCHEDULE-C

Sl. No	Stage Payments	Percentage of Cost of Schedule	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
1	Submission of Soil investigations, Topo Survey, including Transfer of TBMs and Detailed survey and Submission of best fit alignment report, Buildings condition survey report and infringement survey report of entire Corridor, Construction/Provision and Commissioning (with all specified furniture, appliances, items etc.) of all Project Offices and Site offices and maintaining all these of these offices throughout the Contract Period and DLP, Safety Barricading of the entire corridor	2% of the cost of Schedule-C	L.S.	15%

Sl. No	Stage Payments	Percentage of Cost of Schedule	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
2	Commissioning of site laboratory, submission of quality, safety, environment and public health manuals, Initial Pile Load Tests, submission of Interface Management Plan and submission of instrumentation scheme of entire Corridor and diversion schemes if any and Maintaining of the same throughout the Project duration	2% of the cost of Schedule-C	LS	10%
3	a) Utility Survey, GPR survey, Submission of utility identification report of entire Corridor after actual trenching and making good road etc. complete and submission to utility owning agency, co-ordination as & methodology final scheme for relocation. b) Approval and Co-ordination for Removal of Trees, Tree Translocation, Compensatory Afforestation Proposal including the submission of Methodology. c) Cutting of all trees, Translocation of all specified trees,		L.S.	20%
4	a) Resources allocated to ESHS management. b) Drafting and updating the ESHS documentation, reporting, inspections. c) Implementation of the Health and Safety Plan: Meetings, health care center, medical check-ups, emergencies and evacuations, safety protective equipment, hygiene. d) Protection of adjacent areas, prevention of erosion and wastewater management. e) Traffic, noise and atmospheric emissions management, land take. f) Waste and hazardous products management. g) Vegetation clearing and site rehabilitation. h) Accommodation, drinking water, meals and transportation of staff. i) Recruitment, Training and management costs. j) Submission of quarterly audit report of SHE requirements of entire Corridor and Action Taken on non-compliance of non-conformance report and its closure during last month. Note: To be paid quarterly on pro-rata basis for submission of quarterly audit report.		LS	8%
5	a) Deployment of SHE personnel as per SHE Manual for the entire Corridor. The payment shall be made on a monthly basis starting from the third month after the Commencement Date. b) Accommodation, drinking water, meals and transportation of staff. c) Training and local recruitment management costs. Notes:		LS	20%

Sl. No	Stage Payments	Percentage of Cost of Schedule	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
	<p>I. 70% of the apportioned payment as per this Milestone shall be equally spread over 30 months (after initial 3 months) for the purpose of payment.</p> <p>II. Remaining 30% payment shall be released on completion of work, subject to continued deployment of SHE personnel in the period beyond 30 months.</p>	2% of the cost of Schedule-C		
	<p>III. Any shortfall of deployment of SHE Personnel from the numbers indicated in the SHE Manual will attract a penalty at the rate of 3 times the pro-rata shortfall. For example, if the SHE Manual requires 17 staff and the deployment is 16 staff for a particular month, then $[3 \times 1/17 =]$ 17.65% of the payment due for that month will be permanently deducted. Likewise, a shortage of 2 staff will result in 35.3% lesser payment and so on. This penalty shall also apply to 30% final payment also on pro rata manner.</p>			
6	<p>IT requirements of K-RIDE (online project management platform, documentation management system, enterprise work program platform, BIM modeling, PMIS etc.) – Refer relevant Para under Employer's Requirements for details.</p> <p>Notes:</p> <p>a. 30% of the apportioned payment under this Milestone shall be released after Contractor put in place the necessary hardware, IT center and software licenses. This should be accomplished not later than 3 months from commencement date.</p> <p>b. 40% of the apportioned payment under this Milestone shall be equally spread over 30 months after completion of SN -1 above and deployment of requisite IT staff in full as per requirement. Shortfall of staff shall attract penalty in similar manner as for SHE staffs as per Sl. No.5 above.</p> <p>c. Balance 30% will be released on completion of work, subject to continued deployment of IT staff in the period beyond above 30 months.</p>		LS	15%
7	<p>Regular maintenance and repair of existing roads, service road, foot path, construction and maintenance of temporary diversions as required for traffic management during construction period to keep them in traffic worthy condition. Restoration of road damaged for construction purpose is also included for the entire Corridor of 46.88 km.</p> <p>Note: To be paid monthly on pro-rata basis. Payment of this item will start from 6 months from commencement of project.</p>	L.S.	9%	

Sl. No	Stage Payments	Percentage of Cost of Schedule	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
8	<p>Drone Survey: Visual inspection/precise data acquisition at various locations of elevated corridor (C1A) of BSRP using unmanned aerial vehicle i.e Drone of required capacity and peripherals for the structures & other components. This will include high resolution images at multiple locations taken at various angles for visual defects from all visible directions/sides of girders, parapets, railings, bridge bearings, bearing pedestals, pier cap and pier up to ground/river level and any other components of bridge. This work includes as follows:</p> <p>f) Two trained Drone pilots g) Drone with 4K camera resolution and focus lens as per site requirements. h) Transportation and Logistics cost including hiring of boat with boat man for bridges over river as per site requirements. i) Soft copy of final deliverables of camera image and 4K video taken from Drone will be presented for approval. j) The inspection report will be submitted in a hard drive with details in editable form and hard copy will be submitted in colour printed report of the work (on monthly basis).</p>	2% of the cost of Schedule-C		3%
Total				100%

3.2 DESIGN & DRAWING (HEAD D): 3% OF THE COST OF SCHEDULE-C:

Sl. No.	Stage Payments	Percentage of Cost of Schedule -C	Payable Unit	Percentage breakup (Weightages)
1	2	3	4	5
1.	Preliminary Design, GADs	3% of the cost of Schedule-C	LS	15%
2.	Definitive Design, Construction Drawings, GFC Drawings		LS	60%
3.	Completion Drawings/As Built Drawings		LS	25%
Total				100%

3.3 CONSTRUCTION OF SPECIAL SPANS (HEAD V): 95% OF THE COST OF SCHEDULE-C

Sl. No.	Stage Payments	Percentage of Cost of Schedule -C	Payable unit	Percentage breakup (Weightage s)	Payment Procedure
1	2	3	4	5	6
1.	Foundation:		LS	20%	

Sl. No.	Stage Payments	Percentage of Cost of Schedule -C	Payable unit	Percentage breakup (Weightage s)	Payment Procedure
	Ground clearance, preparation of base below the pile cap or below the pier base for open foundation as applicable, ground preparation work, completion of the foundation works for wing walls and return walls and testing.	95% of the cost of Schedule-C			Payment shall be made on completion of each stage of a bridge as per the weightage given in this schedule.
2.	Substructure: Completion of abutment, piers including Pier caps / bed blocks, Pedestals (without bearings) as applicable, work up to the bottom of super-structure, completion of wing walls and return walls in all respects.		LS	15%	
3.	Superstructure: Completion of super structure including bearings, walkway footpath, cable duct, testing etc.		LS	50%	
	Misc. works:				
4.	Completion of balance works as per works, pitching, completion of approaches including back filling, turfing, river training works if any, testing on completion, Approach roads, retaining walls, drains etc. complete in all respects and fit for use. Protective works in OHE territory.		LS	15%	
TOTAL				100%	

Notes:

The details are shown in tentative GAD enclosed with the tender. In case of variation in length on either side, i.e., increase or decrease, the total value of bridge will be adjusted and modified accordingly on prorata basis for payment purpose. Cost of each bridge shall be determined on pro rata basis with respect to the total linear length of the special spans. In case the variation in linear length on either side i.e., increase or decrease, the total value of the component of special spans will get modified accordingly on pro rata basis for payment purpose. The component of design and drawing charges for special spans also worked out proportionately on the basis of component value of special spans as per schedule-C and the variations shall be calculated on pro rata basis.

Note: The minor variations (+/-5%) due to span and height of Special span bridges are included in the linear length. cost.

The Contractor will submit a quantity schedule for the work as per the details finalized by them for the components listed in the table above, which will be subject to review and approval by the employer/engineer. Unit payment of the items shall be governed by the Quantity schedule within the total % payment specified against that item. For example, if 'V' is the accepted value of bridge and if there are 'N' no of units in a sub- item, out of which, payment for 'y' units is claimed and the applicable percentage of payment for that sub- item is 'S', and the applicable percentage of payment for that main item is 'P', the payment due on completion of 'y' no. of units would be $(V \times P \times S \times y / N)$.

The quantity schedule after being approved by the Engineer will be used for making all interim payments.

The Contractor should note that while interim payment will be governed by the quantity schedule, total cost of the 'Lump Sum' component would remain unchanged for the specified work subject to adjustment for the length, if need be, of the bridge brought out in (1) above.

Payment will be made on the submission of the IPC with quantity schedule versus progress achieved for review and certification and recommendation of the Engineer to the Employer for various items. Further bifurcation or redistribution of price centres, if need be, within the overall % age or amongst sub works will be agreed mutually with the contractor.

Further bifurcation/redistribution/minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of Engineer. The decision of Engineer is final in this regard and the same is binding on the contractor.

ANNEXURE-4	
SCHEDULE FOR ON ACCOUNT PAYMENTS UNDER REGULARITY PAYMENT LUMP SUM PORTION (Schedule-D)	
Name of Work:	
“Design and Construction of Elevated Viaduct of Length 14.213 Km (Chainage -0/724 to 11/280 & 14/697 to 16/906, including Ramp), At-Grade formation of Length 3.417 Km (Chainage 11/280 to 14/697), construction of 7 Stations building (At Grade – 02, Elevated – 05), 1 ROB and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project.	
The payment would be governed by the stage payment schedule as detailed below:	
Overall percentage 100% i.e., quoted lumpsum price shall be divided in following heads. The Percentage breakup of cost component for each Head is as below:	

1. **APPORTIONMENT OF CONTRACT PRICE OF SCHEDULE-D:**

Schedule	Description	Component	Percentage of Schedule-A
1	2	3	4
Schedule-D	“Design and Construction of 7 Stations building (At Grade – 02, Elevated – 05), and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project.	1. General Items (Head-G)	5%
		2. Construction of Stations (Head-S)	95%
Total			100%

3. **WEIGHTAGES OF COMPONENTS FOR INTERIM PAYMENTS:**

3.1 **GENERAL ITEMS (HEAD G): 5% OF THE COST OF SCHEDULE ‘D’**

Schedule of Payments for on account payments for General works of Lump Sum Component of Works (i.e. Schedule ‘D’) under Head “G”

Overall, one hundred percent (100%) of the accepted amount of Lump Sum Component of Works (i.e. of Schedule ‘D’) shall be apportioned in two parts, i.e. five percent (5%) for General works (Head “G”) and ninety-five percent (95%) for Stations works (Head “S”).

The payment of five percent (5%) for General works (under Head “G”) shall be governed by the stage payment schedule as detailed below:

S. No.	Description of Stage	Payable Unit	Percentage Breakup of “G”
G1.1	Provision of the Employer IT requirements of (online Project Management Information System, Document Management System, Enterprise work program platform, BIM modelling etc.) Notes: 1. 30% of the apportioned payment under this Milestone (i.e. 30% of 8%) shall be released after the necessary	Lump Sum	8.00%

S. No.	Description of Stage	Payable Unit	Percentage Breakup of "G"
	<p>hardware, IT centre and software licenses are provided by the Contractor. This should be accomplished not later than 3 months from Commencement Date.</p> <p>2. 50% of the apportioned payment under this Milestone (i.e. 50% of 8%) shall be equally spread over 21 months after completion of works under Note 1 and is subject to the deployment of competent IT staff.</p> <p>3. The remaining 20% payment shall be released on completion of all work through the Defects Notification Period.</p>		
G2.1	Engineer approval of Health and Safety Manual	Lump Sum	2.00%
G2.2	Engineer approval of Quality Manual (also including Quality Plan)	Lump Sum	2.00%
G2.3	<p>Engineer approval of Interface Management Plan, Interface Matrix, Control Sheets and Audits</p> <p>Notes:</p> <p>1. 50% of the apportioned payment under this Milestone (i.e. 50% of 1%) shall be released after the necessary approval of Interface Management Plan, Interface Matrix.</p> <p>2. 50% of the apportioned payment under this Milestone (i.e. 50% of 1%) shall be equally spread over the balance period of the Contract after completion of works under Note 1 only.</p>	Lump Sum	1.00%
G2.4	Engineer approval of Traffic Diversion Management Plan	Lump Sum	1.00%
G2.5	<p>Engineer approval of Detained Works Programme, Baseline Construction Programme, Three Months Rolling Programme and Monthly Progress Reports.</p> <p>Notes:</p> <p>1. 25% of the apportioned payment under this Milestone (i.e. 25% of 1%) shall be released after the approval of Detained Works Programme, Baseline Construction Programme.</p> <p>2. 75% of the apportioned payment under this Milestone (i.e. 75% of 1%) shall be equally spread over the balance period of the Contract after completion of works under Note 1 only.</p>	Lump Sum	1.00%
G2.6	Engineer approval of Design Plan	Lump Sum	1.00%
G3.1	<p>Submission of quarterly audit report of Quality, Health, Safety and Environment with confirmation of the actions taken on noncompliance</p> <p>Note: To be paid quarterly on pro-rata basis for submission of quarterly audit report</p>	Lump Sum	5.50%
G3.2	<p>Deployment of Health, Safety and Environment personnel as per the Health and Safety and Environmental Manuals.</p> <p>Note: The payment shall be made as follows commencing 3 months after the Commencement Date.</p> <p>1. 90% of the apportioned payment as per this Milestone shall be spread pro-rata commencing 3 months after the Commencement Date to the Completion Date.</p>	Lump Sum	14.00%

S. No.	Description of Stage	Payable Unit	Percentage Breakup of "G"
	<p>2. The remaining 10% payment shall be released on completion of all work through the Defects Notification Period.</p> <p>3. Any shortfall of deployment of Health, Safety and Environment personnel from the numbers indicated in the Health and Safety Manual and Environmental Manual will attract a penalty at the rate of 3 times the pro-rate shortfall. For example, if the Health and Safety Manual requires 17 staff and the deployment is 16 staff for a particular month, then $(3 \times 1/17 =)$ 17.65% of the payment due for that month will be permanently deducted. Likewise, a shortage of 2 staff will result in 35.3% lesser payment and so on.</p>		
G4.1	Engineer's approval of design team	Lump Sum	1.50%
G4.2	Design Submission Programme, Design Statement and Design Deliverables	Lump Sum	1%
G4.3	Design Checking Plan	Lump Sum	1%
G4.4	Submission of Preliminary Structural Design, GAD, CAD Manual and DBR	Lump Sum	3.00%
G4.5	Submission of Final Structural Design and GFC Drawings To be paid on pro-rata basis depending upon progress as certified by the Engineer.	Lump Sum	6.00%
G4.6	Submission of MEP Interface Report and DBR	Lump Sum	3.00%
G4.7	Submission of Final Design with GFC Drawings	Lump Sum	6.00%
G4.8	Submission of utility identification and proposed diversion report and submission of the report to utility owning agency. (pro-rata basis for both charted and uncharted utilities)	Lump Sum	5.00%
G5	<p>Regular maintenance and repair of existing roads, service roads, footpaths, the construction and maintenance of temporary diversions as required for traffic management during construction period to keep them in traffic worthy condition. This shall include the original reinstatement of the roadway as approved by the Engineer.</p> <p>Note: Payment for this milestone shall be spread prorata commencing 3 months after the Commencement Date up to the Completion Date.</p>	Lump Sum	12.00%
G6	Submission of all As Built Drawings including O&M Manuals	Lump Sum	10.00%
G7	Training of Employer's Personnel, in compliance with the Employer's requirements	Lump Sum	1.00%
G8	Submission of Insurance Premium Receipts and Insurance Policies as per the Contract Requirements (prorate basis)	Lump Sum	1.00%

S. No.	Description of Stage	Payable Unit	Percentage Breakup of "G"
G9	Providing office accommodation to Engineer / Employer as per Appendix 13 of Employer Annexure 1 of Part-2. Construction/Provision and Commissioning (with all specified furniture, appliances, items etc.) of all Project Offices and Site offices and maintaining all these of these offices throughout the Contract Period and DLP, Safety Barricading of the entire corridor	Lump Sum	7%
G10	Submission of Interface Management Plan and diversion schemes if any and Maintaining of the same throughout the Project duration a) Utility Survey, GPR survey, Submission of utility identification report of entire Corridor after actual trenching and making good road etc. complete and submission to utility owning agency, co-ordination as & methodology final scheme for relocation. b) Approval and Co-ordination for Removal of Trees, Tree Translocation, Compensatory Afforestation Proposal including the submission of Methodology. c) Cutting of all trees, Translocation of all specified trees, Compensatory Afforestation of all required trees.	Lump Sum	4%
G11	Drone Survey: Visual inspection/precise data acquisition at various locations of elevated corridor (C1/1A) of BSRP using unmanned aerial vehicle i.e Drone of required capacity and peripherals for the structures & other components. This will include high resolution images at multiple locations taken at various angles for visual defects from all visible directions/sides of girders, parapets, railings, bridge bearings, bearing pedestals, pier cap and pier up to ground/river level and any other components of bridge. This work includes as follows: a) Two trained Drone pilots b) Drone with 4K camera resolution and focus lens as per site requirements. c) Transportation and Logistics cost including hiring of boat with boat man for bridges over river as per site requirements. d) Soft copy of final deliverables of camera image and 4K video taken from Drone will be presented for approval. e) The inspection report will be submitted in a hard drive with details in editable form and hard copy will be submitted in colour printed report of the work (on monthly basis).	Lump Sum	3%

3.2 CONSTRUCTION OF STATIONS (HEAD S): 95% OF THE COST OF SCHEDULE-D

Schedule of Payments for on account payments for Stations works of Lump Sum Component of Works (i.e. Schedule 'D') under Head "S"

Overall, one hundred percent (100%) of the accepted amount of Lump Sum Component of Works (i.e. Schedule 'D') shall be apportioned in two parts, i.e. five percent (5%) for General works (Head "D") and ninety-five percent (95%) for Station works (Head "S").

The payment of ninety-five percent (95%) for Stations works (under Head "S") shall be governed by the stage payment schedule as detailed below:

S. No.	Description of Stage	Payable Unit	Percentage Breakup of "S"	Cumulative Total Percentage
S1	Establishment and commissioning of Quality Test Laboratory. Notes: 1. 50% of the apportioned payment under this Milestone (i.e. 50% of 0.50%) shall be released on a monthly basis based on the progress achieved as certified by Engineer. 2. 50% of the apportioned payment under this Milestone (i.e. 50% of 0.50%) shall be released monthly based on equally spread amount over the balance period of the Contract after completion of works under Note 1 only.	Lump Sum	1.00%	1.00%
S2	Civil Works – Foundation			
S3.1	Completion of utility location trial trenches	All Stations	0.50%	19%
S2.2	Completion of Surveys, Site clearances (including demolition of existing structures and removal of debris), traffic diversions and site boundary hoarding	All Stations	0.50%	
S2.3	Completion of geotechnical site investigation	All Stations	0.50%	
S2.4	Completion of Load Test and submission of report for Pile / Open foundation (e.g. isolated or raft)	All Stations	0.50%	
S2.5	Piling / Open foundation if used (e.g. isolated or raft) Including GTI, GIR, Safety Barricading, Trail trenching, Providing Traffic marshals, Security etc	Total No. of foundations (piles plus open foundation)	9.50%	
S2.6	Pile Caps/ Pedestal for open foundation if used (e.g. isolated or raft) including Safety Barricading, Trail trenching, Providing Traffic marshals, Security etc	Total No. (pile caps plus pedestal for open foundation)	7.50%	
	Total of S2		19.00%	20.00%
S3	Civil Works – Up to Concourse			
S3.1	Piers & Columns/Beams including pier caps/pier arms, crash barrier, all works below concourse level and at ground floor level including Providing Traffic marshals, Security etc	Total Spans	15.00%	35%

S. No.	Description of Stage	Payable Unit	Percentage Breakup of "S"	Cumulative Total Percentage
S3.2	Casting & erection of girders, concourse slab, structural works for operation rooms and all other rooms including stairs, lift shaft, escalator pit and system related provisions and other structural works as per GFC drawings including Providing Traffic marshals, Security etc	Total Spans	18.00%	
	Total of S3		35.00%	55.00%
S4	Civil Works – Platform in Station			
S4.1	Columns, Beams, Girders and Slab from concourse to platform level and at platform level including stairs, lift shafts, water tank, waterproofing, all systems related provisions and other structural works as per GFC drawings	Total spans	17.00%	35%
S4.2	Completion of structural works for roof and roof sheeting over platforms, track-way, entry-exit structures, connecting walkways, etc including roof sheet installation complete with fascia, gutter, drainage pipe and first fix provisions including Providing Traffic marshals, Security etc	Total spans	15.00%	
S4.3	Installation of expansion joints/bearings	Total spans	0.50%	
S4.4	Completion of all the work including testing, railings, G.I. cable inserts, brackets and ducts, earthing, manholes, etc.	Total spans	2.50%	
	Total of S4		35.00%	90.00%
S5	Handover			
S5.1	Completion of all site restoration works as per the standards of the owning agency, including the clearing of the site in all respects so that the area is in traffic worthy condition where necessary.	All Stations	5.00%	10%
S5.2	All remaining works to complete the entire work including integrated testing and commissioning as per the scope & specifications, and the issuance of the Employer's Taking Over Certificate for the complete Stations.	Lump Sum	5.00%	
	Total of S4		10.00%	100.00%
	Total		100.00%	

Notes:

- The successful Contractor will submit a quantity schedule for the work as per the details finalized by them for the components listed in the table above, which will be subject to approval of the Engineer/Employer. Unit payment of line items shall be governed by the quantity schedule within the total percentage payment specified against each item. The breakup of each line item shall be prepared by the Contractor during detailed design in consultation with the Engineer/Employer. Subsequently this break up with due weightage for sub items shall be approved by the Engineer/Employer.
- The Quantity Break up, after approval by the Engineer/Employer, shall be used for making all stage payments to the Contractor. The Contractor should note that while stage payment will be governed by the quantity schedule, the total cost of the 'Lump Sum' component shall remain unchanged for the specified work even if the quantity is revised at any stage by the Contractor's design and the cumulative paid amount would be adjusted accordingly.
- The Contractor will submit a quantity schedule for the work as per the details finalized by them for the components listed in the table above, which will be subject to review and approval by the employer / engineer.

Unit payment of the items shall be governed by the Quantity schedule within the total% payment specified against that item. For example, if 'S' is the accepted value of Stations and if there are 'N' number of units in a sub- item, out of which, payment for 'Y' units is claimed and the applicable percentage of payment for that sub- item is 'V', and the applicable percentage of payment for that main item is 'P', the payment due on completion of 'Y' no. of units would be $(S \times P \times V \times Y / N)$. The quantity schedule after being approved by the Engineer/Employer will be used for making all interim payments.

4. Payment will be made on the submission of the IPC with quantity schedule ever s us progress achieved for review and certification and recommendation of the Engineer to the Employer for various items. Further bifurcation or redistribution of price centres, if need be, within the overall % age or amongst sub-works will be agreed mutually with the contractor.
5. Further bifurcation / redistribution / minute distribution of price centres, if need be, within the overall % age or amongst sub works will be the right of Employer. The decision of Employer is final in this regard and the same is binding on the contractor.
6. Stations incl entry exits- In case of variation (beyond +/- 5%) in the floor area of any station due to site constraints (prior approval required from Employer for change in floor area) on either side i.e., increase or decrease with respect to the area shown in the tender drawings, the total value of station as mentioned in schedule D will get modified accordingly on pro rata basis of floor area.
7. The Proposed station location and Entry/Exit may change as per the site conditions, availability of land etc., during finalization of station layout after award of the work. Nothing extra shall be paid extra for the change of station and Entry/Exit location.

K-RIDE

ANNEXURE-5
SCHEDULE FOR ON ACCOUNT PAYMENTS UNDER REGULARITY PAYMENT LUMP SUM PORTION (Schedule-E)
Name of Work: "Design and Construction of Elevated Viaduct of Length 14.213 Km (Chainage -0/724 to 11/280 & 14/697 to 16/906, including Ramp), At-Grade formation of Length 3.417 Km (Chainage 11/280 to 14/697), construction of 7 Stations building (At Grade – 02, Elevated – 05), 1 ROB and other Associated Works between KSR Bengaluru City to Yelahanka (17.630 Kms) of Corridor – 1 of Bengaluru Suburban Railway Project
The payment would be governed by the stage payment schedule as detailed below:

Schedule - 'E' : Consists of four parts Schedule E1, E2, E3 & E4

Schedule 'E1' – Lumpsum price schedule for Detailed Design & Engineering of all Architectural finishes, Façade works, PHE and E&M works.

The payment of Hundred percent (100%) for Detailed Design & Engineering of all **Architectural finishes, Façade works, PHE and E&M works** shall be governed by the stage payment schedule as detailed below:

Sl. No.	Description of Payment Stage Activity	Stage Payment Schedule	Cumulative Payment Percentage
1	Submission, Engineer's approval and mobilisation of all Key Personnel Engineer approval of Design Plan Engineer's approval of design team Design Submission Programme, Design Statement and Design Deliverables Design Checking plan	2%	2%
2	Based on study and review of Planning and design criteria, conceptual layout for Architectural finishes, Façade works & MEP works and comparison with similar Metro / Railway layouts, Preparation and submission of Design Basis Report/ Planning Criteria, Presentation of Design alternatives with layouts and complete programme schedule for Detailed Design services.	3%	5%
3	Submission of Final Layout Plan (for approved alternative) along with General Arrangement. Layout of the complete area and locational & architectural plans of various buildings, façade works, and other Services covering water supply, drainage & wastewater, MEP, power supply and signalling / data cables, plants & machineries, etc. along with BOQ, estimated cost.	5%	10%
4	Submission of CRD/GFC Drawings, BOQs, Cost Estimates & rate analysis, Specifications, Scope of Work, quantity take off, Employer's Requirements and all other necessary documents needed for corresponding construction works and other tender(s), of various tender packages. Submission of Preliminary Back of House Architectural Design, GAD Drawings, CAD Drawings, Perspectives and Renderings.	25%	35%

Sl. No.	Description of Payment Stage Activity	Stage Payment Schedule	Cumulative Payment Percentage
	Submission of Detailed Back of House Architectural Design and Drawings, Materials, Finishing Schedules incorporating all operation rooms and facilities with due consideration to system interfaces. Submission of CSD for stations.		
5	Submission of MEP, Station Plant and Machineries Technical Documents with all Technical Specifications/ Drawings, Employer's Requirements, BOQ, Rate Analysis, Cost Estimates and all other necessary documents needed as required for invitation of various plants and machineries tender packages. Submission of Preliminary Design with calculations for MEP Equipment Load and capacities and GAD/SLD for Electrical Equipment and Wiring Submission of MEP Interface Report and DBR	10%	45%
6	Issue of "Good for Construction Drawings" and submission of "Final Drawings" for the following: Architectural Drawings Water Supply, Drainage System, Sewerage System and plumbing, etc. Electrical (LV) Distribution e.g. Power supply, DG Set, UPS, Solar Power etc. HVAC and Fire System Drawings Combined Service Drawings and balance all GFC Drawings E&M works Submission of Preliminary Design with calculations for MEP Equipment Load and capacities and GAD/SLD for Electrical Equipment and Wiring.	35%	80%
7	Submission of "Originals" Detailed Design Report including all documents	1%	81%
8	Construction Support Activities for 1 st year of construction (Architectural finishes and MEP)	7%	88%
9	Construction Support Activities for 2 nd year of construction (Architectural finishes and MEP)	7%	95%
10	Construction Support Activities till complete commissioning of Stations	5%	100%

Schedule – ‘E2’: Item rate BOQ for

- Architectural works (Front of House (FoH) and Back of House (BoH)) in public and non-public areas which includes Concourse, Platform, Foot over Bridge (FoB), Entry/Exit, plaza area, system rooms; masonry/block work walls, mullions, tie beams, lintels, plastering etc, as approved by the Employer/Engineer. The Design & Construction Works shall be carried out as described in the Tender Documents / BOQ.
- Façade works including the required supporting structural elements as approved by the Employer / Engineer. The Design & Construction Works shall be carried out as described in the Tender Documents / BOQ.
- PHE works as approved by the Employer / Engineer. The Design & Construction Works shall be carried out as described in the Tender Documents / BOQ.

Schedule – ‘E3’: Item rate BOQ for

- Electrical and Mechanical (E&M) works, as approved by the Employer / Engineer. The Design & Construction Works shall be carried out as described in the Tender Documents / BOQ.

Schedule E-4 – MMI Works (Fixed components)

- Multi Modal Integration (MMI) Works to be executed under Common SR for year 2023-24 or Latest published by KPWD. Whenever KPWD items are not available, the other department items of IR-USSOR / CPWD / BESCOM / KPTCL / BWSSB shall be considered as per sequence of priority and with the approval of Engineer / Employer.