

ರೈಲು ಮೂಲಸೌಲಭ್ಯ ಅಭಿವೃದ್ಧಿ ಕಂಪನಿ (ಕರ್ನಾಟಕ) ನಿಯಮಿತ

ರೇಲ ಇನ್‌ಫ್ರಾಸ್ಟ್ರಕ್ಚರ್ ಡೆವಲಪ್‌ಮೆಂಟ್ ಕಂಪನಿ (ಕರ್ನಾಟಕ) ಲಿಮಿಟೆಡ್

Rail Infrastructure Development Company (Karnataka) Limited

BID DOCUMENT

for

BAIYYAPPANAHALLI - HOSUR DOUBLING PROJECT

Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Single Package

Dt.01.10.2020.

RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED

MSIL House, 7th Floor, #36, Cunningham Road, Bangalore - 560052

Tel +91-80-22370582, Fax +91-80-22370581

Email: md@kride.in



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BIDDING DOCUMENTS

for

Execution of

Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations. (*Single Package*).

IFB No: *K RIDE/Projects/59//2020*

Date : 01.10.2020

BAIYYAPPANAHALLI - HOSUR DOUBLING PROJECT

Employer: K RIDE (Rail Infrastructure Development Company (Karnataka) Limited)

MSIL House, 7th Floor,

#36, Cunningham Road

Bangalore

Tel – (080) 22370582,

Fax – (080) 22370581

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**NOTICE
FOR
INVITATION FOR BIDS
(IFB)**

Rail Infrastructure Development Company (Karnataka) Limited

INVITATION FOR BIDS

Bid Notice No: K RIDE/Projects/59//2020

Date : 01.10.2020.

RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED (K RIDE), having its Corporate office at MSIL House, 7th Floor, #36, Cunningham Road Bangalore-560052, India which is a Joint Venture of Government of Karnataka and Ministry of Railways set up as a wholly owned Government Company under the provisions of Section 2(45) of Companies Act 2013, invites bids under single stage two packet system for the work of **Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations. (Single Package).**

1. THE SINGLE CONTRACT PACKAGE IS AS UNDER

Sl. No.	Contract Packages	Estimated Cost of Project (in Rs.)	Bid Security (in Rs.)	Period of Completion
I	<u>BAIYYAPPANAHALLI – HOSUR DOUBLING PROJECT :</u> Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations. (Single Package).	17,53,80,089/-	10,26,900/-	18 months

2. Bidders are advised to note the eligibility and minimum qualifying criteria specified in the Instruction to Bidders and Section 3 “ Evaluation and Qualification Criteria” of bid document.
3. Bids must be accompanied by a bid security as mentioned above against each package in any one of the forms as specified in the bidding documents and shall have to be valid for 42 days beyond the validity of the bid.
4. Bidding Documents can be downloaded free of cost from K RIDE website www.kride.in from **02/10./2020** and the bids can be submitted on the downloaded document.

Please note that drawings, if any, referred in the bid document, but not uploaded with the bidding document, can be viewed in this office on any working day.

It will be the responsibility of the bidder who is submitting the bid on downloaded bidding documents to check and see any Addendum/Corrigendum issued in this regard from the website from time to time and ensure submission of bid along with all Addendum/Corrigendum.

In case of any clarification the tenderer can visit the Rail Infrastructure Development Company (Karnataka) limited Corporate Office Bangalore at **MSIL House, 7th Floor, #36, Cunningham Road Bangalore – 560052,**

5. **Purchase Preference:** Shall not apply to Central Public Sector Enterprises, as per extant rules in force.
6. **Date of Receipt and opening of Bids:** The completed Bids must be dropped in the nominated tender box or delivered to the address below not later than 15.00 hrs on- **27.10.2020** and the same shall be opened at 15.30 hrs. in the same day in the presence of Bidders who choose to be present. K RIDE will not be responsible for any delays in receiving the Bidding documents by the Bidder or receipt of Bids by K RIDE.
7. **Address for Communication:** Interested eligible Bidders may obtain further information from the following address:

**General Manager (Civil),
Rail Infrastructure Development Company (Karnataka) Limited,
MSIL House, 7th Floor, #36, Cunningham Road
Bangalore – 560052**

**Tel: (080)22370582, Fax -22370581
E – Mail: md@kride.in**

PART I	Bidding Procedure
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Section 1	Instructions to Bidders (ITB)
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Section 1	Instructions to Bidders (ITB)
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Reasons for Rejection of Bids

ITB Clause No Section 1	Reason for Summary Rejection
4.4	Non-submission of Affidavit
4.5	Non-submission of immediate information to the Employer in case the Bidder ceases to fulfill eligibility in terms of ITB 4.3 & 4.4
14.2	Quoting more than one percentage for any schedule
14.9	Non-submission of the Letter of Price Bid (LPB) and/or Summary sheet of BOQ
16.4	Non-submission of the Letter of Technical Bid (LTB)
19.3	Bid not accompanied by an enforceable and compliant bid security

Note :

The Bidders are advised to note the above reasons and take care of the same to avoid rejection of their bids.

Important Note:

With regard to the procedure of sealing and submission of bids, please refer to ITB 21

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A. General

1. Scope of Bid

- 1.1 In connection with the Invitation for Bids indicated in the Bid Data Sheet (BDS), Rail Infrastructure Development Company (Karnataka) Limited (K RIDE), a Joint Venture of Govt. of Karnataka & Ministry of Railways, hereinafter referred to as the 'Employer', issues these Bidding Documents for the Procurement of Works as specified in Section 5: Works Requirements. The name, identification, number of contract(s) are provided in the BDS.
- 1.2 Throughout these Bidding Documents:
- (a) the term "in writing" means communicated in written form and delivered against receipt;
 - (b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
 - (c) "day" means calendar day.
 - (d) "Agent" means is a person employed to do any act for another, or to represent another in dealings with third person.

2. Source of Funds

- 2.1 The required funds have been sourced by K RIDE, unless otherwise specified in the BDS.

3. Corrupt Practices

- 3.1 The Employer requires that bidders, suppliers, and contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Employer:
- (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) "corrupt practice" means offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any party in the procurement process or the execution of a contract;
 - (ii) "fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
 - (iii) "collusive practice" means a scheme or arrangement between two or more bidders, with or without the knowledge of the Employer, designed to influence the action of any party in a procurement process or the execution of a contract;
 - (iv) "coercive practice" means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract;
 - (b) will reject a Bid for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract; and

- (c) will sanction a party or its successor, including declaring ineligible, either indefinitely or for a stated period of time, to participate in Employer's activities, if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing a contract of the employer.

4. Eligible Bidders

- 4.1 A Bidder may be a natural person, private entity, government-owned entity, or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture (JV). The bidder must ensure the following:
- (a) In case of Single Entity:
 - (i) Submit Power of Attorney authorizing the signatory of the bid to commit the bidder.
 - (b) In case of Joint Venture:
 - (i) The number of partners in the JV shall not be more than that indicated in the Bid Data Sheet (BDS);
 - (ii) Submit MOU, as per the form given in Section 4.
 - (iii) The JV shall nominate a Representative through Power of Attorney (Form given in Section 4) who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.
 - (iv) Submit Power of Attorney by individual partners to lead partners as per the form given in Section 4.
 - (v) In case a Joint Venture is the successful bidder, the Joint Venture Agreement should be entered by the Joint Venture partners. The duly signed Joint Venture Agreement should be submitted along with the Performance Security to the employer after notification of the award of contract within 28 days.
 - (c) Foreign Firm(s) should be covered under the grant of general permission to establish project offices in India (as per RBI Master Circular No.7/2015-16 updated up to the deadline for submission of bids) on securing the subject project or have already opened project office in India. In case of award of contract to a foreign firm, such foreign firm has to submit proof of having opened project office in India before submitting any interim payment certificate.
 - (d) "Bidder from a country which share a land border with India" for the purpose of this Order means:-
 - 1. An entity incorporated, established or registered in such a country; or
 - 2. A subsidiary of an entity incorporated, established or registered in such a country; or
 - 3. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - 4. An entity whose beneficial owner is situated in such a country; or
 - 5. An Indian (or other) agent of such an entity; or
 - 6. A natural person who is a citizen of such a country; or

-
7. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
- (e) The beneficial owner for the purpose of above clause will be as under:
- (i) In case of a company or Limited Liability Partnership, the beneficial owner is the nature person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation-

- a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five percent of share or capital or profits of the company;
- b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue their shareholding or management rights or shareholders agreements or voting agreements;
- (ii) In case of a partnership firm, the beneficial owner is the nature person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
- (iii) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profit of such association or body of individuals;
- (iv) Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
- (v) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

The Bidder shall submit a Certificate stating that they have read the above clause using the appropriate Performa given in Section 4- Form C1 & C2.

- 4.2 Bidders having a conflict of interest shall be disqualified. The conflict of interest is detailed below
- 4.3 A Bidder shall not have conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process, if, including but not limited to:

- (a) they have controlling shareholders in common; or
- (b) they receive or have received any direct or indirect subsidy from any of them; or
- (c) they have the same legal representative for purposes of this bid; or
- (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or
- (e) any firm, either individually or in Joint Venture (JV), submits more than one offer irrespective of whether the firm is quoting for single package or multiple packages against this bid. The bids submitted by two different bidders, having any common participant in JV formation or any common partner in partnership firms, or an individual whether in the same or different packages will be treated as having conflict of interest or
- (f) a Bidder participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; or
- (g) a Bidder was affiliated for any period(s) during last two years before the date of issue of Invitation for Bids with a firm or entity that has been hired (or is proposed to be hired) by the Employer as Engineer for the contract.

4.4 The bidder shall be disqualified if:

- (a) The bidder or any of its constituents has been blacklisted/ banned business dealings for all Government Departments or by Ministry of Railways or by K RIDE at any time till finalization of bids, except in cases where such blacklisting/ banning has been withdrawn by Competent Authority or has ceased on the deadline for submission of the bids, for which satisfactory evidence is to be produced.
- (b) Any previous contract of the bidder or any of its constituents had been terminated for contractor's failure or part terminated for its failure as a JV partner with forfeiture of its full Performance Security, by Rail Infrastructure Development Company (Karnataka) Ltd.(K RIDE) at any time starting from 3 years before the deadline for submission of bids and upto one day before the date of opening of price bids;

Provided, however, there is no stay order or declaration by any Court against such termination of the Contract by Rail Infrastructure Development Company (Karnataka) Ltd. or such termination of the Contract has not been revoked by Rail Infrastructure Development Company (Karnataka) Ltd or competent authority of K RIDE has not passed an order of non-applicability of disqualification of the bidder or any of its constituents despite such termination.

- (c) The bidder or any of its constituents has been imposed delay damages of 5% or more of contract value by K RIDE due to delay in the implementation of any previous contract within the period of last 2 years before the deadline for submission of bids (Period of 2 years shall be reckoned from the date on which the total accrued amount of Delay Damages has reached 5% or more of the contract price) or such accrued delay damages has not been fully recovered before the deadline for submission of bids on account of contractor's request for deferring recovery to maintain cash flow and K RIDE has acceded to the same in

the interest of the project or the work under the previous contract in question has not been completed before the deadline for submission of bids, unless imposition of such delay damages has been set aside by the Competent Authority.

(d) The bidder or any of its constituents:

- (i) has suffered bankruptcy/insolvency or
- (ii) has any ongoing case of insolvency before the NCLT/any Court where Interim Resolution Professional (IRP) has been appointed or is at any later stage of the insolvency process

On the deadline of submission of bids or thereafter till finalization of bids.

(e) The bidder is found ineligible by the Employer, in accordance with ITB-3.

(f) The bidder or its constituent(s) has been declared by K RIDE to be a poor performer and the period of poor performance is still in force on the deadline for submission of bids.

OR

The bidder or its constituent(s) has been declared by K RIDE to be a poor performer at any time after the deadline for submission of bids and upto one day before the date of opening of price bids.

(g) The bidder or any of its constituents has changed its name or created a new business entity as covered by the definition of "Allied Firm" under para 1102 (iii) of Chapter XI of Vigilance Manual of Indian Railways (available on website of Indian Railways), consequent to having been banned business dealings or suspended business dealings or having been declared poor performer.

The Bidder shall submit an affidavit stating that they are not liable to be disqualified as per this sub clause using the appropriate Performa given in Section 4. Non-submission of an affidavit by the bidder shall result in summary rejection of his bid.

4.5 Bidders shall immediately inform the Employer in case they cease to fulfill eligibility in terms of ITB 4.3 & 4.4. In case the bidder fails to inform the Employer or submits a false affidavit, his bid shall be summarily rejected and bid security shall be forfeited. The bidder shall also be liable for Banning of Business dealings for a period up to five years.

5 Eligible Materials, Equipment and Services

5.1 The materials, equipment and services to be supplied under the Contract shall be from the approved sources as specified in Section 5: Works Requirements.

B. Contents of Bidding Document

6 Sections of Bidding Document

- 6.1 The Bidding Document consists of Parts I, II and III, which includes all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART I: Bidding Procedures

Section 1: Instructions to Bidders (ITB)

Section 2: Bid Data Sheet (BDS)

Section 3: Evaluation and Qualification Criteria (EQC)

Section 4: Bidding Forms (BDF)

PART II: Work's Requirements

Section 5: Work's Requirements (WRQ)

PART III: Conditions of Contract and Contract Forms

Section 6: General Conditions of Contract (GCC)

Section 7: Special Conditions of Contract (SCC) - Contract Data (CD)

Section 8: Contract Forms (COF) – Annexes to SCC

Section 9: Bill of Quantities (BOQ)

- 6.2 The Invitation for Bids (IFB) issued by the Employer is not part of the Bidding Document.
- 6.3 The Employer is not responsible for the completeness of the Bidding Document and their Addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.

7 Clarification of Bidding Document, Site Visit, Pre-Bid Meeting

- 7.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer's address indicated in the BDS or raise his inquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received no later than ten (10) days prior to the deadline for submission of bids. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.
- 7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the site shall be at the Bidder's own expense.
- 7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.
- 7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS, either in person or through video conferencing. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer not later than one week before the meeting.
- 7.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting.
- 7.7 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

8 Amendment of Bidding Document

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

- 8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer.
- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2

C. Preparation of Bids

9 Cost of Bidding

- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

10 Language of Bid

- 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in English. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in English in which case, for purposes of interpretation of the Bid, such translation shall govern.

11 Documents Comprising the Bid

- 11.1 The Bid shall comprise two envelopes submitted simultaneously, one containing the Technical Bid and the other the Price Bid, enclosed together in an outer single envelope.
- 11.2 Initially, only the Technical Bids are opened at the address, date and time specified in ITB Sub-Clause 25.1. The Price Bids remain sealed and are held in custody by the Employer. The Technical Bids are evaluated by the Employer. No amendments or changes to the Technical Bids are permitted. Bids with Technical Bids which do not conform to the specified requirements will be rejected as deficient Bids.
- 11.3 Price Bids of technically compliant Bids are opened in public at a date and time advised by the Employer. The Price Bids are evaluated and the Contract is awarded to the Bidder whose Bid has been determined to be the lowest evaluated substantially responsive Bid.
- 11.4 The Technical Bid shall contain the following :
- (a) Letter of Technical Bid in accordance with ITB 16;
 - (b) Bid Security, in accordance with ITB Clause 19;

- (c) alternative Technical Bid, if permissible, in accordance with ITB Clause 13;
- (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB Clause 20.2;
- (e) documentary evidence in accordance with ITB Clause 17 establishing the Bidder's qualifications to perform the contract; and
- (f) any other document required in the BDS.

11.5 The Price Bid shall contain the following :

- (a) Letter of Price Bid and completed schedules as required including Bill of Quantities in accordance with ITB Clauses 12, and 14;
- (b) alternative Price Bid corresponding to the alternative Technical Bid, if permissible, in accordance with ITB Clause 13; and
- (c) any other document required in the BDS.

12. Bid Letters and Price Schedules

12.1 The Bidder shall submit Technical proposal (common for all Contract Packages) and Separate Price Proposal for each individual contract package using the appropriate Submission Sheets furnished in Section 4: Bidding Forms. These Forms must be completed without any alterations to their format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.

12.2 The Bidder shall submit, as part of the Price Bid, the Schedules, including the Bill of Quantities.

13. Alternative Bids

13.1 Unless otherwise indicated in the BDS, alternative bids shall not be considered.

13.2 When alternative periods for completion are explicitly invited, a statement to that effect will be included in the BDS, as will the method of evaluating different periods for completion.

14. Bid Prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Letter of Price Bid (LPB) and in the Bill of Quantities shall conform to the requirements specified below.

14.2 In the BOQ, quantity and unit rates and thereby the amount against each item have been indicated where rates as percentage are to be quoted. From this, price of such schedules have been worked out and indicated in the summary sheet in BOQ. The Bidder shall quote rates as single percentage

above/below/at par in figures and words as per format for such schedule in the summary sheet. **If any bidder quotes more than one percentage for such schedules, its bid shall be summarily rejected.**

- 14.3 The price to be quoted in the Letter of Price Bid, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any unconditional discounts and the methodology for their application (the discounts, and the methodology of their application, should be quoted on prices quoted in the bid so that the discounts can be evaluated by simple arithmetic calculation during financial evaluation of the bids, to arrive at the net total price of the bid. If the net total price cannot be calculated after application of the methodology of the discount(s) quoted, the bid shall be considered as incomplete and will be rejected) in the Letter of Price Bid, in accordance with ITB 12.1. However, any conditional discount if any offered for award of any specific combination of contract package(s) has to be quoted separately for each specific combination and to be submitted in separate envelope(s).
- 14.5 Unless otherwise provided in the BDS and the Contract, the rates and prices quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract. In such a case, the indices and weightings for the price adjustment formulae shall be as specified in the Tables of Adjustment Data included in Contract Data.
- 14.6 If so, indicated in ITB 1.1, bids are being invited for individual contracts or for any combination of contracts (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 14.4, provided the bids for all contracts are submitted and opened at the same time.
- 14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause (including standard specifications), as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.
- 14.8 Bidders should note that during the progress of the works, the foreign currency requirements of the outstanding balance of the Contract Price may be adjusted by agreement between the Employer and the Contractor in order to reflect any changes in foreign currency requirements for the Contract, in accordance with Sub-Clause 14.15 of the Conditions of Contract. Any such adjustment shall be effected by comparing the percentages quoted in the bid with the amounts already used in the Works and the Contractor's future needs for imported items.
- 14.9 Bidder should note that non-submission of the Letter of Price Bid (LPB) and/or Summary sheet of BOQ by the bidder shall result in summary rejection of his bid.

15. Currencies of Bid and Payment

- 15.1 The bidder shall quote the unit rates and the prices entirely in the Indian Rupees.

16. Documents Comprising the Technical Bid

- 16.1 The Bidder shall furnish a commitment in Letter of Technical Bid (LTB) for deployment of equipment and personnel as stipulated in Section 5: Work's Requirement.
- 16.2 The bidder shall furnish commitment in LTB for submitting construction method statement for all major activities of work and get this approved from the engineer prior to the commencement of work on that activity in case of award of contract.
- 16.3 The Bidder shall furnish a commitment in Letter of Technical Bid (LTB) for adhering to mobilisation and construction schedule as stipulated in Section 5: Work's Requirement.
- 16.4 Bidder should note that non-submission of the Letter of Technical Bid (LTB) by the bidder shall result in summary rejection of his bid.

17. Documents Establishing the Qualifications of the Bidder

- 17.1 To establish its qualifications to perform the Contract in accordance with Section 3: Evaluation and Qualification Criteria, the Bidder shall submit as part of its technical Bid the information requested in the corresponding information sheets included in Section 4: Bidding Forms.
- 17.2 Domestic Bidders, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility.

18. Period of Validity of Bids

- 18.1 Bids shall remain valid for a period of 120 days after the bid submission deadline date prescribed by the employer. A bid valid for a shorter period shall be rejected by the employer as non-responsive.
- 18.2 In exceptional circumstances, the Employer may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 19, it shall also be extended upto the date mentioned in the letter of request for extension. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its bid.

19. Bid Security

- 19.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its bid, a bid security in original form and for the said amount of Indian Rupees as specified in the BDS.
- 19.2 The bid security shall be, at the Bidder's option, in any of the following forms:
- (a) A Cashiers or Banker's certified cheque or Bank draft drawn on a Scheduled/Nationalized Bank in India in favour of "Rail Infrastructure Development Company (Karnataka) Ltd" payable at Bangalore;
 - or
 - (b) An unconditional bank guarantee using the Form given in Section 4: Bidding Forms. The bank guarantee shall be from a bank having minimum net worth of over INR 500 million from the specified banks as under:
 - (i) a Scheduled Bank in India, or
 - (ii) a Foreign Bank having their operations in India, or
 - (iii) a Foreign Bank which do not have operations in India is required to provide a counter-guarantee by State Bank of India,
- The bid security shall be valid upto the date as mentioned in BDS, or upto the date mentioned in the letter of request for extension, if any under ITB 18.2.
- 19.3 Any bid not accompanied by an enforceable and compliant bid security, as required in accordance with ITB 19.1, shall be summarily rejected by the Employer as non-responsive.
- 19.4 The bid security of the Bidders who have been determined to be unqualified for opening of their financial bids shall be returned within 3 working days after the opening of financial bids. The Bid Security of unsuccessful bidders shall be returned within 7 working days after issue of LOA to the successful Bidder.
- 19.5 The bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.
- 19.6 The bid security may be forfeited:
- (a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bids, except as provided in ITB 18.2 or
 - (b) if a Bidder misrepresents or omits the facts in order to influence the procurement process;
 - (c) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 40;
 - (ii) furnish a performance security in accordance with ITB 41;
 - (iii) accept the correction of its Bid Price pursuant to ITB 32.2; or
 - (iv) furnish a domestic preference security if so required.
 - (d) if the undertaking of the affidavit submitted by the bidder or its constituents in pursuance to ITB clause 4.4 or any of the declarations of

Letter of Technical Bid or Letter of Price Bid submitted by the bidder has been found to be false at any stage during the process of bid evaluation.

- 19.7 The Bid Security of a JV shall be in the name of the JV that submits the bid. If the JV has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.

20. Format and Signing of Bid

- 20.1 The Bidder shall prepare one original of the Technical Bid and one original of the Price Bid as described in ITB Clause 11 and clearly mark each "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID". In addition, the Bidder shall submit copies of the Technical Bid and the Price Bid, in the number specified in the BDS and clearly mark them "COPY NO... - TECHNICAL BID" and "COPY NO.... - PRICE BID". In the event of any discrepancy between the original and the copies, the original shall prevail.
- 20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid, except for un-amended printed literature, shall be signed or initialed by the person signing the bid.
- 20.3 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

- 21.1 The Bidder shall enclose the original of the Technical Proposal which shall be common for all contract packages and marked "ORIGINAL TECHNICAL PROPOSAL". The original of Price Proposal for each individual Contract Package and Conditional Discount(s) if any for award of any of the specific combination(s) of Contract Packages have to be submitted in separate sealed packets and each packet to be marked any of the following:
- (i) Original price proposal for contract package no. 1;
 - (ii) Original price proposal for contract package no. 2;
 - (iii) Original price proposal for contract package no. 3;
 - (iv) Conditional discount for award of contract package no. 1&2 both;
 - (v) Conditional discount for award of contract package no. 1&3 both;
 - (vi) Conditional discount for award of contract package no. 2&3 both;

- (vii) Conditional discount for award of all contract package i.e. No. 1, 2 & 3 together;

The above separate sealed envelopes should, again be sealed in one bigger envelope and marked **ORIGINAL PRICE PROPOSAL**

21.2 The inner and outer envelopes shall:

- (a) bear the name and address of the Bidder;
- (b) be addressed to the Employer in accordance with BDS 22.1;
- (c) bear the specific identification of this bidding process indicated in the BDS 1.1; and
- (d) The outer envelopes and the inner envelopes containing the Technical Bids shall bear a warning not to open before the time and date for the opening of Technical Bids, in accordance with ITB Sub-Clause 25.
- (e) The inner envelopes containing the Price Bids shall bear a warning not to open until advised by the Employer in accordance with ITB Sub-Clause 25.

21.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

21.4 In case Price Bid in a bid is received unsealed or Price Proposal Submission Sheet of a particular package is found available in any other package then the bid for that particular package shall be considered as non-responsive and will be returned to the bidder immediately.

21.5 Alternative Bids, if permissible in accordance with ITB Clause 13, shall be prepared, sealed, marked, and delivered in accordance with the provisions of ITB Clauses 22 and 23, with the inner envelopes marked in addition "ALTERNATIVE NO...." as appropriate.

21.6 No details about price proposal shall be disclosed directly or indirectly in the technical proposal failing which the bid shall be rejected.

22. Deadline for Submission of Bids

22.1 Bids must be received by the Employer at the address and not later than the date and time indicated in the BDS.

22.2 The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders subject to the previous deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

23.1 The Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

- 24.1 A Bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding withdrawal of substitution or modification of the bid must accompany the respective written notice. All notices must be:
- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL of Package No. 1 OR Package No. 2 OR Package No. 3", "SUBSTITUTION of Package No. 1 OR Package No. 2 OR Package No. 3", "MODIFICATION of Package No. 1 OR Package No. 2, OR Package No. 3", and
 - (b) received by the Employer prior to the deadline prescribed for submission of bids, in accordance with ITB 22.
- 24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.
- 24.3 No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.

25. Bid Opening

- 25.1 The Employer shall conduct the opening of Technical Bids in the presence of Bidders' representatives who choose to attend, at the address, date and time specified in the BDS.
- 25.2 The Price Bids will remain unopened and will be held in custody of the Employer until the time of opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer to all the bidders who have been determined qualified in technical evaluation.
- 25.3 First, envelopes marked "WITHDRAWAL" shall be opened, read out, and recorded, and the envelope containing the corresponding Bid shall not be opened, but returned to the Bidder. No Bid shall be withdrawn unless the corresponding Withdrawal Notice contains a valid authorization to request the withdrawal and is read out and recorded at bid opening.
- 25.4 Next, outer envelopes marked "SUBSTITUTION" shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bids will remain unopened in accordance with ITB Sub-Clause 25.2. No envelope shall be

substituted unless the corresponding Substitution Notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.

25.5 Next, outer envelopes marked "MODIFICATION" shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with ITB Sub-Clause 25.2.

25.6 All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded :

- (a) the name of the Bidder;
- (b) whether there is a modification or substitution;
- (c) the presence of a Bid Security, if required; and
- (d) any other details as the Employer may consider appropriate.

Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB Sub-Clause 23.1.

25.7 The Employer shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, modification, or alternative offer; and the presence or absence of a Bid Security, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

25.8 At the end of the evaluation of the Technical Bids, the Employer will invite bidders who have submitted substantially responsive Technical proposals and who have been determined as being qualified for award of specific packages to attend the opening of the price Proposals. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer. Bidders shall be given reasonable notice of the opening of Price Bids.

25.9 The Employer will notify Bidders in writing who have been rejected on the grounds of being substantially non-responsive to the requirements of the Bidding Document and who have been determined as being not qualified as a result of evaluation of technical proposal for individual package and their unopened Price Proposal for that particular package along with bid security shall be returned. Similarly, the conditional discount envelopes, with condition of award of specific combination of packages shall not be opened and returned unopened, if the bidder has been determined as being not qualified as a result of evaluation of technical proposal for that combination of packages.

- 25.10 The Employer shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids and who have been determined qualified as a result of technical evaluation, in the presence of Bidders' representatives who choose to attend at the address, date and time specified by the Employer. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.
- 25.11 All envelopes containing Price Proposals of a particular package shall be opened one at a time and the following read out and recorded :
- (a) the name of the Bidder
 - (b) whether there is a modification or substitution;
 - (c) the Bid Price(s), including any discounts and alternative offers; and
 - (d) any other details as the Employer may consider appropriate.
- Only Price Bids, discounts, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. No Bid shall be rejected at the opening of Price Bids.
- 25.12 The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum: the name of the Bidder, the Bid Price (per contract if applicable), any discounts, and alternative offers. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

E. Evaluation and Comparison of Bids

26. Confidentiality

- 26.1 Information relating to the examination, evaluation & comparison, pre-qualification of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.
- 26.2 Any attempt by a Bidder to influence the Employer in the examination, evaluation & comparison and pre-qualification of the Bids or Contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB Sub-Clause 26.2, from the time of opening the Technical Bids to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it should do so in writing.

27. Clarification of Bids

- 27.1 To assist in the examination, evaluation & comparison and pre-qualification of the Bids, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request

by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of errors discovered by the Employer in the evaluation of the Price Bids, in accordance with ITB Clause 32.

- 27.2 If a Bidder does not provide clarifications of its bid by the date and time set in the Employer's request for clarification, its bid may be rejected.

28. Deviations, Reservations, and Omissions

- 28.1 During the evaluation of bids, the following definitions apply:

- (a) "Deviation" is a departure from the requirements specified in the Bidding Document;
- (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
- (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.

29. Determination of Responsiveness

- 29.1 The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB11.
- 29.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,
- (a) if accepted, would:
 - (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - (ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer's rights or the Bidder's obligations under the proposed Contract; or
 - (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.
- 29.3 The Employer shall examine the technical aspects of the bid submitted in accordance with ITB 16, Technical Bid, in particular, to confirm that all requirements of Section 5 (Works Requirements) have been met without any material deviation or reservation.
- 29.4 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

30. Nonconformities, Errors, and Omissions

- 30.1 Provided that a bid is substantially responsive, the Employer may waive any nonconformities in the bid that do not constitute a material deviation, reservation or omission.
- 30.2 Provided that a bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the bid. Failure of the Bidder to comply with the request may result in the rejection of its bid.

31. Pre-Qualification of the Bidder

- 31.1 The Employer shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders are qualified to perform the Contract satisfactorily.
- 31.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB Clause 17, to clarifications in accordance with ITB Clause 27 and the qualification criteria indicated in Section 3: Evaluation and Qualification Criteria. Factors not included in Section 3: Evaluation and Qualification Criteria shall not be used in the evaluation of the Bidder's qualification.
- 31.3 An affirmative determination of technical bid shall be a prerequisite for the opening and evaluation of a Bidder's Price Bid. A negative determination shall result into the disqualification of the Bid, in which event the Employer shall return the unopened Price Proposal to the Bidder.

32. Correction of Arithmetical Errors and Omissions in Price Bid and Evaluation of Bid Price

- 32.1 Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors and omissions in the price bid and then arrive at the Evaluated Bid Price on the following basis:
 - (a) If there is a discrepancy between the price mentioned in the summary sheet of the BOQ and the price that is obtained by calculation i.e. by taking into account the percentage rate quoted above/below/at par for any bill/schedule in the summary sheet of BOQ, then the quoted percentage rate shall prevail and the price shall be corrected accordingly;
 - (b) if the percentage rate has been quoted both in words and in figures and there is a discrepancy in such rates, then the rate in words shall prevail and shall be considered for evaluation of the price of the schedule/bill;
 - (c) If the percentage rate has been quoted either in words or in figures only, then the same shall be considered for evaluation of the price of the schedule/bill;
 - (d) If no percentage rate has been indicated for any particular schedule/bill in words, as well as in figures, irrespective of the fact whether the bidder has

written or not written above/below/at par, in such cases, the rate shall be considered as at par and the price shall be calculated accordingly;

- (e) If the bidder has indicated a percentage rate other than zero percent without mentioning whether it is above/below or has mentioned it as at par, in such cases the percentage rate shall be considered as at par and the price shall be calculated accordingly;
- (f) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.
- (g) The rate for each item of each schedule/bill shall first be calculated after applying percentage rate and discount(s) to the BOQ rate for that item and the net rate shall be rounded off to 2 decimal places. The net rate so calculated shall then be used for working out the amount for each item of the schedule/bill. Thereafter, evaluated price of a schedule shall be calculated as the sum of amounts of all items of that schedule and sum of evaluated prices of all schedules/bills shall be the overall Evaluated Bid Price.

32.2 If the Bidder that has submitted the lowest evaluated bid does not accept the correction of errors and omissions as per above provisions, its bid shall be disqualified and its bid security shall be forfeited.

33. Conversion to Single Currency

33.1 For evaluation and comparison purposes the currencies of the bid shall be converted into Indian Rupees as stated in BDS.

34. Purchase Preference

34.1 Unless otherwise specified in the BDS the Purchase Preference shall not apply.

34.2 Unless otherwise specified in the BDS the Domestic Preference shall not apply.

35. Evaluation of Bids

35.1 The Employer shall evaluate Price Bids of each Bid for which the Technical Bids have been determined to be substantially responsive. The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

35.2 To evaluate the price Bid of a bid, the Employer shall consider the following:

- (a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including Day Work items, where priced competitively;
- (b) price adjustment for correction of arithmetic errors and omissions in the price bid in accordance with ITB 32.1;
- (c) price adjustment due to discounts offered in accordance with ITB 14.4;

- (d) Application of all the evaluation factors indicated in Section 3 (Evaluation and Qualification Criteria).

35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.

35.4 If this Bidding Document allows Bidders to quote separate prices for different contracts, and the award to a single Bidder of multiple contracts, the methodology to determine the lowest evaluated price of the contract combinations, including any discounts offered in the Letter of Price Bid, is specified in Section 3 (Evaluation and Qualification Criteria).

35.5 If the bid, which results in the lowest Evaluated Bid Price is substantially on lower side and/or seriously unbalanced in the opinion of the Employer as per criteria defined below, the Employer may require the bidder to submit additional performance security as under:-

- a) If overall price quoted by the L1 bidder is below the engineer's estimated price by more than 10% and the difference between overall price quoted by the L1 and L2 is more than 5% of the estimated price, then the bid price of L1 bidder shall be treated as substantially on lower side and such bidder shall be bound to furnish additional performance security equal to the $(0.9 \times \text{engineer's estimated price} - \text{L1 price})$ or $(0.95 \times \text{L2 price} - \text{L1 price})$ whichever is lower, on this account. Example below demonstrates the method of calculation to arrive at additional performance security:

Suppose overall price quoted by the L1 bidder is 17% below the estimated price and the overall price quoted by L2 bidder is 8% below the estimated price. In this case the overall price quoted by the L1 bidder is lower by more than 10% of the estimated price and also the difference between overall price quoted by the L2 and L1 bidder is more than 5% of the estimated price, hence the L1 bidder shall be required to furnish additional performance security for an amount equal to

$\{0.9 \times \text{engineer's estimated price} - (1-17/100) \times \text{engineer's estimated price}\}$
= $\{0.07 \times \text{engineer's estimated price}\} = 7\%$ of engineer's estimated price or
 $\{0.95 \times (1-8/100) \times \text{engineer's estimated price} - (1-17/100) \times \text{engineer's estimated price}\} = \{0.044 \times \text{engineer's estimated price}\} = 4.4\%$ of engineer's estimated price; whichever is lower.

As per the above L1 bidder shall be required to submit additional performance security of 4.4% of engineer's estimated price.

- b) If for any bill/ schedule of quantities % age above or below quoted by the bidder on the estimated price is beyond 15% below the overall % age difference between the quoted contract price and the engineers estimated price, then the price for that particular schedule shall be treated as seriously unbalanced and bidder shall be bound to furnish additional performance security for such unbalanced price. Example below

demonstrates the method of calculation to arrive at unbalanced price and additional performance security:

Suppose for the L1 bidder overall % age difference between quoted contract price and the engineers estimated price;

$(\text{Overall contract price} - \text{Overall estimated price}) \times 100 \div \text{overall estimated price} = +4\%$

Maximum % age below permitted over estimated price of any bill / schedule in this case = $+4 - 15 = -11\%$

Suppose for the L1 bidder has quoted 20% below estimated price of schedule "A" then the pricing of the schedule A shall be treated as unbalanced and the bidder shall be required to furnish additional performance security for an amount equal to $(20 - 11)\%$ of the estimated price of schedule A.

36. Comparison of Bids

- 36.1 The Employer shall compare all substantially responsive bids to determine the lowest evaluated bid, in accordance with ITB 34 and 35.

37. Employer's Right to Accept Any Bid, and to Reject Any or All Bids

- 37.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

F. Award of Contract

38. Award Criteria

- 38.1 The Employer shall award the Contract to the Bidder whose bid is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily and whose offer has been determined to be the lowest evaluated subject to ITB 38.2 below. In case of more than one bids are evaluated to be lowest, Contract shall be awarded to the bidder having higher average annual construction turnover (calculated as total certified payments received for contracts in progress or completed) in equivalent INR within the last three financial years.
- 38.2 The Employer has the right to review at any time prior to award of contract that the qualification criteria as specified in Section 3: Evaluation and Qualification Criteria are still being met by the Bidder whose offer has been determined to be the lowest evaluated Bid. A Bid shall be rejected if the qualification criteria as specified in Section 3: Evaluation and Qualification Criteria are no longer met by the Bidder whose offer has been determined to be the lowest evaluated Bid. In this event the Employer shall proceed to the next lowest evaluated Bid to make a similar reassessment of that Bidder's capabilities to perform satisfactorily.

39. Notification of Award

- 39.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, that its bid has been accepted by the Competent Authority at K RIDE's Corporate Office at Bangalore. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Contractor in consideration of the execution and completion of the Works (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price") and the requirement for the Contractor to remedy any defects therein as prescribed by the Contract.
- 39.2 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

40. Signing of Contract

- 40.1 Promptly after notification, the Employer shall send the successful Bidder the Contract Agreement.
- 40.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

41. Performance Security

- 41.1 On receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in accordance with the conditions of contract, subject to ITB 35.5, using for that purpose the Performance Security Form included in Section 8: Contract Forms, or another form acceptable to the Employer.
- 41.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security.
- 41.3 The above provision shall not apply to the furnishing of a Domestic Preference Security, if so required.

42. Jurisdiction of Courts

The bidding process shall be governed by and construed in accordance with the laws of India and the Courts as indicated in Bid Data Sheet shall have exclusive jurisdiction over all the disputes/issues arising under, pursuant to and/ or in connection with the bidding process.

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Section 2	Bid Data Sheet (BDS)
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Section 2	Bid Data Sheet (BDS)
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This section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section I – Instructions to Bidders.

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D	Submission and Opening of Bids	33-34

A. Introduction

ITB 1.1	The number of the Invitation for Bids is: K RIDE/Projects/59//2020 Date : 01.10.2020
ITB 1.1	The Employer is: K RIDE (Rail Infrastructure Development Company (Karnataka) Limited), Bangalore
ITB 1.1	The name of the work is: Baiyyappanahalli - Hosur Doubling - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations in Single package.
ITB 4.1(b)(i)	No. of partners : 2

B. Bidding Documents

ITB 7.1	For <u>clarification purposes</u> only, the Employer's address is General Manager (Civil), K RIDE (Rail Infrastructure Development Company (Karnataka) Limited) MSIL House, 7th Floor, #36, Cunningham Road Bangalore – 560052 Tel - (080) 22370582, Fax - (080) 22370581 E – Mail: md@kride.in
ITB 7.4	Site visit is not proposed to be organized by the Employer. However, the bidders are advised to visit the site before bidding.

C. Preparation of Bids

ITB 10.1	The language of the bid is: English
ITB 11.2	Alternative technical solutions are not permitted.
ITB 11.4 (f)	Checklist as per Form No. 2 given in Section 4: Bidding Forms
ITB 13.1	Alternative bids are not permitted.

ITB 13.2	Alternative times for completion are not permitted.
ITB 14.5	The prices quoted by the Bidder shall be adjustable in accordance with the provisions in Sub Clause 13.8 of GCC, Section 7, Part B; Particular Conditions of Contract.
ITB 15.1	The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees (INR)
ITB 18.1	The bid validity period shall be 120 (One hundred and twenty only) days.
ITB 19.1	The Bidder should submit along with the bid, a bid security as mentioned in the notice for invitation of Bids.
ITB 19.2	The bid security shall be valid up to 42 days beyond the <i>bid validity period</i>
ITB 20.1	In addition to the original of the bid, the number of copies is: NIL
ITB 20.2	<p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of:</p> <p>(a) In case of Companies, a POA from the Director of the Company who has been authorized by the Board of Directors through resolution to sign on behalf of the Company</p> <p>(b) In case of firms, Power of Attorney by the Proprietors.</p> <p>(c) In case of JV, POA by the JV partners.</p>

D. Submission and Opening of Bids

ITB 22.1	<p>For <u>bid submission purposes</u> only, the Employer's address is:</p> <p>General Manager (Civil)/K RIDE, K RID (Rail Infrastructure Development Company (Karnataka) Limited) MSIL House, 7th Floor, #36, Cunningham Road Bangalore – 560052</p> <p>Tel - (080) 22370582, Fax - (080) 22370581</p>
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	<p>E – Mail: md@kride.in</p> <p>The deadline for bid submission is: Date: 27.10.2020 Time: 15:00 hrs.</p>																
ITB 22.2	Electronic bid submission is not permitted.																
ITB 25.1	<p>The bid opening shall take place at:</p> <p>Rail Infrastructure Development Company (Karnataka) Limited</p> <table> <tr> <td><i>Floor/Room No.</i></td><td>MSIL House, 7th Floor,</td></tr> <tr> <td><i>Street Address</i></td><td>#36, Cunningham Road</td></tr> <tr> <td><i>City</i></td><td>Bangalore</td></tr> <tr> <td><i>Pin Code</i></td><td>560052</td></tr> <tr> <td><i>Country</i></td><td>Indian Republic</td></tr> <tr> <td><i>Tel. No.</i></td><td>(080) - 22370582</td></tr> <tr> <td><i>Fax:</i></td><td>080 - 22370581</td></tr> <tr> <td><i>E – Mail</i></td><td>md@kride.in</td></tr> </table> <p><u>Bid Opening:</u> Date: 27.10.2020 Time: 15:30 hrs.</p>	<i>Floor/Room No.</i>	MSIL House, 7th Floor,	<i>Street Address</i>	#36, Cunningham Road	<i>City</i>	Bangalore	<i>Pin Code</i>	560052	<i>Country</i>	Indian Republic	<i>Tel. No.</i>	(080) - 22370582	<i>Fax:</i>	080 - 22370581	<i>E – Mail</i>	md@kride.in
<i>Floor/Room No.</i>	MSIL House, 7th Floor,																
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<i>Tel. No.</i>	(080) - 22370582																
<i>Fax:</i>	080 - 22370581																
<i>E – Mail</i>	md@kride.in																
ITB 25.2	Electronic bid opening procedure is Not permitted.																
ITB 42	Bangalore																

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Section 3	Evaluation & Qualification Criteria (EQC)
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Section 3	Evaluation & Qualification Criteria (EQC)
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2	Eligibility Criteria	36-41
3	Table showing the eligibility criteria limits	42

K RIDE

1

Evaluation

In addition to the criteria listed in ITB 35.2 (a)-(d), the following criteria shall apply:

1.1. Adequacy of Bid

Evaluation of the Bidder's commitment to mobilize key equipment and personnel for the contract consistent with the requirements stipulated in Section 5: Works Requirements regarding work methods, scheduling, and material sourcing.

1.2. This Provision shall not apply

1.3. Completion Time

Alternative Completion Time is not permitted.

1.4. Technical Alternatives

Technical alternatives are not permitted

1.5. Margin of Preference

1.5.1. Purchase Preference to Central Public Sector Enterprises (CPSEs)

Purchase Preference to CPSEs shall not apply.

1.5.2. Domestic Preference

Domestic Preference is not applicable.

2. Eligibility Criteria:

2.1 Technical Eligibility Criteria:

(a) The tenderer must have successfully completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

- Three similar works each costing not less than the amount equal to 30% of advertised value of the tender,
or
- Two similar works each costing not less than the amount equal to 40% of advertised value of the tender,
or

- One similar work each costing not less than the amount equal to 60% of advertised value of the tender.
- **Similar work is defined as below :**
Execution of any bridge works involving open / pile / well foundation and Superstructure of I Girder / Open Web Girder / Semi Through Girder / Through Girder / Bowstring Girder.

(b) (i) In case of tenders for composite works (e.g. works involving more than one distinct component, such as Civil Engineering works, S&T works, Electrical works, OHE works etc. and in the case of major bridges – substructure, superstructure etc.), tenderer must have successfully completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

Three similar works each costing not less than the amount equal to 30% of advertised value of each component of tender, or

Two similar works each costing not less than the amount equal to 40% of advertised value of each component of tender, or

One similar work each costing not less than the amount equal to 60% of advertised value of each component of tender.

Note for b (i): Separate completed works of minimum required values for each component shall also be considered for fulfilment of technical eligibility criteria.

- (b) (ii) In such cases, what constitutes a component in a composite work shall be clearly predefined with estimated tender cost of it, as part of the tender documents without any ambiguity.
- (b) (iii) To evaluate the technical eligibility of tenderer, only components of work as stipulated in tender documents for evaluation of technical eligibility, shall be considered. The scope of work covered in other remaining components shall be either executed by tenderer himself if he has work experience as mentioned or through subcontractor approved by K RIDE or jointly i.e., partly himself and remaining through subcontractor, with prior approval of K RIDE in writing.

However, if required in tender documents by way of Special Conditions, a formal agreement duly notarised, legally enforceable in the court of law, shall be executed by the main contractor with the subcontractor for the component(s) of work proposed to be executed by the subcontractor(s), and shall be submitted along with the offer for considering subletting of that scope of work towards fulfilment of technical eligibility.

In case after award of contract or during execution of work it becomes necessary for contractor to change subcontractor, the same shall be done with prior approval of K RIDE.

Note for Item 2.1:

Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organisation, work experience certificate issued by Public listed company having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, incorporated/registered at least 5 years prior to the date of opening of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.

In case tenderer submits work experience certificate issued by public listed company, the tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

2.2. Financial Eligibility Criteria: The tenderer must have received contractual payments in the previous three financial years and the current financial year up to the date of inviting of tender, at least 150% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department / client or Audited Balance Sheet duly certified by the Chartered Accountant / Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

Note for 2.2: Client certificate from other than Govt Organization should be duly supported by Form 16 A / 26 AS generated through TRACES of Income Tax Department of India.

2.3. Bid Capacity: The tender/technical bid will be evaluated based on bid capacity formula detailed as below:

For tenders costing more than Rs 20 crore wherein eligibility criteria includes bid capacity also, the tenderer will be qualified only if its available bid capacity is equal to or more than the total bid value of the present tender. The available bid capacity shall be calculated as under:

$$\text{Available Bid Capacity} = [A \times N \times 2] - B$$

Where,

A = Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender), taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of work for which bids has been invited.

B = Value of existing commitments and balance amount of ongoing works with the tenderer to be completed in next 'N' years.

Note:

- (a) The Tenderer(s) shall furnish the details of existing commitments and balance amount of on-going works with tenderer as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tenderer but yet not started upto the date of inviting of tender. In case of no works in hand, a 'NIL' statement should be furnished. This statement should be submitted duly verified by Chartered Accountant.
- (b) In case of JV, the tenderer(s) must furnish the details of existing commitments and balance amount of on going works with each member of JV as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tenderer but yet not started upto the date of inviting of tender. In case of no works in hand, a 'NIL' statement should be furnished. This statement should be submitted duly verified by Chartered Accountant.
- (c) Value of a completed work/work in progress/work awarded but yet not started for a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned bid capacity in the tender under consideration.
- (d) The arithmetic sum of individual "bid capacity" of all the members shall be taken as JV's "bid capacity".
- (e) In case, the tenderer/s failed to submit the above statement along with offer, their/his offer shall be considered as incomplete and will be rejected **summarily**.
- (f) The available bid capacity of tenderer shall be assessed based on the details submitted by the tenderer. In case, the available bid capacity is lesser than estimated cost of work put to tender, his offer shall not be considered even if he has been found eligible in other eligibility criteria/tender requirement.

2.4 No Technical and Financial credentials are required for tenders having value up to Rs 50 lakh.

2.5 Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under:

The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for the relevant date. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date.

[Explanation for clause 2 including clause 2.1 to 2.5 - Eligibility Criteria:

1. In case a work is started prior to 07 (seven) years, ending last day of month previous to the one in which tender is invited, but completed in last 07 (seven) years, ending last day of month previous to the one in which tender is invited, the completed work shall be considered for fulfilment of credentials.
2. If a work is physically completed and completion certificate to this extent is issued by the concerned organization but final bill is pending, such work shall be considered for fulfilment of credentials.
3. If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfilment of technical credentials even if the cost of part completed work/component is more than required for fulfilment of credentials.
4. **In case a work is considered similar in nature for fulfilment of technical credentials, the overall cost of that work including PVC amount if any shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.**
5. The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work.
6. In case of newly formed partnership firm, the credentials of individual partners from previous proprietary firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of 0.3×0.2 * value of the work done in the previous entity. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.
7. In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm (e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.

8. In case of existing partnership firm if any other partner(s) joins the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.
9. Any partner in a partnership firm cannot use or claim his credentials in any other firm without leaving the partnership firm i.e., In a partnership firm of A&B partners, A or B partner cannot use credentials of partnership firm of A&B partners in any other partnership firm or proprietary firm without leaving partnership firm of A&B partners.
10. In case a partner in a partnership firm is replaced due to succession as per succession law, the proportion of credentials of the previous partner will be passed on to the successor.
11. If the percentage share among partners of a partnership firm is changed, but the partners remain the same, the credentials of the firm before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, in case a partner of partnership firm retires without taking away any credentials from the firm, the credentials of partnership firm shall remain the same as it is without any change in their value.
12. In a partnership firm "AB" of A&B partners, in case A also works as proprietary firm "P" or partner in some other partnership firm "AX", credentials of A in proprietary firm "P" or in other partnership firm "AX" earned after the date of becoming a partner of the firm AB shall not be added in partnership firm AB.
13. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.
14. In case company A is merged with company B, then company B would get the credentials of company A also.]

3. Table showing the eligibility criteria limits**Rs. in Crores**

	Minimum Value of qualifying criteria			
	SW1 - 30%	SW2 - 40%	SW3 - 60%	FE. 150%
Value	5.26	7.02	10.52	26.31

Note:**1) Technical Eligibility Criteria: (Clause 2.1 of section3)**

The tenderer must have successfully completed any of the following during last 07(seven) years, ending last day of month previous to the one in which tender is invited:

SW1 : Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, **or**

SW2 : Two similar works each costing not less than the amount equal to 40% of advertised value of tender, **or**

SW3 : One similar work each costing not less than the amount equal to 60% of advertised value of tender.

2) Financial Eligibility Criteria: (Clause 2.2 of section 3)

F.E : The tenderer must have received contractual payments in the previous three financial years and the current financial year up to the date of inviting of tender, at least 150% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department / client or Audited Balance Sheet duly certified by the Chartered Accountant / Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

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Section 4

Bidding Forms

Section 4	Bidding Forms
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This Section contains the forms which are to be completed by the Bidder and submitted as part of his Bid .

S.No	Title	Form Number	Page No
1	Letter of Technical Bid	PS 1	45-47
2	Letter of Price Bid	PS 2	48-49
3	Format for Affidavit (along with Bid)	PS 5	50-52

S.No	Title	Form Number	Page No
4	Bid Security Form	BDF/1	53-55
5	Letter of participation from Each partner of joint venture (JV)	JV/1	56-57
6	Power of attorney for authorized signatory Of joint venture (JV) partners	JV/2	58
7	Power of attorney to Lead partner of joint venture (JV)	JV/3	59-60
8	Draft MoU for JV	JV/4	61-65
9	Draft Joint Venture Agreement	JV/5	66-69

S No	Title	Form Number	Page No
	Bidder Qualification		70
10	Bidder's Information Sheet	ELI - 1	71
11	JV Information Sheet	ELI – 2	72
12	Financial Situation	FIN - 1	73-74
13	Average Annual Construction Turnover	FIN – 2	75
14	Current Contract Commitment	FIN - 3	76
15	Specific Construction Experience	EXP – 2(a)	77
16	Specific Construction Experience in Key Activities	EXP – 2(b)	78
17	EQC	Form No 1	79
18	Checklist for clauses pertaining to Summary Rejection of bid	Form No 2	80
19	Format for certificate on Procurement.	Form C1 & C2	81-82

Form: PS 1

Letter of Technical Bid

Date:

Invitation for Bid No.:

To:

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB);
- (b) We offer to execute the Works in conformity with the Bidding Documents ;
- (c) Our bid shall be valid for a period of 120 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;
- (e) If our bid is accepted, we commit to deploy key equipment and key personnel consistent with the requirements stipulated in Section 5: Works Requirements;
- (f) If our bid is accepted, we commit to submit work method statements for all major activities and get these approved from the engineer prior to commencing work on such activities. We also understand that the work shall be executed as per the approved method statements without any deviations;

- (g) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3;
- (h) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB 4.3, other than alternative offers submitted in accordance with ITB 13;
- (i) We declare that we are not liable to be disqualified in Accordance with ITB 4.4, and we are enclosing the affidavit for the same as per the Performa given in the bid document.
- (j) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (k) We have not made any deviations from the requirement of the bidding document and we have also not made any tampering or changes in the bidding documents on which the bid is being submitted and if any tampering or changes are detected at any stage, we understand the bid will invite summary rejection and forfeiture of bid security/the contract will be liable to be terminated along with forfeiture of performance security, even if LOA has been issued.
- (l) We understand that we will be considered to be participating for all the package(s) for which we have submitted the bid security(ies) and we will be considered for award of the following, subject to fulfilling the eligibility criteria as given in bidding document;
 - i. Such individual package(s) for which we have submitted the bid security (ies); and
 - ii. All possible combinations of such individual packages except the following combination(s) of packages for which we are NOT willing to be considered for award;
 - a. -----
 - b. -----
- (m) If our bid is accepted, we opt to take payment into the bank account, nominated by us.

Or

If our bid is accepted, we opt to take payment through Letter of Credit(LC) arrangement as per GCC clause 14.7.1 and we hereby affirm having read over and agreed to the terms and conditions of the LC option. We also understand that the option of taking payment through LC arrangement, shall be final and no change shall be permitted, thereafter, during execution of contract.

[Delete whichever is not applicable. In case the bidder fails to delete one of the two options above, the option of payment into the bank account, nominated by the contractor shall prevail]

- (n) We declare that the submission of this bid confirms that no agent, middleman or any intermediary has been, or will be engaged to provide any services or any other item of work related to the award and performance of this contract. We further confirm and declare that no agency commission or any payment which may be construed as an agency commission has been, or will be, paid and that the bid price does not include any such amount. We acknowledge the right of the Employer, if he finds to the contrary, to declare our bid to be noncompliant and if the contract has been awarded to declare the contract null and void
- (o) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

Form: PS 2

Letter of Price Bid

Date:

Invitation for Bid No.:

To:

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8;
- (b) We offer to execute the Work in conformity with the Bidding Documents;
- (c) The total price of our Bid, excluding any discounts offered in item (d) below is.....
.....
.....
- (d) The discounts offered and the methodology for their application (see note below) are.....
.....
.....
- (e) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (f) We have not made any deviations from the requirement of the bidding document and we have also not made any tampering or changes in the bidding documents on which the bid is being submitted and if any tampering or changes are detected at any stage, we understand the bid will invite summary rejection and forfeiture of bid security/the contract will be liable to be terminated along with forfeiture of performance security, even if LOA has been issued.
- (g) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Name

In the capacity of

Signed
.....

Duly authorized to sign the Bid for and on behalf of

Date

Note: The discounts, and the methodology of their application, should be quoted on prices quoted in the bid so that the discounts can be evaluated by simple arithmetic calculation during financial evaluation of the bids, to arrive at the net total price of the bid. If the net total price cannot be calculated after application of the methodology of the discount(s) quoted, the bid shall be considered as incomplete and will be rejected.

K RIDE

Form: PS 5

FORMAT FOR AFFIDAVIT TO BE SUBMITTED BY BIDDER ALONGWITH THE BID

*(To be executed in presence of Public Notary on non-judicial stamp paper of the appropriate value in accordance with relevant stamp Act. The stamp paper has to be in the name of the bidder)***

I **(Name and designation)****..... appointed as the attorney/authorized signatory of the bidder (including its constituents), M/s. _____ (hereinafter called the bidder) for the purpose of the Bid for the work of _____ as per the bid No. _____ of K RIDE, do hereby solemnly affirm and state on behalf of the bidder including its constituents as under:

- *1. That the bidder or any of its constituents has not been Blacklisted/ banned for business dealings for all Government Departments or by Ministry of Railways or by K RIDE at any time and/or no such blacklisting is in force as on the deadline for submission of bids.
- *2. That none of the previous contracts of the bidder or any of its constituents had been terminated/rescinded for Contractor's failure or part terminated for its failure as a JV partner with forfeiture of its full Performance Security, by Rail Infrastructure Development Company (Karnataka) Ltd. during the period of last 3 years before the deadline for submission of bids.

(Add Proviso of Clause 4.4(b) (ITB) suitably, if any Contract was so terminated).

- *3. The bidder or any of its constituents has not been imposed liquidated damages of 5% or more of contract value by any Government Department or by Ministry of Railways or by K RIDE due to delay in the implementation of any previous contract (either in the capacity of a single entity or as constituent of any other JV) within the period of last 2 years before the deadline for submission of bid [2 years shall be reckoned from the date on which imposed L.D. has exceeded 5% of the contract price]and there are no such accrued delay damages which has not been fully recovered before the deadline for submission of bids on account of contractor's request for deferring recovery to maintain cash flow and K RIDE has acceded to the same in the interest of the project and the work under the previous contract in question has been completed before the deadline for submission of bid, unless imposition of such delay damages has been set aside by the Competent Authority.

4. That the Bidder or any of its constituents is neither Bankrupt/Insolvent nor is in the process of winding-up nor such a case is pending before any Court on the deadline of submission of the bid.
- *5. That the name of the Bidder or any of its constituents is not on the list of "Poor Performer" of any Government Department or by Ministry of Railways or by K RIDE as on the deadline for submission of bid.
6. We declare that the bidder or any of its constituents have not either changed their name or created a new business entity as covered by the definition of "Allied Firm" under para 1102 (iii) of chapter XI of Vigilance manual of Indian Railways with latest amendments and corrections (available on website of Indian Railways), consequent to having been banned business dealings for specified period which is not over or suspended business dealings or having been declared as poor performer.
- 7.# We declare and certify that balance sheets for last three financial years including that for the latest concluded financial year are being submitted.

OR

We declare and certify that balance sheet for the latest concluded financial year has not been finalized till date and that is why we are furnishing financial data for last three financial years ignoring the latest concluded financial year.

*(# - Delete whichever is not applicable)**.*

8. We declare and certify that we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
9. We declare that the information and documents submitted along with the tender by us are correct and we are fully responsible for the correctness of the information and documents, submitted by us.
10. We understand that in case we cease to fulfill the requirements of qualifying and eligibility criteria at any time after opening of bids and till finalization of bids, it will be our bounden duty to inform the Employer of our changed status immediately and in case of our failure to do so, our bid shall be rejected and bid security shall be forfeited. In case such failure comes to the notice of Employer at any time after award of the contract, it will lead to termination of the contract and forfeiture of Bid or Performance Security. We shall also be liable for Banning of Business dealings upto a period of five years.
11. We understand that if the contents of the affidavit are found to be false at any stage during bid evaluation, it will lead to rejection of our bid and forfeiture of the bid security. Further, we ***[insert name of the***

bidder]** _____ and all our constituents understand that we shall be liable for banning of business dealings upto a period of five years.

12. We also understand that if the contents of the affidavit are found to be false at any time after the award of the contract it will lead to termination of the contract, forfeiture of Bid or Performance Security and Banning of Business dealings of the Bidder and all its constituents for a period of upto five years.

(SEAL AND SIGNATURE OF THE BIDDER)

Verification:

Verified on _____ day of _____ at _____ that the contents of the above mentioned affidavit are true and correct and nothing material has been concealed there from.

(SEAL AND SIGNATURE OF THE BIDDER)

**Modify the contents wherever necessary, in terms of sub-clause 4.4 ITB.*

*** The contents in Italics are only for guidance purpose and details as appropriate, are to be filled in suitably by Bidder.*

Attestation before Magistrate/Public Notary

(NOTE: This form need not be filled, This is only for information)

BDF/1

Bid Security

Bank Guarantee

(On non-judicial stamp paper of the appropriate value in accordance with Stamp Act. The stamp paper should be in the name of the Executing Bank).

From:

.....**[Insert Bank's Name, and Address of Issuing Branch or Office]**

To:

The General Manager, Civil,
Rail Infrastructure Development Company (Karnataka) Limited,
MSIL House, 7th Floor,
#36, Cunningham Road
Bangalore - 560052

Beneficiary: Rail Infrastructure Development Company (Karnataka) Limited
(hereinafter called "the Employer")

Date:

Bid Security No.:

We have been informed that **[Insert name of the Bidder]**..... (hereinafter called "the Bidder") intends to submit to you its bid (hereinafter called "the Bid") for the execution of **[name of contract]**. under Invitation for Bids No. dated..... ("the IFB").

WHEREAS, the Bidder is required to furnish Bid Security for the sum of **[Insert Value of Bid Security required]**, in the form of Bank Guarantee, according to your conditions of Bid.

AND

WHEREAS,**[Insert Name of the Bank]**, with its Branch**[Insert Address]** having its Headquarters office at..... **[Insert Address]**, hereinafter called the **Bank**, acting through**[Insert Name and Designation of the authorised persons of the Bank]**, have, at the request of the Bidder, agreed to give guarantee for Bid security as hereinafter contained, in favour of the Employer:

1. KNOW ALL MEN that by these present that I/We the undersigned ***[Insert name(s) of authorized representatives of the Bank]***, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee to pay to the Employer full amount in the sum of ***[Insert Value of Bid Security required]*** as above stated.
2. The Bank undertakes to immediately pay on presentation of demand by the Employer any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Employer on the Bank shall be final, conclusive and binding, absolute and unequivocal on the Bank notwithstanding any disputes raised/ pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Bidder or Bank.
3. The Bank shall pay the amount as demanded immediately on presentation of the demand by Employer without any reference to the Bidder and without the Employer being required to show grounds or give reasons for its demand of the amount so demanded.
4. The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Bidder.
5. The Bank agrees that no change, addition, modifications to the terms of the Bid document or to any documents, which have been or may be made between the Employer and the Bidder, will in any way absolve the Bank from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification made by Employer at any time.
6. This guarantee will remain valid and effective from.....[insert date of issue] till[insert date, which should be minimum 42 days beyond the expiry of bid validity date in the IFB]. Any demand in respect of this Guarantee should reach the Bank within the validity period of Bid Security.
7. The Bank Guarantee is unconditional and irrevocable.
8. The expressions Bank and Employer herein before used shall include their respective successors and assigns.
9. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the Employer. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC **Publication No.758**.

10. The Guarantee shall be valid in addition to and without prejudice to any other security Guarantee (s) of Bidder in favour of the Employer. The Bank, under this Guarantee, shall be deemed as Principal Debtor of the Employer.

Date

Place.....

.....

Bank's Seal and authorized
signature(s)

[Name in Block letters].....

[Designation].....

[P/Attorney] No.

Witness:

- 1 Signature
Name & Address & Seal

- 2 Signature
Name & address & Seal

Bank's Seal
[P/Attorney] No.

Note:

All italicized text is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.

Form: JV/1

**PRO-FORMA LETTER OF PARTICIPATION FROM
EACH PARTNER OF JOINT VENTURE (JV)**

(On each Firm's Letter Head)

No....

Dated

From:

.....

.....

To,

The General Manager, Civil,
Rail Infrastructure Development Company (Karnataka) Limited,
MSIL House, 7th Floor,
#36, Cunningham Road
Bangalore - 560052

Gentlemen,

Re: ... "[Insert name of work].....".

Ref: Your notice for Invitation for Bid (IFB)

1. We wish to confirm that our company/firm (delete as appropriate) has formed a Joint Venture by name of with for the purposes associated with IFB referred to above.

(Members who are not the lead partner of the JV should add the following paragraph).*

2. 'The JV is led by ... whom we hereby authorize to act on our behalf for the purposes of submission of Bid for and authorize to incur liabilities and receive instructions for and on behalf of any and all the partners or constituents of the Joint Venture.'

OR

*(Member(s) being the lead member of the group should add the following paragraph)**

2. 'In this group we act as leader and, for the purposes of applying for qualification, represent the Joint Venture.'

3. In the event of our group being awarded the contract, we agree to be jointly with (names of other members of our JV)..... and severally liable to the Rail Infrastructure Development Company (Karnataka) Limited, Bangalore, its successors and assigns for all obligations, duties and responsibilities arising from or imposed by the contract subsequently entered into between Rail Infrastructure Development Company (Karnataka) Limited, Bangalore and our JV.
4. *I/We, further agree that entire execution of the contract shall be carried out exclusively through the lead partner.

Yours faithfully,

(Signature)

(Name of Signatory).....

(Capacity of Signatory).....

Seal

* Delete as applicable

K RIDE

Form: JV/2

**FORMAT FOR POWER OF ATTORNEY FOR AUTHORISED
SIGNATORY OF JOINT VENTURE (JV) PARTNERS**

POWER OF ATTORNEY*

(To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant stamp Act. The stamp paper to be in the name of the company who is issuing the power of Attorney)

Know all men by these presents, we ... do hereby constitute, appoint and authorize Mr/Ms. who is presently employed with us and holding the position ofas our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our bid for the work of ...Including signing and submission of all documents and providing information/responses to Rail Infrastructure Development Company (Karnataka) Limited, Bangalore, representing us in all matters, dealing with Rail Infrastructure Development Company (Karnataka) Limited, Bangalore, in all matters in connection with our bid for the said project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this the day of 20...

(Signature of authorized Signatory)

.....
(Signature and Name in Block letters of Signatory)
Seal of Company

Witness

Witness 1:

Name:

Address:

Occupation:

Witness 2:

Name:

Address:

Occupation:

***Notes:**

- i) To be executed by all the partners individually, in case of a Joint Venture.
- ii) The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.

Form: JV/3

**FORMAT FOR POWER OF ATTORNEY TO
LEAD PARTNER OF JOINT VENTURE (JV)**

(To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant stamp Act. The stamp paper to be in the name of the company who is issuing the power of Attorney)

POWER OF ATTORNEY¹

Whereas Rail Infrastructure Development Company (Karnataka) Limited Bangalore, has invited Bids for the work of

Whereas, the members of the Joint Venture comprising of M/s. ..., M/s., and M/s. are interested in submission of bid for the work of ...*[Insert name of work]*... in accordance with the terms and conditions contained in the bidding documents.

Whereas, it is necessary for the members of the Joint Venture to designate one of them as the Lead Partner, with all necessary power and authority to do, for and on behalf of the Joint Venture, all acts, deeds and things as may be necessary in connection with the Joint Venture's bid for the project, as may be necessary in connection the Joint Venture's bid for the project.

NOW THIS POWER OF ATTORNEY WITNESSETH THAT:

We, M/s., hereby designate M/s., being one of the partners of the Joint Venture, as the lead partner of the Joint Venture, to do on behalf of the Joint Venture, all or any of the acts, deeds or things necessary or incidental to the Joint Venture's bid for the contract, including submission of bid, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Joint Venture in all its dealings with the Railway or any other Government Agency or any person, in connection with the contract for the said work until culmination of the process of bidding till the contract agreement is entered into with the Rail Infrastructure Development Company (Karnataka) Limited, Bangalore and thereafter till the expiry of the contract agreement.

We hereby agree to ratify all acts, deeds and things lawfully done by lead member, our said attorney, pursuant to this power of attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/ Joint Venture.

Dated this the Day of 200..

.....
(Signature)

.....
(Name in Block letters of Executant)
Seal of Company

Witness 1:
Name:
Address:
Occupation:

Witness 2:
Name:
Address:
Occupation:

Notes:

1. To be executed by all the Partners of the JV except the lead Partner.
2. The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.

Form: JV/4

(To be submitted for each package separately)

**DRAFT MEMORANDUM OF UNDERSTANDING (MOU²)
For
JOINT VENTURE PARTICIPATION
BETWEEN**

M/s having its registered office at (Hereinafter referred to as) acting as the Lead Partner of the first part,

And

M/shaving its registered office at (Hereinafter referred to as `.....') in the capacity of a Joint Partner of the other part.

The expressions of and shall wherever the context admits, mean and include their respective legal representatives, successors-in-interest and assigns and shall collectively be referred to as “the Parties” and individually as “the Party”

WHEREAS:

Rail Infrastructure Development Company (Karnataka) Limited (K RIDE) [hereinafter referred to as “Employer”] has invited bids for ... “[Insert name of work].....”

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. The following documents shall be deemed to form and be read and construed as an integral part of this MOU.

- i) Notice for Bid, and
- ii) Bidding document
- iii) Any Addendum/Corrigendum issued by Rail Infrastructure Development Company (Karnataka) Limited
- iv) The bid submitted on our behalf jointly by the Lead Partner.

2. The `Parties' have studied the documents and have agreed to participate in submitting a `bid' jointly in the name of _____.

²In case of existing joint venture, the certified copy of JV Agreement be furnished.

3. M/sshall be the lead member of the JV for all intents and purpose and shall represent the Joint Venture in its dealing with the Employer. For the purpose of submission of bid proposals, the parties agree to nominate as the leader duly authorized to sign and submit all documents and subsequent clarifications, if any, to the Employer. However M/s shall not submit any such proposals, clarifications or commitments before securing the written clearance of the other partner which shall be expeditiously given by M/s.....to M/s.....
4. The 'Parties' have resolved that the distribution of share and responsibilities between the JV partners **(Bidder shall ensure that the JV partner who is qualifying minimum 70% of the EQC requirement of the key activity under Clause 2.3.1(b)(i), shall be assigned responsibility of execution of atleast 50% of the key activity, duly indicating the Schedule/Bill Number of BOQ for such responsibilities, failing which the bid may be rejected)** is as under:-

(a) Lead Partner Share %

Responsibilities

(I) Key Activities and %age execution assigned

(i)

(II) BOQ Schedule/Bill No. and %age execution assigned

(i)

(ii)

(iii)

(b) Joint Venture Partner Share.....%

Responsibilities

(I) Key Activities and %age execution assigned

(i)

(II) BOQ Schedule/Bill No. and %age execution assigned

(i)

(ii)

(iii)

(c) Joint Venture Partner Share.....%

Responsibilities

(I) Key Activities and %age execution assigned

(i)

(II) BOQ Schedule/Bill No. and %age execution assigned

(i)

(ii)

(iii)

Note: In case any Bill or items of a Bill are proposed to be executed by more than one JV partner then indicate the breakup of that Item/Bill no. for each JV partner.

5. JOINT AND SEVERAL RESPONSIBILITY

The Parties undertake that they shall be jointly and severally liable to the Employer in the discharge of all the obligations and liabilities as per the contract with the Employer and for the performance of contract awarded to their JV.

6. ASSIGNMENT AND THIRD PARTIES

The parties shall co-operate throughout the entire period of this MOU on the basis of exclusivity and neither of the Parties shall make arrangement or enter into agreement either directly or indirectly with any other party or group of parties on matters relating to the Project except with prior written consent of the other party.

7. EXECUTIVE AUTHORITY

The said Joint Venture through its authorized representative shall receive instructions, payments from the Employer. The management structure for the project shall be prepared by mutual consultations to enable completion of project to quality requirements within permitted cost and time.

8. GUARANTEES AND BONDS

The Bid Security of a JV shall be in the name of the JV that submits the bid. If the JV has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners through which JV is intended to be formed.

9. BID SUBMISSION

Each Party shall bear its own cost and expenses for preparation and submission of the bid and all costs until conclusion of a contract with the Employer for the Project. Common expenses shall be shared by both the parties in the ratio of their actual participation.

10. INDEMNITY

Each party hereto agrees to indemnify the other party against its respective parts in case of breach/default of the respective party of the contract works of any liabilities sustained by the Joint Venture.

11. For the execution of the respective portions of works, the parties shall make their own arrangements to bring the required finance, plants and equipment, materials, manpower and other resources.

12. DOCUMENTS & CONFIDENTIALITY

Each Party shall maintain in confidence and not use for any purpose related to the Project all commercial and technical information received or generated in the course of preparation and submission of the bid.

13. ARBITRATION

Any dispute, controversy or claim arising out of or relating to this MOU shall be settled in the first instance amicably between the parties. If an amicable settlement cannot be reached as above, it will be settled by arbitration in accordance with the Indian Arbitration and Conciliation Act 1996 or any amendments thereof. The venue of the arbitration shall be Bangalore.

14. VALIDITY

This MOU shall remain in force till the occurrence of the earliest to occur of the following, unless by mutual consent, the Parties agree in writing to extend the validity for a further period.

- a. The bid submitted by the Joint Venture is declared unsuccessful, or
- b. Cancellation/ shelving of the Project by the Employer for any reasons prior to award of work
- c. Execution of detailed JV agreement by the parties, setting out detailed terms after award of work by the Employer.

15. This MOU is drawn in number of copies with equal legal strength and status. One copy is held by M/s and the other by M/s.,M/s& M/s..... and a copy submitted with the bid.

16. This MOU shall be construed under the laws of India.

17. NOTICES BETWEEN JV PARTNERS

Notices shall be given in writing by fax confirmed by registered mail or commercial courier to the following fax numbers and addresses:

Lead Partner.

Other Partner

.....

.....

.....

.....

(Name & Address)

(Name & Address)

In witness whereof the parties have executed this MOU the day, month and year first before written.

M/s.....

M/s.....

.....

.....

(Seal)

(Seal)

Witness

1..... (Name & Address)

2..... (Name & Address)

Form: JV/5

DRAFT FORMAT OF JOINT VENTURE AGREEMENT

M/s having its registered office at (hereinafter referred to as) acting as the Lead Partner of the first part,

and

M/shaving its registered office at (hereinafter referred to as) in the capacity of a Joint Partner of the other part.

The expressions of and shall wherever the context admits, mean and include their respective legal representatives, successors-in-interest and assigns
and shall collectively be referred to as “ the Parties” and individually as “ the Party”

WHEREAS:

Rail Infrastructure Development Company (Karnataka) Limited (K RIDE) [hereinafter referred to as “Employer”] has invited bids for ... “[Insert name of work].....” Vide LOA No..... awarded contract.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. The following documents shall be deemed to form and be read and construed as an integral part of this AGREEMENT.
 - i) Notice for Bid, and
 - ii) Bidding document
 - iii) Any Addendum/Corrigendum issued by Rail Infrastructure Development Company (Karnataka) Limited
 - iv) The bid submitted on our behalf jointly by the Lead Partner.
 - v) Letter of Acceptance issued by Rail Infrastructure Development Company (Karnataka) Ltd.
2. The ‘Parties’ have studied the documents and LOA issued to enter into Joint Venture as under and have agreed to participate.
3. M/sshall be the lead member of the JV for all intents and purpose and shall represent the Joint Venture in its dealing with the Employer. For the purpose of execution, the parties agree to nominate as the leader duly authorized to sign and submit all documents and enter into correspondence with the Employer.
4. The ‘Parties’ have resolved that the distribution of share and responsibilities between the JV partners **(Bidder shall ensure that the JV partner who is qualifying minimum 70% of the EQC requirement of the key activity under Clause 2.3.1(b)(i), shall be assigned responsibility of execution of atleast**

50% of the key activity, duly indicating the Schedule/Bill Number of BOQ for such responsibilities, failing which the bid may be rejected) is as under:-

(a) Lead Partner Share %

Responsibilities

(I) Key Activities and %age execution assigned

(i)

(II) BOQ Schedule/Bill No. and %age execution assigned

(i)

(ii)

(iii)

(b) Joint Venture Partner Share.....%

Responsibilities

(I) Key Activities and %age execution assigned

(i)

(II) BOQ Schedule/Bill No. and %age execution assigned

(i)

(ii)

(iii)

(c) Joint Venture Partner Share.....%

Responsibilities

(I) Key Activities and %age execution assigned

(i)

(II) BOQ Schedule/Bill No. and %age execution assigned

(i)

(ii)

(iii)

Note: In case any Bill or items of a Bill are proposed to be executed by more than one JV partner then indicate the breakup of that Item/Bill no. for each JV partner.

5. JOINT AND SEVERAL RESPONSIBILITIES

The Parties undertake that they shall be jointly and severally liable to the Employer in the discharge of all the obligations and liabilities as per the contract with the Employer and for the performance of contract awarded to their JV.

6. ASSIGNMENT AND THIRD PARTIES

The parties shall co-operate throughout the entire period of this AGREEMENT on the basis of exclusivity and neither of the Parties shall make arrangement or enter into agreement either directly or indirectly with any other party or group of parties on matters relating to the Project except with prior written consent of the other party and the Employer.

7. EXECUTIVE AUTHORITY

The said Joint Venture through its authorized representative shall receive instructions, payments from the Employer. The management structure for the project shall be prepared by mutual consultations to enable completion of project to quality requirements within permitted cost and time.

8. GUARANTEES AND BONDS

The Performance Security and other Securities of a JV shall be in the name of the JV that submits the bid.

9. BID SUBMISSION

Each Party shall bear its own cost and expenses for preparation and submission of the bid and all costs until conclusion of a contract with the Employer for the Project. Common expenses shall be shared by both the parties in the ratio of their actual participation.

10. INDEMNITY

Each party hereto agrees to indemnify the other party against its respective parts in case of breach/default of the respective party of the contract works of any liabilities sustained by the Joint Venture.

11. For the execution of the respective portions of works, the parties shall make their own arrangements to bring the required finance, plants and equipment, materials, manpower and other resources.

12. DOCUMENTS & CONFIDENTIALITY

Each Party shall maintain in confidence and not use for any purpose related to the Project all commercial and technical information received or generated in the course of preparation and submission of the bid.

13. ARBITRATION

Any dispute, controversy or claim arising out of or relating to this agreement shall be settled in the first instance amicably between the parties. If an amicable settlement cannot be reached as above, it will be settled by arbitration in

accordance with the Indian Arbitration and Conciliation Act 1996 or any amendments thereof. The venue of the arbitration shall be Bangalorei.

14. VALIDITY

This Agreement shall remain in force till the defect liability period is over and Securities are released.

15. This AGREEMENT is drawn in number of copies with equal legal strength and status. One copy is held by M/s and the other by M/s. &M/s and a copy submitted with the Bid.

16. This AGREEMENT shall be construed under the laws of India.

17. NOTICES BETWEEN JV PARTNERS

Notices shall be given in writing by fax confirmed by registered mail or commercial courier to the following fax numbers and addresses:

Lead Partner.

Other Partner

.....

.....

.....

.....

(Name & Address)

(Name & Address)

IN WITNESS WHEREOF THE PARTIES, have executed this AGREEMENT the day, month and year first before written.

M/s.....

M/s.....

.....

.....

(Seal)

(Seal)

Witness

1.....(Name & Address)

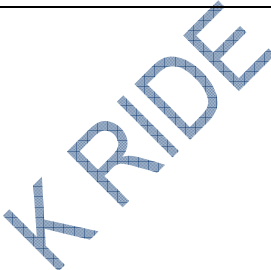
2..... (Name & Address)

Bidders Qualification

To establish its qualifications to perform the contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

K RIDE

Form ELI - 1: Bidder's Information Sheet

Bidder's Information	
Bidder's legal name	
Bidder's country of constitution	
Bidder's year of constitution	
Bidder's legal address in country of constitution	
Bidder's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	

The bidder shall attach copies of the following original documents with the form:

1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2.
2. Authorization to represent the firm or JV named in above, in accordance with ITB 20.2.
3. In case of JV, MOU to form JV or JV agreement, in accordance with ITB 4.1.

SEAL AND SIGNATURE

Form ELI - 2: JV Information Sheet

Each member of a JV must fill in this form separately

JV / Specialist Subcontractor Information	
Bidder's legal name	
JV Partner's or Subcontractor's legal name	
JV Partner's or Subcontractor's country of constitution	
JV Partner's or Subcontractor's year of constitution	
JV Partner's or Subcontractor's legal address in country of constitution	
JV Partner's or Subcontractor's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)	

The bidder shall attach copies of the following original documents with the form:

1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2.
2. Authorization to represent the firm named above, in accordance with ITB 20.2.

SEAL AND SIGNATURE

Form FIN-1: Financial Situation

(Each Bidder or each member of a JV must fill in this form separately)

NAME OF BIDDER/JV PARTNER:

	Financial Data for Last 5 Years [Indian National Rupees]				
	Year 1:	Year 2:	Year 3:	Year 4:	Year 5:
1. Total Assets					
2. Current Assets					
3. Total Liabilities					
4. Current Liabilities					
5. Net Worth [= 1 – 3]					
6. Working Capital [= 2 - 4]					
7. Profit Before Tax (PBT)					

SEAL AND SIGNATURE OF THE BIDDER

Certified that all figures and facts submitted in this form have been furnished after full consideration of all observations/notes in Auditor's reports.

(Signature of CA/Auditor)

Name of CA/Auditor: _____

Registration No: _____

(Seal)

1. The bidder shall attach copies of the following original documents with the form:

Copies of the audited balance sheets, including all related notes, and income statements for the last five years, as indicated above, complying with the following conditions.

- All such documents reflect the financial situation of the Bidder or partner to a JV, and not sister or parent companies.
- Historic financial statements must be audited by a certified accountant.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

2. Contents of this form should be certified by a Chartered Accountant/Auditor.

- 3.** In the event that the audited accounts for the latest concluded Financial Year are not available, the Bidder shall furnish information pertaining to the last five financial years after ignoring the latest concluded financial year. In case, the bidder submits audited financial information for the last six or more years, only the figures for the latest five years shall be considered for evaluation.

Form FIN-2: Annual Construction Turnover for the last 5 years

Each Bidder or each member of a JV must fill in this form separately:

NAME OF BIDDER/JV PARTNER:

Annual Turnover Data for the Last 5Years (Construction only)			
Year	Amount Currency	Exchange Rate	Indian National Rupees Equivalent
Average Annual Construction Turnover for last 3 years			

1. The information supplied shall be substantiated by data in the audited balance sheets and profit and loss accounts for the relevant years and submitted as attachments to form Fin-1 in respect of the bidder or all partners constituting the bidder.
2. Contents of this form should be certified by a Chartered Accountant/Auditor.
3. In the event that the audited accounts for the latest Financial Year are not available, the Bidder shall furnish information pertaining to last three financial years after ignoring the latest financial year. In case the bidder submits audited financial information for the last four or more years, only the figures for the latest three years shall be considered for evaluation.

SEAL AND SIGNATURE

Form FIN-3: Current Contract Commitments / Works in Progress

Bidders and each partner to a JV should provide information on their current commitments on all contract that have been awarded, or which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Contract Commitments

SN	Description of work	Contract No. & date	Name & address of Employer, Tel./Fax/ Email	Value of Contract in INR	Stipulated Period of completion	Value of Balance work	Anticipated date of Completion
1							
2							
Total							

Note: Enclose Certificate(s) from Engineer(s) Incharge (not below the rank of Executive Engineer) for Value of outstanding work. In case it is not feasible to furnish certificate from all the units the bidder should record the following certificate on Fin 3:

"Certified that current commitments on all the contracts that have been awarded or for which a letter of intent or acceptance has been received or for the works in progress or the works approaching completion, value of outstanding work has been indicated in the above table correctly. It is further certified that if later on the employer discovers that information provided in the table is incorrect then the employer will treat our bid invalid and it will be liable for rejection"

SEAL AND SIGNATURE

Form EXP-2(a): Specific Construction Experience

Fill up one form per contract

Contract of Similar Size and Nature			
Contract No.		Contract Identification	
Award Date		Completion Date	
Role in Contract	<input type="checkbox"/> Contractor <input type="checkbox"/> Subcontractor		
Total Contract Amount	INR		
If partner in a JV or subcontractor, specify participation in total contract amount	Percent of Total:	Amount: INR	
Employer's Name, Current Address and Current Telephone/Fax Number, E-mail			
Description of the similarity in accordance with Section 3			
<div style="font-size: 48px; opacity: 0.3; transform: rotate(-45deg); pointer-events: none;">K RIDE</div>			

The bidder shall attach a copy of the Certificate(s) issued by the employer in support of the information being furnished in each Exp (2a) form, failing which the claim of the bidder shall be liable to be rejected (in case of experience as a sub-contractor, the employer shall be the owner of the Project who has engaged the main Contractor).

SEAL AND SIGNATURE

Form EXP-2(b): Specific Construction Experience

Contract of Similar Size and Nature			
Contract No.		Contract Identification	
Award Date		Completion Date	
Role in Contract	<input type="checkbox"/> Contractor <input type="checkbox"/> Subcontractor		
Total Contract Amount	INR		
If partner in a JV or subcontractor, specify participation in total contract amount	Percent of Total:	Amount: INR	
Employer's Name, Current Address and Current Telephone/Fax Number, E-mail			
Description, quantity & period of execution of the key activities in accordance with Section 3			

Fill up one form per contract

Copy of Certificate(s) issued by the employer in support of the information being furnished above, shall be attached with each respective Exp (2b) form, as per detailed requirements indicated in note 6 below clause 2.3.1 of Section 3 failing which the claim of the bidder shall be liable to be rejected (in case of experience as a sub-contractor, the employer shall be the owner of the Project who has engaged the main Contractor).

SEAL AND SIGNATURE

EQC FORM NO.1

Clause No & Clause heading of Section 3	Details of value of work/quantity of activity and References (Folio No.) of Documents through which criteria against each item is being met.						
	Package 1	Package 2	Package 3	Combined Package 1&2	Combined Package 1&3	Combined Package 2&3	Combined Package 1,2&3
2 Qualification							
2.1.1 Conflict of Interest mentioned in ITB 4.3							
2.1.2 Share of partners							
2.1.3 Disqualification of Bidder							
2.2 Financial Status							
2.2.1 Historical Financial Performance							
2.2.2 Average Annual Construction Turnover							
2.2.3 Net Worth							
2.2.4 Bid Capacity							
2.3 Experience							
2.3.1 Specific Construction Experience (a) Contracts of Similar Size and Nature (I) Single Contract (II) Two Contracts (III) Three Contracts (b) Construction Experience in Key Activities (i) (a) Earth work - if applicable (b) Bridge work - if applicable							
2.4 Personnel Undertaking submitted							
2.5 Equipment Undertaking submitted							
2.6 Specialist sub-contractor undertaking submitted 1) General Electrical works - if applicable 2) SCADA- if applicable 3) TSS - if applicable							

FORM NO. 2

**CHECKLIST FOR CLAUSES PERTAINING TO SUMMARY
REJECTION OF BID**

We, the undersigned, declare that we have read and understood the content of ITB clauses mentioned below. We also understand that our bid shall be summarily rejected in case we fail to comply the requirements of under mentioned clauses:

ITB Clause No Section 1	Reason for Summary Rejection
4.4	Non-submission of Affidavit
4.5	Non-submission of immediate information to the Employer in case Bidder ceases to fulfill eligibility in terms of ITB 4.3 & 4.4
14.2	Quoting more than one percentage for any schedule
14.9	Non-submission of the Letter of Price Bid (LPB) and/or Summary sheet of BOQ
16.4	Non-submission of the Letter of Technical Bid (LTB)
19.3	Bid not accompanied by an enforceable and compliant bid security

SEAL AND SIGNATURE OF THE BIDDER

Form: C 1

**FORMAT FOR CERTIFICATE TO BE SUBMITTED BY BIDDER ALONGWITH THE
BID**

(On the letter head of the Firm)

We/I, _____, having registered office at _____ do hereby certify that “I “I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration by the competent Authority shall be attached.)”

Dated this _____ day of _____, 2020

For- _____
Authorized Signatory Signature _____
Full Name: _____
Place: _____

(SEAL AND SIGNATURE OF THE BIDDER)

Form: C 2

**FORMAT FOR CERTIFICATE TO BE SUBMITTED BY
BIDDER ALONGWITH THE BID FOR SUB CONTRACTING**

(On the letter head of the Firm)

We/I, _____, having registered office at _____ do hereby certify that “I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the competent Authority and will not sub-contractor any work to a contractor from such countries unless such contractor is registered with the competent Authority. I hereby certify that his bidder fulfils all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration the Competent Authority shall be attached.)”

Dated this _____ day of _____, 2020

For- _____
Authorized Signatory Signature _____
Full Name: _____
Place: _____

(SEAL AND SIGNATURE OF THE BIDDER)

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PART II	Work's Requirements
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Section 5	Works/Employer's Requirements
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Section 5	Works/Employers Requirements
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This Section contains the specifications, the safety precautions and supplementary information that describe the Work to be executed.

I N D E X

	Description	Pages
1	Safety and Security	84-97
2	General Information and Scope of work	98-108
3	Site Facilities for the Employer and the Engineer	109-115
4	Specifications	116-165
5	Personnel	166-168
6	Equipment	168-169
7	Milestone	170

Safety and Security at work

- 1.1 The works included in this contract are to be carried out close to the running tracks and public utilities, therefore, safety of running trains and the public is paramount. Therefore, all activities undertaken by the Contractor/his Sub-contractors shall ensure safety at all times. The contractor shall comply with the instructions issued by the Railway/ Engineer/Employer from time to time to ensure safe running of trains while carrying out works. The rates quoted by the Contractor shall be deemed to include all expenditure incurred in compliance with the same.
- 1.2 Before starting any excavation work adjacent to existing track, the contractor shall ensure that necessary permissions has been obtained and required precautions have been taken for doing such work in terms Joint Procedure Order (JPO). The penalties mentioned in the following JPO shall be levied on the contractor if such event occur. The JPO is reproduced below:

“JOINT PROCEDURE ORDER FOR UNDERTAKING DIGGING WORK IN THE VICINITY OF UNDERGROUND SIGNALING, ELECTRICAL AND TELECOMMUNICATION CABLES”

A) A number of Engineering works in connection with gauge conversion/doubling/third line are in progress on various railways, which require extensive digging work near the running track, in close vicinity of the working S&T cables carrying vital safety circuits as well as electrical cables feeding the power supply to cabins. ASM room, RRI Cabin, Intermediate Block Huts (IBH) etc. Similarly, S&T organization under open line or construction units under CAO/C, are executing various Signaling and Telecom works requiring digging of earth for laying of cables or casting of foundations for the erection of signal posts etc. RailTel is also executing the work of laying of quad cable and OFC on various Railways as a part of sanctioned works for exclusive use of Railways for carrying voice and data i.e. administrative and control communication, PRS, FOIS etc. or shared by RailTel Corporation of India Ltd. On certain sections digging is also required for laying of electrical cable and casting of foundation for the erection of OHE masts by Electrical Dept. Generally, these works are executed by contractors employed by these organizations.

B) However, while carrying out these works in the vicinity of working signaling, telecommunication and electrical cables, at times, cable cuts take place due to JCB machines working along the track or during the digging work being done by contractors carrying out the Civil Engineering Works. Similarly, such cable cuts are also resulting due to works undertaken by S&T or Electrical departments. Such cable faults results in the failure of vital signaling and telecommunication circuits & electrical installations.

C) Henceforth, the following joint procedure shall be followed by Engineering, Electrical and S&T (and RailTel organisation, wherever such works are being done by them) officers of the respective divisions and by the construction organisation, while carrying out any digging work near to existing signaling & telecommunication and electrical cables, so that the instances of cable cut due to execution of works, can be controlled and minimized.

1. S&T Department (and RailTel, where they have laid the cables) and Electrical department shall provide a detailed cable route plan showing exact location of cable at an interval of 200m or wherever there is change in alignment so that the same is located easily by the Engineering official/contractor. In addition, S&T department and Electrical department shall also provide cable markers along the alignment of the cable. These cable route plans shall be made available to the Sr.DEN/DEN or Dy.CE/C, as the case may be, by Sr. DSTE/DSTE or Sr. DEE/DEE of the divisions or Dy.CSTE/C or Dy.CEE/C within 15 days in duplicate. Sr.DEN/DEN or Dy.CE/C will send copies to their field unit i.e. AEN/SE/P.Way & Works.
2. Before taking up any digging activity on a particular work by any agency, Sr.DSTE/DSTE or Sr.DEE/DEE of the section shall be approached in writing by the concerned Engg. or S&T or Electrical officer for permitting to undertake the work. Sr.DSTE/DSTE or Sr.DEE/DEE, after ensuring that the concerned executing agencies including the contractor have fully understood the S&T and Electrical cable route plan shall permit the work in writing within 7 days of the request by concerned department.
3. After getting the permission from S&T or Electrical department as the case may be, the relevant portion of the cable route plan shall be attached to the letter through which permission is issued to the contractor by concerned Engg. official for commencement of work and ensuring that the contractors have fully understood the cable route plan and precautions to be taken to prevent damage to the underground cables. The contractor shall be asked to study the cable plan and follow it meticulously to ensure that the safety of the cable is not endangered. Such a provision, including any penalty for default, should form part of agreement also. It is advisable that a suitable post of SE/Sig or SE/Tele or SE/Electrical(TRD or G) shall be created chargeable to the estimates of doubling/gauge conversion, who can help Engg. agencies in the execution of the work. However basic responsibility will be of the department executing the work and the Contractor. Creation of posts is not mandatory.
4. The SE/P.Way or SE/Works shall pass on the information to the concerned SE/Sig SE/Tele or SE/Electrical(TRD or G) about the works being taken up by the contractors in their sections at least 3 days in advance of the day of the

work. In addition Engineering control shall also be informed by SE/P.Way or SE/Works, who in turn shall pass on the information to the test room/network operation centre of RailTel/TPC/Electrical control.

5. On receiving the above information, SE/Sig or SE/Tele or SE/Electrical (TRD or G) shall visit the site on or before the date of taking up the work and issue permission to the contractor to commence the work after checking that adequate precautions have been taken to avoid the damage to the cables. The permission shall be granted within 3 days of submission of such requests.
6. The name of the contractor, his contact telephone number, the nature of the work shall be notified in the Engineering control as soon as the concerned Engineering officials issue the letter authorizing commencement of work to the contractor. Test room shall be given copies. Test room shall collect any further details from the Engineering Control and shall pass it on to S&T/RailTel & Electrical officials regularly. In case the supervisors of concerned departments do not turn up on the day as advised in terms of para 4 and 5 above, the works of contractor should not be stopped on this account.
7. In case of works being taken up by the State Government, National Highway Authority etc., the details of the permission given i.e. the nature the work, kilometer etc. be given to the Engineering control including the contact person's number so that the work can be done in a planned manner. The permission letter shall indicate the contact numbers of Test room/network Operating Centre of RailTel/TPC/Elect. Control.
8. Where the nature of the work taken up by the Engineering department is such that the OFC or other S&T cables or Electrical cables is to be shifted and relocated, notice of minimum one week shall be given so that the Division/RailTel/Construction can plan the works properly for shifting. Such shifting works shall in addition, for security and integrity of the cables, be supervised by S&T supervisors/RailTel supervisors/Electrical Supervisors.
9. The concerned SE/P.Way/SE/Works/SE/Sig/SE/Tele/SE/Electrical (TRD or G) or RailTel supervisors supervising the work of the contractor shall ensure that the existing emergency sockets are not damaged in view of their importance in providing communication during accident/emergency.
10. In case of minor nature of works where shifting of cable is not required, in order to prevent damage to the cable, the Engineering contractor shall take out the S&T or optical fibre cable or Electrical cable carefully from the trench and place it properly alongside at a safe location before starting the earthwork under the supervision of SE/Sig or SE/Tele or SE/Electrical (TRD or G). The cable shall be reburied soon after completion of excavation with proper care including placement of the brick over the cable under the supervision of S&T or Electrical supervisors. However, the work will be charged to the concerned

engineering works. The responsibility for ensuring availability of SE (Signal), SE (Electrical) as per para 4 and 5 above lies with the respective department. The contractor will go ahead with the shifting of cables as per the program decided and he will not be held responsible for any cable cut.

11. In all the sections where major project are to be taken up/going on RailTel/S&T department shall deploy their official to take preventive/corrective action at site of work. As regards Electrical Department, the official may be deputed on need basis.
12. No new OFC or quad cable shall be laid close to existing track. It shall be laid close to the Railway boundary on one side of the Railway track to the extent possible to avoid any interference with the future works (doubling etc.). It shall be ensured in the new works of cable laying that the cable route is properly identified with electronic or concrete markers. Wherever multiple cables are laid in a trench, RFID markers may be provided for easy identification of the cable. Henceforth, wherever cable laying is planned, before undertaking the cable laying work, the cable route plan of the same shall be prepared by the Dy.CSTE/A or Dy.CEE/C and shall be got approved from the concerned Sr. DSTE/DSTE or Sr.DEE/DEE and also from the concerned Dy. CE/C for new lines and from the concerned Sr.DEN for all other projects including GC etc., to avoid possible damages in future. Such approvals shall be granted within 15 days of the submission of the request.
13. The works of excavating the trench and laying of the cable should proceed in quick succession, leaving a minimum time between the two activities.
14. In case damage caused to OFC/Quad cable or Electrical cable during execution of the work, the contractor is liable to pay a penalty for damaging the cable. Penalty shall not be levied in case of the following:-
 - i). Detailed cable route plan as per clause C-1 not provided by concerned department or cable is not protected as per laid down procedures.
 - ii). The alignment of the cable does not tally with the information provided to the contractor.
 - iii). The cable depth is found to be less than 800 mm from normal ground level.
 - iv). No representative of S&T department/RailTel was available at site guarding the cables on the fixed pre determined date and time.

15. Penalty to be imposed for damages to cable shall be as under:-

Cable damaged	Penalty per location
Only Quad cable or Signalling cable	Rs.1.0 Lakh
Only OFC	Rs.1.25 Lakh
Both OFC & Quad	Rs.1.5 Lakh
Electrical Cable	Rs.1.0 Lakh

Necessary debit in this regard shall be raised on the department undertaking the work who shall in turn levy the penalty on the defaulting contractor. S&T department shall raise the debits in case of damage to OFC or Quad or Signaling cable and Electrical department shall raise the debits in case of damage to Electrical cable.

16. Railways will not lodge FIR with RPF in case of works being executed by authorized contractors of Railways who have been duly permitted to execute the works in accordance with this JPO. Joint note by the supervisors of the concerned department shall be prepared and the responsibility of the cable cut should be decided without involving RPF. The joint note deciding the fact whether the contractor should be penalized shall be completed in a day's time from the occurrence of cable cut.
- In all other cases, when the cable is cut by an agency that was not permitted to execute any work, FIR should be lodged with RPF.
17. While giving permission for taking up the works, concerned departments may note that earthwork by engineering contractors will normally be done by machines except in a few isolated locations where the quantity of earth work is very less.
18. Railways shall make necessary correction in their future contract so that this JPO can also be enforced contractually.
19. In case of damages to OFC, RailTel should be paid 5/6th of the penalty recovered. RailTel shall raise demands on the S&T department in this regard.
20. All types of signaling & OHE bonds i.e. rail bond, cross bond and structure bond shall be restored by the contractor with a view to keep rail voltage low to ensure safety of personnel.
21. Above joint circular shall be applicable for construction as well as open line organization of Engineering, S&T and Electrical.
22. S&T cable and electrical cable route plan should be prepared by the concerned S&T and Electrical officers respectively and got approved as stipulated in para C-12 before undertaking the work. The completion cable route plan should be finalized block section by block section as soon as the work is completed.

23. All cable laying works shall be executed as per laid down technical specifications, such as protection measures/protective cover, compaction of refilled material etc.

1.3. Working near running line

- 1.3.1 The contractor shall not allow any road vehicle belonging to him or his suppliers etc. to ply in railway land next to the running line. If for execution of certain works viz. earth work for parallel railway line and supply of ballast for new or existing rail line, gauge conversion etc, road vehicles are necessary to be used in railway land next to the railway line, the contractor shall apply to the Engineer for permission giving the type & no. of individual vehicles, names & license particulars of the drivers, location, duration & timings for such work/movement. The Railways/Employer/Engineer or his authorized representative will personally counsel, examine & certify, the road vehicle drivers, contractor's flag men & supervisor and will give written permission giving names of road vehicle drivers, contractor's flag men and supervisor to be deployed on the work, location, period and timing of the work. This permission will be subject to the following obligatory conditions:
- 1.3.2 Road vehicles can ply along the track after suitable cordoning of track with minimum distance of 6 meters from the centre of the nearest track. For working of machinery close to the running tracks or plying of road vehicles during night hours, the contractor shall apply to the Engineer in writing for permission, duly indicating the site details in a neat sketch and safety measures proposed to be taken. Subject to the approval of concerned Railway authorities, the Engineer or his authorized representative will communicate permission to the contractor/contractor's representative. The contractor and his men shall strictly adhere to the instructions given along with such permissions.
- 1.3.3 Nominated vehicles and drivers shall be utilized for work in the presence of at least one flag man and one supervisor certified for such work. In order to monitor the activities during night hours, additional staff may have to be posted based on the need of the individual site.
- 1.3.4. The Contractor' machinery, equipment and vehicles shall normally operate 6 m clear of track. Any movement/work at less than 6m and upto a minimum of 3.5m clear of track centre, shall be carried out only in the presence of a person (including any Railway employee) authorized by the Engineer. No part of the road vehicle shall be allowed at less than 3.5m from track centre. Cost of such railway employee shall be borne by the Employer.
- 1.3.5 The Contractor's machinery and equipment like Cranes, Flash Butt Welders, Ballasting machinery, Compactors, Track Laying Systems etc. are required to operate close to the existing line carrying traffic. Contractor is fully responsible for operating these machineries without endangering the safety of the running line and traffic

1.3.6 Safety Fencing :

- (i)** Before commencing any work close to the running track, the Contractor shall provide safety fencing and obtain the specific permission of Engineer to commence the work in that stretch.
- (ii)** The fencing shall be for a as per relevant BOQ item.
- (iii)** The Contractor shall maintain the safety fencing in good working condition throughout the period till the work in a given stretch is completed.
- (iv)** The Contractor will be paid for providing safety fencing along the track as per the relevant item in the BOQ.

1.4. The contractor's special attention is drawn to Para 826 of Indian Railways Permanent Way Manual introduced under Advance Correction Slip no. 69 dated 23.05.2001, reproduced below which should invariably be complied with.

"826 Safe working of Contractors -- A large number of men and machinery are deployed by the contractors for track renewals, gauge conversions, doublings, bridge rebuilding etc. It is therefore essential that adequate safety measures are taken for safety of the trains as well as the work force.

The following measures should invariably be adopted:

- (a)** The contractor shall not start any work without the presence of Railway supervisor at site.
- (b)** Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work shall be so carried out that there is no infringement to the railway's schedule of dimensions. For this purpose the area where road vehicles and/or Machinery are required to ply, shall be demarcated and acknowledged by the contractor. Special care shall be taken for turning/reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions.
- (c)** The "look out and whistle" caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable flag men/detonators shall be provided where necessary for protection of trains.
- (d)** The supervisors/workmen should be counseled about safety measures. A competency certificate to the contractor's supervisor as per proforma annexed shall be issued by AEN which will be valid only for the work for which it has been issued.
- (e)** The unloaded ballast/rails/sleepers/other P.Way materials after unloading along track should be kept clear off moving dimensions and stacked as per the specified heights and distance from the running track.
- (f)** Supplementary site-specific instructions, wherever considered necessary, shall be issued by the Engineer.

COMPETENCY CERTIFICATE

“Certified that Shri _____ P. Way supervisor of M/S _____ has been examined regarding P. Way working on _____ work. His knowledge has been found satisfactory and he is capable of supervising the work safely.

Authorized Representative / K RIDE

- 1.5.** The work of formation in banks and cuttings throughout the length of doubling is adjacent to track under running traffic. Many of the bridges on the proposed double line are to be constructed either as extensions or just adjacent to the existing bridges under running traffic. The work of Installation of Track throughout the length of doubling is adjacent to track under running traffic. The work of Installation of Track and Signals in the Station yards including alterations to the existing Track and Signals has to be done adjacent to or in replacement of the existing Track and Signals which are under running traffic. The contractor shall ensure that the safety of the running lines and running traffic is not endangered, because of his work.
- 1.6.** Any traffic/traction blocks, temporary speed restrictions and caution orders required in this connection shall also be got sanctioned from the Railway authorities well in advance, through the Engineer. The Railways may sanction the same for specific sites within the overall recovery time available in the Railway's time table. The contractor shall have to schedule his programme according to the convenience of the Railways. No claim from the contractor for any delay/inconvenience/loss on this account shall be entertained by the Employer.
- 1.7** The contractor shall provide at site at his own cost, all protection measures including exhibition and lighting of all Temporary Engineering Signals as per Railway rules, instructions and norms. All lights provided by the contractor shall be screened so as not to interfere with any signal light on the Railways or with any traffic or signal lights of any local or other authority.
- 1.8.** **Ancillary and Temporary works**
- (a)** The Contractor's proposals for erection of all ancillary and temporary works shall be in conformity with the proposals submitted along with the tender and modifications thereto as approved by the Engineer.
- (b)** The Contractor shall submit drawings, supporting design calculations where called for by the Engineer and other relevant details of all such works to the Engineer for approval at least one month before he desires to commence such works. Approval by the Engineer of any such proposal shall not relieve the contractor of his responsibility for the sufficiency of such works.

- (c)** The contractor shall, at his own cost, design and provide any temporary arrangements including relieving/service girders required in connection with the above said works and remove the same, when no longer required. These arrangements shall conform to Railway norms. The contractor shall obtain all necessary approvals and sanctions of the concerned Railway/ K RIDE authorities including Commissioner of Railway Safety through the Engineer/ Employer in advance and well in time.
- (d)** The contractor shall ensure and be entirely responsible for proper design, fabrication, provision and upkeep of all temporary arrangements and all associated activities so as not to endanger safety of any assets, running track, traffic and traveling public and for following all extent instructions, norms, practice and procedures laid down by Railway authorities in this respect, which may be ascertained from the Railways through the Engineer.
- (e)** If required, Railways may, in order to ensure the safety of the running track, post at site Regular Railway staff to watch the efficacy and safety of temporary arrangements and protection measures round the clock for the period the same exist in the running line and till the running line is restored back to normal. Railways/K RIDE may also supervise the insertion, maintenance and removal of the temporary arrangements. The cost of such staff shall be borne by the Employer.
- (f)** Notwithstanding the above, the contractor shall not, however, be relieved of his responsibility and obligation as aforesaid.
- (g)** Save as provided in Para 7 (e) above, the contractor shall bear the cost of complying with all safety requirements. No extra payment will be made for complying with the safety provisions under this chapter and the cost of all such elements to meet the safety requirements shall be deemed to be included in the Bill of Quantities.

1.9. The contractor remains fully responsible for ensuring safety. In case of any accident, the Contractor shall bear cost of all damages to his equipment and men and also damages to Railway and its passengers.

1.10 Suitable barricading to forewarn road vehicle driver shall be provided by the contractor. The luminous tape, strung on bamboo or steel poles can be considered for such barricading. Barricading arrangement should be got approved by the Engineer.

1.11 Indemnity by Contractor

The Contractor shall indemnify and save harmless the Railway/Employer/Engineer from and against all actions, suit proceedings, losses, costs, damages, claims, and demands of every nature and description brought or recovered against the Railways/ Employer/Engineer by reason of any act or omission of the contractor, his agents or employees, in the execution of the works or in his guarding the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

1.12. Damage to Railway Property or Life or Private Property

The contractor shall be responsible for all risks to the works and for the trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of the Railway or the lives of persons or property of others from whatsoever cause in connection with the works until they are taken over by the Employer and this although all reasonable and proper precautions may have been taken by the Contractor, and in case the Railway/Employer/Engineer shall be called upon to make good any costs, loss or damages, or to pay any compensation, including that payable under the provisions of Workmen's compensation act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid, by reason of any act, or any negligence or any omissions on the part of the contractor, the amount of any costs or charges including costs and charges in connection with legal proceedings, which the Railway/Employer/Engineer may incur in reference thereto, shall be charged to the contractor. The Railway/Employer/Engineer shall have the power and right to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to Contractor, as aforesaid, any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expense shall not be called in question by the Contractor.

1.13. Safety of Public

- (i)** The Contractor shall be responsible to take all precautions to ensure the safety of the Public whether on Public or Railway property and shall post such look out men as may in the opinion of the Engineer be required to comply with regulations pertaining to the work.
- (ii)** The Contractor shall provide effective barricading using G.I. corrugated sheets around foundation pits, trenches, erection sites, demolition sites etc., to prevent accidents and injuries to the public. He shall erect barricading duly leaving safe passage for the movement of the public as per the directions of Engineer.
- (iii)** No payment will be made for providing such barricading and the rates quoted by the Contractor shall be inclusive of such safety measures.

1.14. Reporting of Accidents

The Contractor shall report to the Engineer details of any accidents as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer and the Employer immediately by the quickest available means.

- 1.15** Life-saving Appliances and First-aid Equipment: The Contractor shall provide and maintain upon the Works sufficient, proper and efficient life-saving appliances and first-aid equipment to the approval of the Engineer and in accordance with the requirements of ILO Convention No. 62. The appliances and equipment shall be available for use at all time

1.16 Security Measure

- (a)** Security arrangements for the work shall be in accordance with general requirements and the contractor shall conform to such requirements and shall be held responsible for the action or inaction on the part of his staff, employees and the staff and employees of his subcontractors.
- (b)** Contractor's as well as Sub Contractor's employees and representatives shall wear identification Badges (cards), uniforms, helmets, gum boots and other safety/protection gadgets/accessories provided by the Contractor. Badges shall identify the Contractor and show the employee's name and number and shall be worn at all times while at site.
- (c)** All vehicles used by the contractor shall be clearly marked with the Contractor's name or identification mark.
- (d)** The contractor shall be responsible for security of works for the duration of the contract and shall provide and maintain continuously adequate security personnel to fulfill these obligations. The requirements of security measures shall include, but not be limited to, maintenance of Law and Order at site, provision of all lighting, guard, flagmen, and all other measures necessary for protection of works within the colonies, camps and elsewhere at site, all materials delivered to the site and all persons employed in connection with the works continuously throughout working and non-working periods including nights, Sundays and holidays, for the duration of the contract. However, at work sites in close proximity of traffic corridors where public and traffic are likely to come close to the work area, suitable barricading as proposed by contractor and approved by Engineer shall be provided.
- (e)** No separate payment will be made for providing security measures and will be deemed to be included in the rates quoted by the contractor.

- 1.17 Contractor will have to comply the instructions circulated for Safety on Worksites Specially Doubling Works being implemented on Indian Railways as per relevant letters and any subsequent instructions on this issue.

It is presumed that bidders have gone through the Indian Railway's policies including any subsequent instructions on this issue if any, before quoting the rates.

1.18 Ensuring Safety at work site

Ensuring safety at work site while carrying out of doubling works is of paramount importance.

Following measures must be ensured: -

1. Fencing as per specification laid down along the track at specified distance from centre line of existing track. The fencing should be maintained till the track is

handed over to Railways. Accordingly, at locations where it has been broken/stolen away, the same should be restored expeditiously.

2. Contractors to ensure patrolling by Cycle/ Motor Cycle to prevent damage to fencing and to rectify as soon as it is detected.
3. In the stretch where new formation is likely to be used by unauthorized vehicles and likely to create potential unsafe condition, lifting barriers under lock & key at points where contractor's vehicles are required to enter should be provided and the same should be manned to allow entry to only contractor's vehicles and prevent entry of unauthorized vehicles.
4. Other likely entry points on the new formation must be suitably blocked by providing physical obstructions by stacking sleepers or by cross trenches or by erecting fence to prevent entry of unauthorized vehicles. Frequent check should be exercised to ensure that unauthorized vehicles do not ply.
5. Reducing number and length of such stretches by providing cross barricades should be done.
6. PMC should be advised to educate his supervisor for each stretch to ensure Safety who should be well conversant safety instructions and should see that the same are not violated. PMC has to be made accountable for lapses on the safety aspects.
7. Periodical formal counseling of all contractor's staff and PMC officials regarding safety instructions and review violations coming to light and taking appropriate action.
8. Counseling of drivers and operators of machinery regarding safety aspect during routine inspection of PMC officials contractors Engineers.
9. All the drivers/machine operators should have competency certificate issued by PMC after examining their knowledge about safety. Only authorized drivers can ply within 6.6 m of the existing track will have to be proposed as found necessary.
10. Necessary caution orders to Drivers of trains wherever required in terms of Railway Board's instructions/PCE circulars.
11. In case work is required to be carried out within 3.5 M of existing running line, K RIDE should be advised well in time and requested to provide look out men and

KRIDE Supervisors for the site. At such locations close supervision must be ensured.

In terms of contract conditions, preventing entry of outsiders at the worksites is the responsibility of contractor and this has to be ensured.

1.19 Additional Conditions to Safety at Work Spot

To ensure safety at all the work sites all the time, a dedicated Safety officer duly trained as per the provisions of the contract shall be posted by the contractor for each project. Following works will in general be assigned to safety officer.

1. The Safety officer (in charge) shall be from the permanent rolls of the contractor. He will work under the administrative control of the Project Manager of the contractor.
2. The person from any sub-contractor deputed by the main contractor shall not be designated as Safety officer.
3. The Safety officer shall be overall in charge of the safety methods being undertaken at various work sites. He shall not be given any other task related to the project planning and execution.
4. The Safety officer should be well versed with the safety aspects related to worksites in the vicinity of running railway lines and should impart training to the officials assisting him.
5. The Safety officer shall be given suitable means of transport (depending on the requirement) by the contractor to approach all the work sites frequently and ensure that adequate precautions to ensure safety have been taken. Following items shall be specifically done by the Safety officer.
 - a) Ensuring the provision of the safety fencing. Any shortfall shall be made good immediately.
 - b) Availability of suitable lookout men at each working site. The lookout men shall be in possession of hooters, safety helmet and retro-reflective jacket to warn the site engineer/supervisor and operators/drivers of the equipments/vehicles working near the running track.
 - c) Arranging issuance of competency certificates by Employer/Engineer with the operator/driver of each equipment/vehicle before deputing for work.
 - d) Take assurance from the contractor officials at regular interval of complying with the safety instructions.

- e) Any safety violation to be advised to all concerned and remedial action taken thereof.
- 6. The Safety officer will frequently counsel the contractor engineers/supervisors/operators/drivers/lookout men about safety provisions during his day to day inspections and keep a record of the same. The Safety officer will prepare a monthly report of the safety inspections carried out and remedial action taken thereof and send it to the Project Manager of the contractor and the employer/engineer.
- 7. The contractor should open new sites only after discussing the safety measures to be undertaken with his Safety officer and obtaining the permission from Employer/ Engineer.
- 8. It shall be the duty of the Project Manager and Safety officer of the contractor that the instructions contained in the agreement related to safety and the same issued by the Railway/Employer/Engineer from time to time are strictly complied with.

Based on the above, it is advised that a thorough review of the safety provisions may be undertaken and it should be ensured that competent safety officers are available at all the work spots.

GENERAL INFORMATION AND SCOPE OF WORK

2.0 SCOPE OF WORK

The proposed work is in connection with the doubling of track between BAIYYAPPANAHALLI – HOSUR DOUBLING PROJECT : Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations. (*Single Package*).

The location of Bridges: 1. Bridge No.533 at KM.205/500-600.
2. Bridge No. 531 at KM.205/200-300.
3. RUB No. 519A at KM.200/700-800.

The proposed spans shown in scope of work is tentative.

2.1 Introduction

2.1.1 These works are a part of the project of doubling of Railway track in Baiyyappanahalli – Hosur section of South Western Railway

2.1.2 CLIMATIC CONDITIONS: Monsoon period in the area:

Normally, Monsoon period in the project area is from July to October months. It is desirable that the contractor plans his works accordingly.

2.1.3 Introduction

i) The tendered work is part of the project for doubling of existing railway line between BAIYYAPPANAHALLI – HOSUR DOUBLING PROJECT : Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations. (*Single Package*).).

The bridges and track for doubling are proposed parallel to the existing track on the left/right side of existing single line.

It is proposed to take up this work as it is important from the point of view of both passenger and freight traffic.

This work can be started immediately as major portion of land is available for execution of work.

The scope of work includes earthwork in formation, bridge works, and miscellaneous works, transportation and launching of precast boxes, supply of cement & steel and provision of site facility

ii) **Availability of Land :**

The major portion of the required land for the execution of works is available along the alignment. However, the contractor may have to take lease of the land temporarily for installation of his facilities like batching plant/ Casting Yard/ Site Work Shop etc. The bidders are advised to make detailed study and cater for such expenditure in the bid.

- i) **Approaches to the project site:** The land acquired for the project caters for construction and operation of the proposed line. The contractor shall plan for approach roads to various sites of work conducting detailed survey and should include the cost of inputs for any such approach roads in his bid for the work. However, in case any existing road outside railway land has to be utilized for transportation of materials to the site of work and in the process the road gets damaged or needs to be strengthened and the authority owning the said road submits demand to GM(Civil)/K RIDE to carry out some specific works in order to strengthen/repair the road, GM(Civil)/K RIDE shall get such works executed through the existing contractor or any other agency and make payment for such work.

Bidders should find out the capacity of the quarries and accordingly plan procurement of coarse/fine aggregates either from the existing quarries or establish their own quarries and crushing arrangements

- 2.2** It is the responsibility of the contractor to thoroughly examine the site of work and all constraints before submitting the bid(s).

2.3 The Nature of Work :

The works to be executed can broadly be grouped as under:

2.3.1 Civil

A. Formation

Earthwork in formation and cuttings for the full length, laying of a blanket layer as per RDSO guidelines with suitable materials as approved by Engineer.

The top width of the proposed new alignment for bank shall normally be 7.85 m and 8.00 m on curves with 2(H):1(V) side slopes. For cutting width of formation in the proposed line excluding side drain shall be 7.85m on straight with extra clearance on curves, side slopes for cutting shall be as under:

		H : V
(i)	Hard rock	$\frac{1}{4} : 1$
(ii)	Soft rock	$\frac{1}{4} : 1$
(iii)	Moorum/Hard soil/Ordinary soil	1 : 1

Formation in embankment shall be provided with side slopes of 2:1 or flatter as required. Side slopes shall be turfed. Bank of height more than 6 m shall be designed for slope stability and the slope shall be adopted accordingly. Earthwork shall be provided with contractor's own earth.

B. Other Activities:

1. Providing and maintaining office accommodation, equipment and vehicles for the use of the Employer and their Assistants and Staff during the contract and defect liability periods.
2. Setting out the line and level of alignment for the proposed doubling and establishing working bench marks and alignment references, taking the details from bench marks and alignment references established by the Employer/ other designated contractors.
3. For carrying out accurate survey work, survey control points shall be established along the railway line using high end survey equipment such as DGPS or Total Station connected with nearest GTS Bench Mark. Also reference pillars are to be established for relocation. This work is meant for maintaining & checking proper alignment of mid-section & bridges for which the contractor is solely responsible.
4. Every precaution has to be taken such that there shall be least disturbance to road traffic during transportation of construction materials to the site of work.
5. Making and supply of 'As Built' drawings for the new assets created.

2.4 Special stipulations/features:

Civil Work

- 2.4.1 While planning for the work of transportation of bridge construction materials to the bridge site., the finished formation of earth work in banks and cuttings with or without blanket layer should not be used for plying of trucks or other vehicles used for transportation. This restriction has specially been imposed to save the top surface of the formed formation from forming pits and ruts, which later are likely to accumulate water and pose problems for maintenance.
- 2.4.2 The mechanical means required to meet the stipulations mentioned in the above sub Para should be arranged by the Contractor.
- 2.4.3 Railway land, if available and spareable, shall be provided for the purpose of stacking of material and setting up of concrete batching plant, etc. However, the Contractor shall be responsible for arranging any such requirement of land and arranging/developing any required approach to site of work, etc at his own cost.
- 2.4.4 The Contractor shall be required to mobilise resources for taking up work at a number of locations simultaneously. The planning of resources may be done at least to meet these requirements.

2.4.5 The bidder may ascertain availability of suitable/preferred type of soil for embankment and lead/lift involved before quoting his rates.

2.4.6 Power & Traffic Block:

- (i) Track occupation may be granted at any time during day or night to suit convenience of traffic operations and will ordinarily be granted over a distance covered by one or two consecutive block sections. Work trains will normally be allowed to take advantage of block shadows. Normally the total durations of block on any section will be max. of 1.5 to 2.5 hours at a stretch in a day, once or more than once. Block provided may be utilized for one or more work trains or track lorries or ladder trolleys to suit convenience of work.
- (ii) Blocks will not ordinarily be given for laying the feeders except where crossing of track is involved, which will have to be laid manually in general.
- (iii) Any traffic / power blocks, temporary speed restrictions and caution orders required in connection with execution of works by the contractor, shall be got sanctioned from the Railway authorities well in advance, through the Engineer. The Railways may sanction the same for specific sites within the overall recovery time available in the Railway timetable. The contractor shall have to schedule his programme according to the convenience of the Railways. No claim from the contractor for any delay / inconvenience / loss on this account shall be entertained by the Employer / Engineer.
- (iv) The contractor shall undertake the work involving Railway track, Railway Electrification installations in co-ordination with the Engineer and Railways in accordance with the programme of work. Where traffic / power blocks are involved, the Contractor shall ensure that interruption to Railway operations, if any, is kept to the bare minimum level.
- (v) In order to minimize blocking of the track for work/material trains, the contractor shall consider the working conditions on the section and assess use of alternative method of construction on a part or whole of the work. He should submit clear proposal along with financial implication if any to the purchaser for such special method of saving of blocks that could be obtained along with reduction / redundancy of the facilities being provided by the Railway / K RIDE.
- (vi) The protection required for block working i.e. flagmen, flags etc. shall be provided by the contractor. Competency for the above shall, however, be given by the Railway authority. Protection of track by banner flags etc shall be done in accordance with General Rules of Indian Railway and Subsidiary Rules of the concerned zonal Railway where work is being carried out. Contractor shall provide Safety helmet, Safety belt and Safety Shoes to their staff while working at site.

- (vii) In case of theft/breakdown, the contractor shall restore the traffic in minimum possible time. Failure to do so shall attract suitable penalty.

2.4.7 Provisional Acceptance:

- i) Immediately after completion of works/such part of works, the Contractor shall certify and advise the Engineer in writing that the works are (i) complete (ii) ready for satisfactory commercial service and (iii) ready to be handed over. He will also place at the disposal of the Engineer the required staff for checking it and putting it into operation.
- ii) The test or tests as stipulated in approved Technical Specifications shall be carried out jointly by the Railway / Engineer and the contractor within a month after the receipt of the Contractor's notification as stated in sub-Para above.
- iii) The provisions contained in the sub clause 10 of GCC shall be followed for taking over of the installations.

2.4.8 Use of Rejected/Sub Standard Items/ Equipment:

In the event of such rejection as aforesaid, the Engineer shall, without prejudice to his other rights and remedies and in particular without prejudice to his rights under the clause just preceding, be entitled to the use of the rejected/substandard equipment/item for a time reasonably sufficient to enable him to obtain other replacement. During such period, if the rejected/substandard equipment/item is used commercially the Contractor shall not be entitled to the payment on energisation until such rejected equipment is rectified and/or replaced, but the Engineer shall not be entitled to claim any damages arising out of rejected/ substandard equipment/item in respect of such period.

2.4.9 Guarantee

- (i) The Contractor shall guarantee satisfactory working of the installations erected by him, for a period of 12 (Twelve) months from the date of commercial operation or from the date of Provisional Acceptance by the Engineer whichever is earlier. The guarantee for spares (if any) should be coincident with the guarantee for erected equipment.
The provisions contained in the sub-clause 11. "Defects Liability" of GCC shall be followed for rectification of defects
- (ii) During the defect liability period the Contractor shall keep available an experienced engineer and necessary equipment to attend to any defective installations resulting from defective erection and / or defects in the equipment supplied by the Contractor. The Contractor shall bear the cost of all modifications, additions or substitutions that may be considered necessary due to faulty materials, design or workmanship for the satisfactory working of the equipment. The final decision shall rest with the Engineer/Employer.

- (iii) During the defect liability period the Contractor shall be liable for the replacement at site of any parts which may be found defective in the equipment whether such equipment be of his own manufacture or those of his sub-contractor whether arising from faulty design, materials, workmanship or negligence in any manner on the part of the Contractor provided always that such defective parts as are not repairable at site are promptly returned to the contractor if so required by him at his (Contractor's) own expenses. In case of type defects in Contractor's equipment and components detected during guarantee period, Contractor should replace all such items irrespective of the fact whether all such items have failed or not. The contractor shall bear the cost of repairs carried out on his behalf by the Engineer at site. In such a case, the Contractor shall be informed about the works proposed to be carried out by the Engineer/Employer.
- (iv) If it becomes necessary for the Contractor to replace or renew any defective portion of the equipment under the Para aforesaid then the provision of the said Para shall also apply to the portions of the equipment so replaced or renewed until the expiration of six months from the date of such replacement or renewal or until the end of the above mentioned period whichever is later. Such extension shall not apply in case of defects of a minor nature, the decision of the Engineer or his nominee being final in the matter. If any defect be not remedied within a reasonable time during the aforesaid period, the Engineer may proceed to do work at the Contractor's risk and expense, but without prejudice to any other rights and remedies which the Engineer may have against the Contractor in respect of such defects or faults.
- (v) The repaired or renewed parts shall be delivered and erected on site free of charge to the satisfaction of Engineer/Employer.

2.4.10 Accountal and disposal of released materials:

- (i) The Contractor shall liaison with the Engineer to finalize the procedure for taking over of the whole or part of the section and for disposal of the released materials.
- (ii) All released materials shall be handed over to the authorized Railway Representative through the Engineer at the nearest OHE/PSI depot or places nominated by Railway/K RIDE.
- (iii) The material released on account of modifications/alterations shall be accounted by the contractor in the presence of the Engineer and the Railway Representative, except for the material permitted to be re-used by the Engineer. For this material, only erection cost shall be paid, under the appropriate item of the Schedule.
- (iv) If any shortfall of released material is noticed at the time of completion of the work, the contractor shall be liable to pay for the shortfall as per the prevailing rates or the same shall be recovered from the final bill of the contractor as per the extant policy of K RIDE.

2.5 CODES & SPECIFICATIONS

The works shall be carried out as per Standard Specifications of Indian Railways/South Western Railway/ K RIDE (as detailed by K RIDE), which can be obtained on payment. Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished and work performed or tested the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards which ensure an equal or higher quality than the standards and codes specified will be accepted subject to the Engineer's prior review and written approval. Differences between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Engineer at least 28 days prior to the date when the Contractor desires the Engineer's approval. In the event the Engineer determines that such proposed deviations do not ensure equal or higher quality, the Contractor shall comply with the standards specified in the documents.

All goods and materials to be incorporated in the goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided for otherwise in the contract.

- (a) The Standard Specifications of Indian Railways/South Western Railway/K RIDE and the list of codes and manuals given in the annexure thereof shall be prime governing.
- (b) Where there is conflict between provisions in IRS & IS specifications, provisions in IRS specifications shall prevail.
- (c) Where there is no provision of specifications in IRS, provisions in IS specifications should be adopted. Where there are no provisions in IRS and IS Specifications, provisions in IRC Specifications should be followed.
- (d) For items not covered in IRS/IS/IRC specifications, BS-5400 Part 1 to 10 may also be considered.
- (e) The decision of Engineer shall be final and binding in the interpretation of the clause of the codes of practice and specifications of this tender and no claim whatsoever shall be entertained on this account from the Contractor.

2.6 SURVEY AND FIXING WORKING BENCH MARKS AND ALIGNMENT MARKERS.

- 2.6.1 The work of conducting survey and fixing bench marks and alignment markers before the start of any work on this tender is included in the works covered by the present Tender.

2.7 Bench marks :

- 2.7.1 All along the length of the proposed double line benchmarks have been set up by the Employer at intervals of about a kilometer. The details of these bench marks along with their reduced levels have been marked on the design drawings indicating the plan and 'L' section which form a part of the tender. The contractor along with the Engineer should verify the details of these bench marks in the first instance, soon after taking possession of the site. If any mistakes are detected in these details of these bench marks the same should be indicated to the Engineer. The mistakes detected should be corrected in consultation with the Engineer. These corrections should be got approved by the Engineer before starting of any other work.
- 2.7.2 The contractor shall then in presence of the Engineer establish working bench marks at short intervals, adequately connecting them to the reference bench marks set up by the Employer in the Project length. The working bench mark levels should be got approved from the Engineer. An up to date record of all bench marks including approved corrections if any, shall be maintained by the contractor and also the Engineer.
- 2.7.3 All levels taken for making out the longitudinal section and cross section should be related only to these working bench marks.
- 2.7.4 While doing the above mentioned work, the fact that similar work will have to be done once again on the completed earth work in formation for fixing up the longitudinal levels of the installed P. Way should be kept in view.

2.8 Alignment :

- 2.8.1 All along the length of the proposed double line at a intervals of about half a kilometer, alignment reference pillars have been set up the Employer; in addition five reference pillars have been erected for each of the curves to indicate the start & end of the over all length of the curve and its circular portion and apex, by the Employer. In the design drawings showing the plan and 'L' section, which forms part of the tender, the co-ordinates for these pillars have also been given. This has been done to facilitate setting of the alignment of the proposed line. The contractor along with the Engineer should verify the details of these alignment pillars, soon after taking possession of the site. If any mistakes are detected in these details, the same should be indicated to the Engineer before starting any other work. These detected mistakes should be corrected by the Contractor in consultation with the Engineer. These corrections should be got approved from the Engineer.
- 2.8.2 The contractor shall then, in presence of the Engineer, establish working alignment reference markers at shorter intervals, adequately connecting them to

the reference pillars set up by the Employer in the Project length. The location of these subsidiary alignment markers should be got approved from the Engineer. An up to date record of all alignment pillars, and corrections, if any done, shall be maintained by the contractor and also the Engineer.

- 2.8.3 The alignment for the double line should be related only to these working bench marks.
- 2.8.4 While doing the above-mentioned work, the fact that similar work will have to be done once again on the completed earth work in formation for fixing up the alignment of the installed P. Way should be kept in view.
- 2.8.5 After the formation has been constructed, the centre line of track both in Block Sections and Yards should be re-fixed taking guidance from already set up alignment references. Similarly, the rail levels of track both in the block sections and the yards should also be fixed with reference markers. These will be used for installation of track.

2.9 Responsibility for establishing and maintaining working bench marks and alignment markers

- 2.9.1 The Engineer when necessary will provide the contractor with the data necessary for setting out of the centerline. All dimensions and levels shown on the drawing or mentioned in the documents forming part of or issued under the contract shall be verified by the contractor on the site; he shall immediately inform the Engineer of any apparent errors or discrepancies noticed in such dimensions or levels. In consultation with the Engineer, the noticed mistakes should be corrected. These corrections should have the approval of the Engineer.
- 2.9.2 The contractor will be entirely responsible for accurate setting out of the works and safeguarding all survey monuments, bench marks, alignment references etc. The work of setting out shall be deemed to be a part of the general works preparatory to the execution of work and no separate payment shall be made for the same
- 2.9.3 The above-mentioned points have been repeated in the respective sections dealing with specifications for different works for laying emphasis on these items.
- 2.9.4 The contractor will be entirely responsible for accurate setting out of the works and safeguarding all survey monuments, bench marks, alignment references etc. The work of setting out shall be deemed to be a part of the general works preparatory to the execution of work and no separate payment shall be made for the same.

2.10 Issue of materials by Employer :

- 2.10.1 The issue of materials by the Employer to contractor shall be governed by the following change.

2.10.2 The rails and other materials to be issued by the Employer to Contractor will be handed over at any convenient locations within Railway Land in the contract section. The contractor should collect the same from these locations and transport them to the work site as found necessary. He shall use only mechanical means for handling of rails during all stages of work to avoid any damages to the rails. Leading will be paid separately as per relevant item of BOQ.

2.11 to 2.19 These provisions shall not apply

2.20 Interfacing And Integrations of Works :

2.20.1 As a part of provision of this tendered work providing of road bed viz., earthwork & bridges, are to be executed by one Agency only. The interfacing for the purpose of integration of works between the partners of JV, in case the work is awarded to a JV or between the Contractor and his sub-contractors, (if permitted) will arise. This has to be kept in view.

2.20.2 Land is available throughout the section for carrying out the works. However, if additional land is required in yards/mid-section, necessary arrangements will be made for acquiring the land without affecting the progress of work

2.20.3 This provisions shall not apply

2.20.4 The contractor shall take full responsibility in terms of organizing, managing, coordinating and administrating the interfacing of all components of works including all issues related to and arising out of such tasks and responsibility. The contractor shall interface with all concerned authorities and other contractors as required to complete the work satisfactorily within the stipulated period.

2.20.5 Under consideration and application of the above clause, the contractor shall and has also the obligation to liaise with the other contractors and Authorities to obtain all necessary technical information, all necessary information concerning organization of works, coordinating the works etc. which are necessary to assess, mitigate, take care of contractual obligations, risks, liabilities and whatsoever arising out of interfacing, engineering issues, organization of the works etc. The employer/engineer shall not be held liable in any way, throughout the preparation of the offer and/or execution of the works and/or maintenance period and/or defects liability period for any omissions, misunderstanding, negligence etc. arising out of interfacing, coordinating, organizing etc. of the works. The employer will not entertain any claim arising out of misunderstanding, miscommunication, omission, withholding of necessary/required information or whatsoever between the concerned contractors/Authorities concerning interfacing, organizing etc. of works. In case of any claim arising from any of the contractors, as aforesaid, referring to interfacing and/or interfacing related issues, the Employer will hold the concerned contractors liable for not taking care of their contractual obligation concerning interfacing, organizing, co-ordination etc. of the related works.

2.20.6 This provision shall not apply.

- 2.20.7 Needless to say that commissioning of this double line project requires close coordination among various agencies executing the works in this section, Engineer, Employer and the Railway authorities. The contractor shall therefore plan all his works requiring interfacing, like works in mid-section, station yards, with other agencies, meticulously, in consultation and coordination with all concerned parties, in advance, for expeditious execution, without causing any delay either to his works or those of others.
- 2.20.8 The contractor shall strictly adhere to the work plan made for works requiring interfacing. Any delay either on his part or on the part of other agencies and other bottlenecks that could affect the pace of works shall be informed to the Engineer in time so as to enable him to take corrective steps.
- 2.20.9 If, in the opinion of Engineer, any delay in execution of any part of the Project requiring interfacing is attributable to the failures of the contractor to take adequate steps for smooth execution of such works, then the Engineer shall have the right to take necessary steps to organize and streamline such works, including excluding the requisite portion of work from the scope of the Contractor and getting the same executed by other agencies, at the risk and cost of the contractor.
- 2.21 Damage to property :** The contractor shall organize all his activities so as not to cause any damage to the property of Railway or that of other agencies or any third party. In spite of taking all precautions, in the unfortunate event of any damage to the property, then the contractor shall not only indemnify the Employer of the claims made by the affected parties but also settle the matters with the affected parties as per law. If the nature of damage is one of that affecting the train movements or causing a safety hazard to the public, then the situation will be treated as an emergency and the Engineer reserves the right to take all necessary steps as deemed necessary to restore train operations or to remove the hazardous situation or to mitigate the damage, at the risk and cost of the contractor.
- 2.22 Survey Equipment :** The contractor should provide the survey equipment and other accessories as per the instructions of Engineer as and when required. He should also provide all necessary help as required by the Engineer for checking the works, whenever required.
- 2.23 Power Line Crossing :** This provision shall not apply
- 2.24** All power requirements for execution of works shall be arranged by the Contractor from his own resources. Subject to availability of power, the Employer/Engineer will recommend to the Railway Authorities for providing power connection. The Contractor shall bear the cost of installation and payment of necessary charges for providing such power connections as per the Terms and Conditions of the Railway.

SITE FACILITIES FOR THE EMPLOYER AND THE ENGINEER
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3.0 BAIYYAPPANAHALLI – HOSUR DOUBLING PROJECT :

Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations. (Single Package).

3.1 GENERAL

The Contractor shall provide for the use of the Employer/Engineer office accommodation, equipment, communication & drawing facilities throughout the course of the work and for such period of time during the defects liability period as the employer & Engineer may require, The details of the accommodation & the other facilities are detailed below:

All the facilities under this clause will continue to be maintained by the Contractor free of cost till the defect liability period is over. Thereafter the Contractor shall dismantle the building and take away all the materials, office furniture, & equipment etc which will be the property of the Contractor. The provisions of the site facilities will be paid for separately.

3.2 SITE OFFICES

3.2.1 Accommodation for the Employer/Engineer shall consist of one site office to be constructed by the Contractor at a place decided by the Employer, within Two months from the date of commencement of the works. In case of delay beyond Two months in provision of the accommodation either through construction or hire, penalty @ Rs 25000/- Per week or part thereof will be imposed."

3.2.2 The site office should remain open for 24 hours a day and 7 days a week i.e. round the clock till the defect liability period is over.

3.2.3

Each Site Office will provide for the following rooms: SITE OFFICE for Engineer/Employer to be constructed by Contractor	Area required (Sq. m)
Project Director of K RIDE	12
Project Manager of PMC	9
Conference/Visitor Room	16
Computer/Drawing Office	9
Pantry & Kitchen area	6
File and Documents & Instruments Storage	7
Toilets	3
Total "A"	62

- 3.2.4 Materials used for the construction of the offices shall be new and of good quality. Materials shall be chosen such that the buildings when erected shall give good ventilation, heat and sound insulation.
- 3.2.5 All buildings shall be supplied with continuous (24 hour) running potable cold water to the kitchens and wash rooms. The toilets may use raw water for flushing. The Contractor shall also arrange for the constant and hygienic disposal of all effluent, sewage and rubbish from the buildings.
- 3.2.6 All buildings shall be supplied with electricity, AC 240 Voltage 50 Hz that shall be distributed to each room in accordance with the Regulations. Lighting and electrical power points shall be provided in each room. The disposition and location of light and power points will be as directed by the Engineer. 24 hours power supply is to be arranged by contractor to meet full power load. Fans and coolers etc will be provided as decided by the engineer. Rooms for (i) Project Director of Employer (ii) Project Manager (iii) Conference/Visitor Room shall be provided with Air Conditioners of appropriate capacity.
- 3.2.7 This provision shall not apply
- 3.2.8 Fire fighting equipment shall be provided in accordance with the local recommendations.
- 3.2.9 This provision shall not apply
- 3.3 FURNITURE AND OTHER OFFICE EQUIPMENT**
- 3.3.1 The Contractor shall supply and maintain the following new furniture and equipment to the Engineer's offices within two months of the date of commencement of the works until the defect liability period is over:

Description of Item	Nos.
Conference table (2000mm x 1500mm)	1
Conference chairs	8
Glass-fronted lockable bookcase	1
1500mm x 900mm double pedestal desk	1
1200mm x 900mm single pedestal desks	1
Swivel office chair with armrests	4
Swivel office chair without armrests	4
Typist chair	2
Visitors chair	6
4-drawer filing cabinet	2
Plan chest (A 0 size)	1
1500mm x 900mm tables	4

Steel lockable cupboard 6ft high with internal shelves	2
Heavy Duty Paper Shredders	1
First aid kits for up to 36 persons	1
Safety helmets, safety shoes, reflective jackets	For all the men working at site
Safety harness	10
Day-glow waistcoat	For all the men working at site
Pairs industrial safety goggles	6 pairs
5 L kettles	1
2 L kettles	2
Potable water dispenser with hot/cold Taps	1
Cups and plates	20
Fire extinguisher	(As required confirming to the stipulations of Local authorities).
Silent DG set of minimum power of 5 KVA	1

Note: In case of failure to provide the equipments within Two months, penalty @ Rs 10000/- Per week or part thereof will be imposed.

3.4 TRANSPORT

3.4.1 General

The Contractor shall provide road transport (for the use of the Employer and the Engineer within one month from the date of commencement of the works) and the Payment for the same shall be covered in relevant schedule of the BOQ

3.4.2 Road Transport

3.4.2.1 Road Vehicle (4 wheeler)

- a) The vehicles shall be new and delivered and maintained by the Contractor in good roadworthy condition including daily cleaning. The vehicle shall be replaced with a new vehicle after a maximum run of 75000 Km or three years whichever is earlier.
- (b) The Contractor shall employ and make available competent drivers fully licensed to operate the vehicles as and when required by the Engineer/Employer. The Contractor shall replace drivers at the request of the Engineer/Employer.

- (c) The vehicles shall be registered and insured for use on the public roads and shall have comprehensive insurance cover for any qualified driver authorised by the Engineer together with any authorised passengers and the carriage of goods or samples.
- (d) The Contractor shall provide fuel, oil for running of each vehicle for 3000 kms monthly and ensure maintenance in conformity with the vehicle manufacturer's recommendations and all relevant toll and parking charges incurred in connection with the Works. The vehicle shall be provided day and night as required by the Engineer/Employer. If any vehicle is allowed, with the prior approval of Project Director, to run beyond 3000 Kms in a month the charges for running of the additional kilometres shall be paid separately under relevant schedule.
- (e) A suitable replacement shall be provided by the contractor for any vehicle out of service for more than 24 hours. If the contractor, at any time, fails to provide vehicle(s) or substitute vehicle(s) as specified, an amount of Rs.3000 per day for each vehicle (that the Contractor failed to provide) shall be recovered from the Contractor.

3.4.2.2 **Motor Bike**

- (a) The Motor Bike shall be new and delivered and maintained by the Contractor in good roadworthy condition. A new helmet shall also be provided along with the bike. The motor bike shall be washed and cleaned once in a month. The bike shall be replaced with a new Motor Bike after a maximum run of 90000 Kms or three years whichever is earlier.
- (b) The Motor Bike shall be registered and insured for use on the public roads and shall have comprehensive insurance cover for any rider having valid driving license and authorised by the Engineer.
- (c) The Contractor shall provide fuel, lubricants and other oils for running of the Motor Bike for 3000 Kms monthly and ensure maintenance in conformity with the vehicle manufacturer's recommendations and all relevant toll and parking charges incurred in connection with the works shall be borne by the Contractor. The motor bike shall be provided day and night as required by the Engineer/Employer. If any motor bike is allowed to run beyond 3000 Kms in a month, the charges for running of the additional kilometres shall be paid separately under relevant item.
- (d) A suitable replacement shall be provided by the contractor for any motor bike out of service for more than 24 hours. If the contractor at any time fails to provide motor bike as specified, an amount of Rs.500 per day for each motor bike (that the Contractor failed to provide) shall be recovered from the Contractor.

3.4.3 Number of Vehicles (4 wheelers) and Motor Bikes

- 3.4.3.1 The Contractor shall provide the following type of vehicles as per requirement indicated by the Project Director within one month of the date of commencement.

Type	Numbers
Maruti Swift DZIRE / Toyota Etios or similar approved road vehicle(s)	1
Motor Bike 150CC or more, Bajaj Pulsar/HondaCB Hornet 160R/ Hero Xtreme Sorts/ Suzuki Gixxer or Similar	2

- 3.4.3.2 The vehicle requirement given in para 3.4.3.1 above is the maximum requirement of the vehicles at a time. However, requirement in a particular period will be intimated by the project director to the contractor on programme basis at least 7 days before the actual date of requirement after approval of the distribution by the Project Director. The Contractor shall withdraw particular vehicle(s) if the same is not further required by the Engineer/Employer if so directed by the Project Director. In such cases the instructions shall be given in writing 7 days in advance. The requirement during the Defect Liability Period will be quite less than the maximum requirement mentioned above.

3.4.3.3 Duration of Transport Requirements

Transport for the Engineer / Employer shall be provided so as to cover the entire completion period(s) and defect liability period(s). The transport so provided, as per Para 3.4.2 & 3.4.3, shall continue to be the property of the Contractor.

3.5 OFFICE MAINTENANCE

- 3.5.1 The contractor is required to maintain the offices throughout the contract period and defect liability period and provide the following, but not limited to:

- Pay all electricity charges.
- Pay all water charges.
- Carry out necessary repairs to office and equipment as and when required.
- Day - to - Day cleaning and maintenance and watch & ward etc

- 3.5.2 The contractor shall provide within Two months from the Date of Commencement following personnel in the office as required for watch and ward of the site office.

Watchmen / Security (3 shifts of 1 men in a shift, till the defect Liability period is over)

Note: In case of delay beyond two months, penalty @ Rs 5000/- Per week or part thereof will be imposed.

3.6

EQUIPMENT FOR USE AT SITE OFFICE.

The Contractor shall provide new equipment and software as listed below and maintain them for the exclusive use of the Employer and the Engineer. The Contractor shall provide and maintain the following equipment for the use of the Engineer and the Employer within one month from the date of commencement of the works until the defect liability period is over. The payment for the same shall be made separately under relevant BOQ item. On completion of defect liability period, the equipment shall be property of the Contractor.

(a)	Desktop Computer nos. two	With minimum specification of Intel Core i7/i9, 3.4 GHz, 3 MB Cache, 8 GB DDR3 RAM, 500 GB Hard Disk Drive, 21" colour TFT monitor, 10/100 LAN Card, Modem Card, Operating System - Windows 10 Professional or higher preloaded with media and documentation and certificate of authenticity and Microsoft Security Essentials preloaded antivirus software.
(b)	Laptop rugged – two Nos.	With minimum specification of Intel Core i7/i9, 8 GB RAM, 500 GB Hard Disk Drive, 15" color display, 2xUSB-2.0, standard keyboard Battery backup - minimum 4 hrs Operating System - Windows 10 or higher preloaded with media and documentation and certificate of authenticity and Microsoft Security Essentials preloaded antivirus software. A laptop bag and Adapter/Battery charger shall also be provided with the laptop.
(c)	Printers – 2 nos. (A4 size – 1 No. and A3 size – 1 No.)	The A4 size colour printer cum scanner cum copier shall be all in one officejet having features of Fax, Scanner and Printer, A3 size printer cum scanner cum copier shall be Colour Officejet with a print speed of up to 8 pages at 800 dpi or More.
(d)	Application software	(i) Microsoft office latest release (2016 of latest). (ii) AUTOCAD 3D latest (iii) M S Project/ Sure Track.

	(iv) PDF Converter/Professional
(e)	UPS system with sufficient power backup (with minimum backup time of 30 minute) to meet the sufficient power load in case of power disruption.
(f)	Surge Protection Devices (one for each computer and printer as given above)
(g)	Power supply for the systems is to be AC 240 volts, 50 Hz from normal building wiring circuit mains, power regulator, stabilizer or transformer should be supplied by the Contractor for the computer systems such that the systems can function efficiently.
(h)	At least 20 MBPS internet connection with wifi facility so that multiple devices can be connected.
(i)	50 MBPS wifi HotSpot/USB Dongle with 4 GB data connection and minimum monthly download limit of 50 GB for use with laptops – two nos.

Note: In case of failure to provide the equipment including original software & internet connectivity within one month, penalty @ Rs 25000/- Per week or part thereof will be imposed

3.7 Documentation:

A complete set of documentation will be supplied with each System. The documentation should be self-tutorial in nature and be readily understood by non-computer personnel. The following manuals will be supplied with the system:

- (a) Manual on how to operate the equipment; and
- (b) Manual on how to use the facilities and software provided by the supplier (including languages and utilities).

4.0 SPECIFICATIONS

Separate priced booklet containing Indian Railway/South Western Railway Standard Specifications for Materials and Works Civil, Electrical and Signalling and Telecommunication) are available in K RIDE office. These specifications shall be applicable for all works covered in this contract.

It is presumed that bidders have gone through the above (including latest correction slips issued up to the date 28 days prior to the deadline for submission of bids) before quoting the rates.

ADDITIONAL SPECIAL CONDITION & SPECIFICATION FOR SUPPLY, FABRICATION, ERECTION & LAUNCHING OF STEEL GIRDERS FOR RAILWAY AND ROAD OVER BRIDGES.

1.0 GENERAL

1.1. This specification covers **supply**, fabrication, assembling, erection and **launching of Steel superstructure(Girders) and bearings.**

1.2. The fabrication of steel girder bridges is being done by various Railway Workshops as well as through trade. The fabrication is governed by the provisions of;

- i) Indian Railway Standard specification for fabrication and erection of steel girder bridges and locomotive turntables. (B1-2001).
- ii) Indian Railway Standard Code of Practices for metal arc welding for structural steel bridges carrying rail cum road or pedestrian traffic (Adopted 1972 Revised 2001).
- iii) GUIDELINES ON FABRICATION OF STEEL GIRDERS FOR CONSTRUCTION/FIELD ENGINEERS BS –110 (R)- issued by RDSO.

1.3. The scope of work shall include:

(a) Supply, Fabrication, assembling and Erection of Open Web Steel Girders/Plate Girders and Composite Plate Girders for **Railway Bridges** (as per IR loading) and Bow String Steel Girders/ Composite Plate Girders (as per IRC loading) of specified span(s) as mentioned in GAD including erection and launching (with or without power and traffic power blocks, as applicable) for Rail/**Road Over Bridges** (ROBs.)

(b) Providing and fixing in position standard fixed type POT bearing, free sliding type POT cum PTFE bearings, as per approved drawings including designs of bearings.

(c) Preparation of temporary Arrangement Drawings (TAD), Launching Scheme, Fabrication/Detailed Shop Drawings including drawing office dispatch lists(DODL) , and other documentation as required by KRIDE.

(d) Preparation of Quality Assurance Plan (QAP) for super-structure including bearings.

(e) Other miscellaneous works as listed in Schedules / GCC/ SCC.

1.3.1. The contractors/agencies and officials associated with fabrication work should have thorough understanding of both the codes under para 1.2 (i & ii). However, the “GUIDELINES ON FABRICATION OF STEEL GIRDERS FOR CONSTRUCTION/FIELD ENGINEERS BS-110” , help the field engineers associated with execution of the fabrication work through trade and cover various aspects which require close attention of the field engineers for ensuring quality of the fabrication work. These guidelines are just to facilitate and not to supersede the two codes specified in para 1.2((i) &(ii) above. All engineers associated with fabrication are advised to understand the provision of IRS B1-2001 and Welded Bridge Code and take help from guidelines specified in para 1.2 (iii) above.

1.4. Site Inspection

Tenderers are requested to inspect the site and carry out careful examination to satisfy them as to the nature of work involved and facilities available at the site. They should note carefully all the existing structures and those under construction through other agencies. They should also study the suitability of utilizing the different equipment and the machinery that they intend to use for the execution of the work. The tenderer should also select suitable sites for the purpose of locating their store yard, laboratory, staff quarters etc., and satisfy themselves with regard to the feasibility of transporting the trusses from the yard to the final site of placement etc.

2.0 FABRICATION

2.1 General

The fabrication of the girders and its accessories shall be carried out by the contractor in his factory premises or in a well-established fabrication workshop to be set up by the contractor at bridge site or any other location as approved by the Engineer. The workshop staff shall have requisite experience, proven skill and experience in the technique of fabricating large components.

2.1.1 For Steel Girders of all bridges, other than Important Bridges, (as defined in IRS Substructure Code) including ROBs, the tendering firm shall be from RDSO approved list of firms for Steel Bridge Girder; in case the tendering firm is not in the list of RDSO approved firms for Steel Bridge Girder, then he will have to get the Steel Girder manufactured through an RDSO firm in the RDSO approved premises only. Further subject to condition that tendering firm fulfills other Technical eligibility criteria, as prescribed by the Railways in the tender and the Steel Girder to be manufactured in the RDSO approved premises only.

2.1.2. For the Steel Girders of Important Bridges, (as defined in IRS Substructure Code) besides RDSO approved firms, the tendering firm will have to get the Steel Girder manufactured through an RDSO approved firm in the RDSO approved premises of firm. The agency will be permitted to set up a site fabrication workshop at site of work which meets the ' Standard Technical Requirements' (STR) for Steel Bridge Girder issued by RDSO which is appended in **Clause 31** of this Additional Special Condition and specification. The approval of the site fabrication workshop meeting with STR to be done by RDSO only and not by any other organisation.

2.1.3. Accuracy of fabrication shall be realized through controlled high precision jigs, fixtures and templates, which shall be inspected and passed by Inspection Agencies as specified in Clause 9.4 of this 'Additional Special Condition and specification'. The fabrication shall be preceded by **Quality Assurance plans** to be submitted by the contractor and every activity shall be documented in detail. The Quality Assurance Plans shall clearly indicate how individual processes such as cutting of raw steel, making, drilling, assembly riveting /welding, painting, handling etc. shall be monitored for quality. The quality parameters for monitoring shall be identified along with monitoring these identified quality parameters and shall also be specified in these quality plans .The contractor shall get these quality plans approved from Engineer before start of fabrication work. The Engineer shall be empowered to check the manufacturing process from time to time to ensure that the work is executed as per approved quality plans. The quality records shall be submitted to Engineer for record, after completion of fabrication work.

2.1.4. The works of fabrication in contractor's fabrication shop will at all times be open for inspection by Engineer or any other agency as nominated by Engineer. Before dispatch of fabricated steel work from the shops, the same will be inspected in the contractor's fabrication workshop by Engineer or any other authority/agency nominated by Engineer who will thereafter issue inspection certificate.

2.1.5. Any defect noticed during inspection in the execution of work shall be rectified or replaced by the contractor at his own cost. The decision of Engineer or any other agency nominated for inspection as to be rectified or replaced, shall be final and conclusive.

2.1.5. In the fabrication of girder, necessary arrangement and provision shall be kept for inspection facilities underneath the girder and also for carriage of service cables, pipe lines etc as per approved plans.

2.2 Fabrication Drawings

2.2.1. A set of latest approved drawings along with latest revisions should be available in the workshop/ with Agency. On the basis of standard drawings, Fabrication drawings shall be prepared by the fabricating Agency.

2.2.2. The contractor shall prepare detailed shop drawings including drawing office dispatch lists (DODLs) on the basis of design drawings supplied by Engineer in such size and in such details as may be specified by Engineer.

2.2.3. The shop drawings shall be submitted to Engineer in triplicate. One copy of which will be returned after flame cutting, machining to obtain correct length and shape, tolerance provisions. Welding sequence, type and size of welding. No work of fabrication will be started without such approval being obtained. Contractor has to arrange the proof checking of the working fabrication drawings from the nominated Institution/Consultant will be borne by the contractor. Nomination of the Institution/Consultant for proof checking works will be decided by concerned Engineer/Con. Engineer will make all efforts to approve the drawings submitted by the contractor within reasonable time but no claim from contractor for any delay on this account shall be entertained by Engineer.

2.2.4 For Engineer's use and record, the contractor shall supply free of charge, four sets of prints on string paper and one set of neatly executed tracings of all approved detailed drawings and fabrication drawings, soon after communication of approval for use at site.

2.3 Maintenance of records by Fabricators

The records of fabrication shall be maintained in the registers as per the formats given in Appendix I of IRS BI - 2001.

2.4 Tolerance in Fabrication

Fabrication tolerance for girders shall be as stipulated in Appendix II of IRS-BI-2001.

Permissible deviation for driven rivets shall be as stipulated in Appendix IV of IRS-BI-2001.

3.0 BRIEF DESIGN DATA

- (i) Steel Girders of Track Carrying Bridges are designed for 25 T/32.5T axle loading as per Indian Railway Bridge Rules and Standard Specifications. The composite girders of road carrying bridges are designed as per code of practice for Road bridges.
- (ii) All panel joints are designed for vertical and transverse forces including secondary moments.
- (iii) The structure shall be fabricated to camber as per Steel Bridge Code and as provided in the approved drawings.
- (iv) The deflection of girder is expected not to exceed the values as given in the approved drawing.
- (v) All members of the girder and joints are to be either riveted or welded or bolted as shown in the approved structural drawing.

(vi) No welding except where approved by the Engineer is to be carried out at site. All welding/riveting/bolting are to be carried out as per relevant IRS Specifications.

(vii) The materials as well as execution of works shall be confirming to the following specifications and codes of practice (Latest Revision of the Specification /Codes & upto date correction slips to be referred).

3.1 INDIAN RAILWAY STANDARD CODES AND SPECIFICATIONS :

(i) IR Specification for Fabrication of steel girder bridge & Locomotives turn tables (fabrication specification) - SERIAL NO.BI-2001 issued by RDSO, Reprint -2008 (Upto date)and BS-110 –**March 2016**.

(ii) IRS : Bridge Rules (2008)

(iii) IRS : Welded Bridge Code (1989)

(iv) IRS : Steel Bridge Code (2003)

(v) IRS : M-28 Specifications for electrodes.

(vi) IRS : M-39 Specification for wire flux for SAW.

(vii) IRS : Specification for Erection and Riveting of Bridge Girders.

3.2 INDIAN STANDARD SPECIFICATION

(i) IS : 2062-2011 Specification for structural steel.

(ii) IS : 813-1986 Scheme of symbols for welding.

(iii) IS : 800-2007.

(iv) IS : 9595-1996(R-2003) Manual for metal arc welding.

(v) IS : 818-R 2003 Code of Practice for safety and Health requirements in electric and gas welding operations.

(vi) IS : 2074, Ready mixed paints, Red Oxide Zinc chromate.

(vii) IS : 2339-1963 : Aluminium paint

(viii) IS : 2004-1991 Carbon steel forgings for general engineering purposes.

(ix) IS : 1852-1985 Rolling and cutting tolerances for hot-rolled steel products.

(x) IS : 1148 Rivet bars for structural purposes.

(xi) IS : 1929-1982 Hot forged steel rivets for hot closing(12to36mm diameter)

(xii) IS : 4353-1995 Recommendations of Sub-merged Arc welding of mild steel and low alloy steel.

(xiii) IS : 3935 (shear connector)

3.3. INDIAN ROAD CONGRESS SPECIFICATION (ROB's)

(i) IRC: 6 (loading & forces)

(ii) IRC: 22 (Composite construction)

(iii) IRC: 24 (Steel Road bridges)

(iv) IRC: 83(ii) (POT PTFE bearing)

Note : All the codes mentioned under para 3.1,3.2 & 3.3 shall be used / followed with latest updates.

4.0 MATERIALS

4.1 Steel

4.1.1. Steel grade conforming to IS 2062-2011 (with latest amendment) shall be used for all components of steel girder for all spans with quality as specified in the approved structural drawings.

4.1.2. (i) Material for web, flange plate & end plate should be as per IS 2062 Quality.

(ii) No Re-rolled Steel should be used.

(iii) Steel should be procured only from approved manufacturers /venders by RDSO. The source of steel should be got approved by the Engineer / Employer . In support of purchase copy of vouchers are to be submitted.

4.1.3. It may be noted that quality of steel used for fabrication shall be the essence of the contract & shall be rigidly followed. Steel sections to be supplied by the manufacturers shall be ultrasonically tested as per codal provisions at the manufacturer's premises before dispatch. The contractor on receipt of supply in his factory premises/fabrication workshop may have to carryout random USFD testing as per standards laid down in various codes and verify them with the list received from manufacturers, if instructed by the inspection agency/ Site Engineer. Only tested steel shall be used for fabrication.

4.1.4. All rolled sections shall bear cast mark and shall be of such length as to avoid butt welded joints in components of truss. Such rolled sections shall be within rolling tolerances stipulated as per IS:1852 and shall be defects free.

4.1.5. The tenderer (s) shall supply information in the tender regarding source/manufacturers from where procurement of steel is proposed by him/them. However, the usage of type and grade of steel may vary during the execution of the work depending upon the design requirement and market availability. No claim shall be entertained from the contractor on this account and payment shall be as per relevant items in the schedule of items, quantities and rates.

4.1.6. Steel for rivets shall conform to IS: 1148 for M.S and IS: 1149 for H.T.S. Welding consumables for Manual Metal Arc Welding (MMAW) shall conform to IRS-M-28, wire and flux combination for submerged arc welding to IRS M-3 and filler wires for CO2 welding to RDSO/M&C/Specification issued vide letter No. M & C/W/111/24 dated 1.1.1994/7.2.1994.

4.1.7. All welding consumables (electrodes, wire, flux etc.) shall be procured only from the manufacturers approved by RDSO subject to final approval by Engineer.

4.1.8. In an extreme eventuality of steel of particular section not being made available locally by Indian Steel manufactures, the tender/s may have to import steel. The imported steel shall be of equivalent specification. Use of built-up

sections in place of rolled sections can be permitted. Working out the weight of steel for payment in such cases will be based on the actual sections used. Engineer will not take any responsibility of delays in importing the steel and no cognizance of the same will be given in the completion period.

4.1.9. Test Certificates

All materials for the work shall pass tests and/or analysis prescribed by the relevant IS specifications or such other equivalent specifications. For all materials including rivets and bolts, the Contractor shall furnish copies of test certificates from the manufacturers including proof sheets, mill sheets etc. showing that the materials have been tested in accordance with the requirements of various specifications and codal provisions.

4.1.10. In addition to the test certificate obtained from the steel producers/suppliers/dealers, for conformity sake, all materials/consumables, i.e. steel, rivets, welding electrodes, paints, etc. shall be got tested from the NABL approved labs/recognized labs. Proper record of all such test results shall be maintained. A copy of the same be given to client/KRIDE as well. Test result of the supplier and that of the lab should match with each other. In case of major difference, matter has to be investigated. Decision of the KRIDE shall be final in that regard.

4.1.11. Even satisfactory outcome of such tests or analysis shall in no way limit, dilute or interfere with the absolute right of the Engineer to reject the whole or part of such materials supplied, which in the judgment of the inspecting authority does not comply with the conditions of the contract. The decision of the Engineer in this regard shall be final, binding and conclusive for all purposes.

4.1.12. Rolled steel shall also be ultrasonically tested by the reputed firm. Only ultrasonically tested steel shall be used for fabrication work. Record of ultrasonically tested steel shall be maintained separately. All the testing work shall be done in accordance to the provisions of the relevant codes.

4.2.7. Regarding radiographic testing/x-ray testing of the welded joints, matter shall be finalized in consultation with the inspecting authority. Agreed to procedures shall be followed. Necessary arrangement for that has to be got done by the tenderer at their own cost. All testing work shall be got done by the contractor at their own cost. Nothing extra shall be paid. Tenderers should quote their rate accordingly.

4.3. Quality Assurance Plan (QAP) , WPSS and WPQR

4.3.1. Before fabrication of girder, a Quality Assurance Plan (QAP) is prepared by the Contractor based on RDSO guidelines for fabrication of girders (as per sample given in Annexure-I of BS-110 issued by RDSO) and submitted to Inspection Agency as specified in **clause 9** of this specification for approval to ensure proper quality of fabrication. The QAP shall indicate stage wise manufacturing process covering various steps, test checks and their frequency, sampling plan, authority for grant of clearance etc. for all activities. The QAP

submitted by fabricating agency is scrutinized by Inspecting Agency on visiting workshop/ site, inspection of the manufacturing process and the same is approved for the particular work during currency of the work/contract before the Agency proceeding with the work.

4.3.2. QAP is to be scrutinized and approved by the Inspection Agency. The QAP should be signed by Fabricator and KRIDE Officials [Minimum JAG Level] before submission to Inspection Agency. Field Engineer should ensure that work is carried out strictly as per the approved QAP and no deviation takes place from QAP. All the stages should be studied in detail, prior to start of work.(BS 110-issued by RDSO.)

4.3.3. Girders should be got fabricated by a firm who has full-fledged fabrication workshop and should have valid certification of RDSO for fabrication of girders. Any another procedure will require approval of Engineer.

4.3.4. Scrutiny & Approval of Welding Procedure Spec. Sheet (WPSS) (final approval to be done by Inspecting Agency as specified in clause 9.4 of this document): WPSS is process sheet indicating plate/section used, welding process, type of joint, welding consumables quality, welding parameters, acceptance standard, tests applicable etc. Field Engineer should ensure that welding is carried out as per approved WPSS. Performa for WPSS is given in Appendix-V of IRS B12001. WPSS should be signed by fabricator and KRIDE Officials before sending for approval of Competent Authority (Annexure-II). It is to be ensured that welding consumables to be used are from approved source and a proper record of their consumption is maintained. A sample Performa for record keeping of consumables is enclosed as Annexure–III.

4.3.5. Welding Procedure Qualification Records (WPQR) (final approval to be done by KRIDE): WPQR is the document indicating approval of various welders who are to be deployed for carrying out welding work for fabrication. It contains Name of the welder with photograph, qualification, experience, qualification tests and records for each welding process and joint, welding parameter. Tests are conducted by Inspecting Agency before qualifying the welders and then approval is granted through WPQR Proforma given in Appendix-V of IRS B1-2001. WPQR should be signed by fabricator and KRIDE Officials before sending for approval of Competent Authority in the prescribed format (Appendix V of IRS B1-2001). Field engineer should ensure that welding is done only by approved welders and no deviation takes place.

4.4. Handling and Storing of Steel Sections

4.4.1. All projecting plates or bars shall be kept in shape by timber or angle bars spiked or bolted to them and the ends of chord lengths, end posts etc. at their shipping joints shall be protected and stiffened so as to prevent damage or distortion in transit as the Engineer may direct.

4.4.2. All threaded ends and machined surfaces are to be efficiently protected against damage in transit. The parts shall be transported in convenient lengths.

4.4.3. All straight bars and plates except small pieces are to be transported in convenient bundles temporarily riveted or bolted together or bound with wrought iron or suitable wire as the Engineer may direct. All rivets, bolts, nuts washers, plates under 300mm square and small articles generally are to be packed separately for each span in cases each weighing when full not more than 350 kg or in strong petroleum casks, or barrels as approved by Engineer. If not entirely filled by the contents the space left shall be closely packed with wood shaving or other suitable material. Bolts and rivets of different sizes shall be separately packed in bags, each bag having a label indicating its contents. A list of contents shall be placed on top of each case or cask.

4.4.4. All rolled steel received from supplier shall be carefully unloaded to avoid twisting, bending and damage to mill scale, stacking area shall be covered and the materials placed on a raised platform above ground level and every care taken to avoid contact with water in order to prevent rusting and pitting.

4.4.5. All sections damaged transit or handling shall be stacked separately and damaged portions shall be indicated by paint of distinct colour. Such materials shall be dealt with as per instructions of the Engineer. Badly damaged portions may require replacement. Slightly distorted parts or broken parts must be dealt with as the case demands and as directed by Engineer. The rectified sections shall be used for fabrication only after approval of Engineer.

4.4.6. Where the work has been passed in the manufacturers factory premises as strictly interchangeable. All members bearing the same marks can be stacked together without reference to any particular position. Care must be taken by the contractor that the parts at site are available in proper sequence. Every portion of work shall be distinctly stenciled with paint and marked with the punch not less than 15mm dia for guidance in erection in the field, and stamped with the letters specified in the drawings. In the case of non-interchangeable work, the system of marking shall be as shown in drawing. All field rivets for site riveting, service bolts and drift for assembly of girder, shall be stored under cover.

4.4.7. The contractor shall supply without charge, three complete lists of the rivets, bolts, service bolts, washers and drifts required for erecting the work at site, showing the parts of the work to which the various rivets and bolts belong and having each item marked so as to indicate the particular case in which it will be found. List of total rivets required for one girder stating length, numbers, and wastage allowance of 12.5% shall be prepared and supplied along with the span components, the requirements for service bolts = 45% and drifts = 15% covering 60% of field holes in one span plus wastage allowance of 12.5%. Actual requirement for the work shall be assessed by the contractor who shall arrange accordingly.

4.5. Steel Tape

4.5.1. Contractor shall use steel tape conforming to IS: 1269(Part 2:1997) duly tested and issued with certificate of accuracy by an accredited National testing house for templating, fabrication of drilling jig etc. The tape shall be calibrated under a tension of 1.8 kg at 16.7 degree C. All marking and checking of master gussets, camber layout, etc shall preferably be at the mean temperature of the fabrication zone.

4.6. Straightening

4.6.1. All rolled sections and plates shall be straight and free from defects like twists and bends before they are used for marking and cutting. If any rolled section of plate has minor defects, it shall with the approval of the Engineer, be cold straightened by pressure with the help of plate and section straightening machine. Pressure applied for straightening shall be such as not to damage the surface or microstructure of grains in the steel member. Flattening, straightening and bending in hot condition shall not be carried out unless specified on drawings or approved by Engineer.

4.7. Cutting of Material

4.7.1. All edges shall be machined mechanically (by a sawing machine) or controlled torch oxy-acetylene flame cut after. All flame cut edges shall be ground to secure clean and square edges.

4.7.2. No shearing of section or plates is permitted. When flame cutting is deployed on a plate of long length, flame cutting shall be done by multi-torch mechanically controlled equipment to ensure a straight clean cut and prevent lateral distortion due to heat application. All flame cut edges shall be ground or machined to obtain reasonably clean square and true edges. Drag lines formed during flame cutting shall be removed.

4.7.3. While chalk marking for flame cutting, following cutting allowance shall be added to the prescribed dimensions:

Thickness	Cutting allowance
Up to 12 mm	+3mm
Above 12 and up to 25 mm	+5mm
Above 25mm	+7mm

4.7.4. Templates made from 3 to 4 mm thick steel plate shall be used for cutting Gussets. Long length cutting by marking with white chalk and string may be followed.

4.7.5. Minimum edge distance while preparing profile for gussets, cleats and edges of components from center of rivet hole to a flame cut edge shall be 1.75 times the diameter of hole, and for machined edge or rolled edge shall be 1.5 times the diameter of rivet holes, (machined edge means first edge distance kept 1.75 times diameter of hole for flame cutting and reduced to 1.5 times diameter of hold by removal of material by machining).

5.0 METHOD OF FABRICATION

Fabrication, Workmanship shall generally comply with current IRS specification No.B1-2001 and GUIDELINES ON FABRICATION OF STEEL GIRDERS FOR CONSTRUCTION/FIELD ENGINEERS BS -110 (R) with latest correction/amendments thereof unless otherwise specified in special conditions of this contract or as specially directed by the Engineer in writing.

5.1. The fabrication of the girders and its accessories shall be carried out by the Contractor in his factory premises or in a well-established fabrication workshop to be set up by the Contractor at bridge site or any other location as approved by the Engineer as shown below.

WELL EQUIPPED WORKSHOP

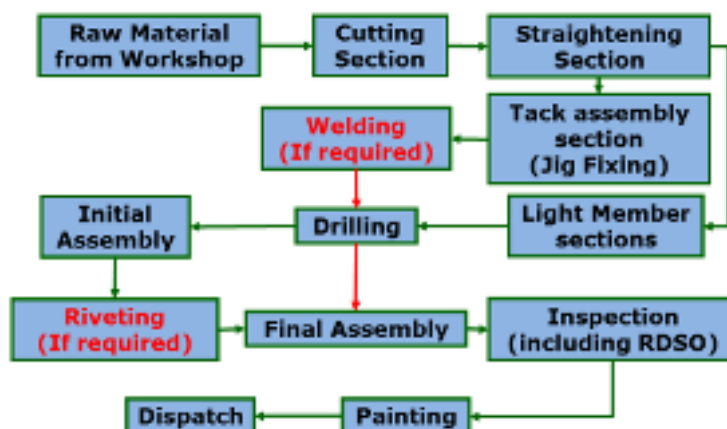
• WORKSHOP MAINLY CONSISTS OF—

1. **TEMPLATE/JIG SECTION**
2. **CUTTING SECTION**
3. **TACK ASSEMBLY FIT-UP SECTION**
4. **WELDING SECTION**
5. **DRILLING SECTION**
6. **INITIAL ASSEMBLY SECTION**
7. **RIVETING SECTION**
8. **FINAL ASSEMBLY SECTION**
9. **INSPECTION**
10. **PAINTING SECTION**
11. **DISPATCH SECTION**

5.2. The workshop staff shall have requisite experience, proven skill and experience in the technique of fabricating large components. Accuracy of fabrication shall be realized through controlled high precision jigs, fixtures and templates, which shall be inspected and passed by Engineer / any other inspection agency as nominated by Engineer.

5.3. The following is a typical “Workshop Flow Chart for Fabrication.

WORKSHOP FLOW CHART FOR FABRICATION



5.4. Considering the length and height of span, jigs and fixtures shall be used to guide and support drilling of holes and fixtures during entire fabrication work assembly of components, before riveting / welding of components.

5.5 Drilling jigs shall be fabricated with the help of Master gussets fabricated as templates for all panel joints of truss. Jigs after manufacture shall be checked and approved by Engineer or any other Inspecting agency as nominated by Engineer/ Con. Only approved and stamped jigs shall be used for fabrication. First component after drilling of holes through approved jig for each specific component of truss, shall be checked with the help of Master gusset by the Inspecting Officer before further fabrication.

5.6.Tack Assembly

5.6.1.For fabrication of riveted construction, top and bottom chords of members shall be tack assembled for drilling of holes through jig. Tack assembly of members shall be done by stitch rivets after positioning the drilling jig in true position.

5.6.2.Drilling jig and tacked members shall be clamped to a fixture to avoid shifting of jig during handling and drilling.

5.6.3. Tack welding may be permitted only at ends or locations, which will eventually be cut and removed. No active part of the component shall be tack welded as this would initiate crack formation in service.

5.7 Template

The contractor shall supply and provide templates at his own cost. No separate payment shall be made for this and accepted rates shall be deemed to

include this aspect. The templates used for the work shall be of steel of similar category as the member and shall be of tested quality. In case where actual materials from a bridge have been used as templates for drilling similar pieces the inspecting officer will decide whether these are fit to be used as part of finished structure.

5.7.1 Template Shop

Fully covered template shop consisting of uninterrupted steel or concrete floor as approved having true and correct level covering adequate area shall be provided by the contractor. Camber layouts shall be drawn to full scale from end of girder to half span. This camber layout once approved shall be used for fabrication of

master gusset profiles and end profile of each member. It shall be used for working out the actual lengths of each member and checked to conform to the calculated length. Master gussets at every panel joint of top chord, bottom chord and middle web panel shall be marked accurately on camber layout drawn of template floor.

5.7.2. All precautions shall be taken while drawing camber layout for correct setting of angle of intersection of chord and web member and great accuracy shall be ensured while transferring the same on master gusset.

While marking centre point of field rivet holes on master gusset, if there is symmetry of holes on vertical axis, marking shall be made only on half the master gusset across vertical axis, and holes drilled by inscribing each hole. Subsequently remaining half portion shall be drilled through gusset using the same half portion master gusset. This will help realize symmetry of holes in gusset and fairing of field rivet hole during girder assembly.

5.7.3. Camber layout and fabrication of Master gusset at every panel joint requires highly skilled and trained staff experienced in accurate fabrication of large girders, drilling jigs and fixtures. At least one jig shall be required for each component. Each jig shall be numbered and a record kept in register for identification.

5.8. Drilling of Holes

5.8.1. Holes for riveting / bolting in members shall be carried out by drilling through jig only. No punching or hand drilling of holes is permitted. Sub-punching to a diameter 6mm less than that of finished holes may be permitted by Inspecting Officer except in the main truss members of open web girders.

5.8.2. When the holes are to be sub-punched they shall be marked off with a centre punch and made with a nipple punch or preferably, shall be punched in a machine in which the position of the hole is automatically regulated. The punching shall be so accurate that when the work has been put together before drilling, a gauge 1.5mm less in diameter than the size of the punched holes can be passed easily through all the holes.

5.8.3. Drilling jig should be provide with an internal turned and case hardened bush at all holes in jig, for retaining accuracy of all similar units fabricated. Bushes will have a tolerance of $- 0.0/+0.1$ mm for shop riveting. The tolerance shall be periodically checked & replaced when the tolerance exceeds $- 0.00/+0.4$ mm (for hardening). Before fixing to jig, bushes shall be checked with a plug gauge to ensure these tolerances.

5.8.4. Drilling of all holes through jig by radial drilling machine for fabrication of top and bottom chords of all members will be allowed. Web members and floor system having welded construction, field holes for riveting shall be drilled through jig.

5.8.5. Holes for countersunk heads of rivets, bolts or screws shall be drilled to the correct profile so as to keep the heads flush with the surface.

5.8.6. Holes for rivets shall be 1.5 mm greater than the diameter of rivet bars for rivets less than or equal to 25 mm and 2 mm greater than the diameter of rivet bars for rivets greater than 25 mm. Holes for turned bolts, for field connection, where specified on drawing shall be drilled in the shop 1 mm less than diameter of holes shown on the drawing and should be reamed at site to suit diameter of turned bolt.

5.8.7. Drilling to enlarge un-faired holes is prohibited. The holes required to be enlarged shall be reamed provided the Engineer permits such reaming after satisfying himself about the extent of inaccuracy and the effect of reaming on the soundness of the structure. The Engineer reserves the right to reject all steel work if the holes are not properly matched.

5.8.8. On completion of drilling of holes in each component and before shifting the jig, it shall be ensured that all holes are drilled to their correct diameter to reconfirm quality of work.

5.9 Rivets & Riveting of Components

5.9.1. The work shall include supply of all rivets, bolts, nuts, washers etc. required for complete erection at site with allowance for wastage. The contractor shall be responsible for supplying site rivets of correct length. The length of such rivets shall be verified in the presence of Engineers representative by snapping a few rivets of each length to check whether the holes have been completely filled in by rivet material. Particularly in case of rivets with long grips (with grip exceeding 6 times the diameter), specimen rivets shall be cut to see if the holes are totally filled even though the rivets are tight under the usual hammer tests.

5.9.2. All rivets to be used shall be checked with profile gauge for its true shape, contours of head, concentricity of head, diameter as well as correct length to match the thickness of joint. Calibrated gauges for rivet dimensions and contours shall be provided by the contractor for use of the Inspecting Officer and the Engineer.

5.9.3. Service bolts and nuts, ordinary plates, washers and drifts for use in the erection of the work shall also be supplied by the contractor at his own cost. On completion of the work these materials may be taken back by the contractor.

5.9.4. The dimension on the drawings refer to the diameters of finished rivets and not the diameter of rivet holes. The rivets shall be made to relevant IS specification. The clearance i.e. the difference in diameter of rivet measured under head (before heating) and rivet hole shall not be less than 0.75 mm. The shanks shall be made of length sufficient to fill the holes thoroughly and to form the head.

5.9.5. Riveting shall not be started until such time as Engineer or his authorized representative has personally satisfied himself that the alignment of the girders is correct, the vertical members plumb correctly, all the mating surfaces are secure and in full contact with service bolts and field rivet holes in alignment.

5.9.6. All rivets shall be properly heated to straw heat for the full length of the shank, firmly backed and closed. The head of the rivet, particularly in long rivets, shall be heated more than the point and in no case shall the point be heated more than the head. Before placing the rivet in drilled holes the rivets shall be smartly jerked to shake off oxide scale. Where it is impossible to back up by normal method of holding up, double gunning may be resorted to. Alternatively pneumatic holding device may be used.

5.9.7. Unless permitted by Engineer, all riveting shall be done by machine riveting using hydraulic riveters for sound & perfect riveting. Fabrication workshop should have Hydraulic Riveting facilities for fabrication of heavy duty bridge girders as per IRS/IRC specifications. Pneumatic riveters may be used subject to approval of Inspecting Officer/Engineer. The working pressure to be employed when using pneumatic or hydraulic tools shall be as per manufacturers specifications and approved by the Engineer. Hand riveting shall only be done when specifically allowed by the Engineer. In such cases means shall be adopted to ensure the rivets are sued for their entire length and fill rivet holes completely, the snap being used only to give the correct form of head.

5.9.8. All rivets when driven shall completely fill the holes, have the heads concentric with the shanks and shall be in full contact with the surface. Driven rivets when struck sharply on the dolly side head with a 110 gm rivet-testing hammer shall be free from movement and vibration. While riveting built up members, great care shall be exercised to ensure that the set of holes for field rivets in each flange of the built up member is aligned, dead square in relation to that in the other flange and not aborted. Use of special jigs shall be made to ensure this fit.

5.9.9. All sparking, loose and burnt rivets, and rivets with cracks, badly formed eccentric or deficient heads shall be cut out and replaced by others. Permissible deviation of driven rivets shall be as per IRS BI-2001. Rivets shall also be cut out when required for the examination of the work. The Engineer

shall approve actual method of cutting out. Recouping and caulking shall in no circumstances be resorted to.

5.9.10. Service bolts shall be frequently retightened as the riveting proceeds, the number and position of the drifts used in the joints permitting this. All field rivets shall be tested as directed by the Engineer.

5.9.11. Care must be taken to use rivets of correct dimensions but burrs or lips around the rivet heads shall not be removed.

5.9.12. Rivets less than 10 mm diameter may be driven cold subject to approval of Engineer. Flattened rivet head may be used in certain places where clearance demands so.

5.9.13. When all the rivets at a joint have been finally passed they shall be painted as per specification.

5.10. Welding of Components

5.10.1. All welding work shall be as per IRS/IRC Standard and by such process that the workmanship is flawless. ALL welding shall be by automatic and semi-automatic submerged arc welding process, except where inaccessible. Site welding shall be avoided, but if necessary, shall be carried out only on secondary members having low stresses to transmit across the joint for which approval of the Engineer shall be required.

5.10.2. Welded construction shall be carried out generally in accordance with provisions of the Welded Bridge Code and IS:9595 (Metal Arc Welding) and further subject to specifications as under:

a) Welding shall be done only by qualified and approved welding operators, whose competency has been verified and certified by Engineer/Inspecting Officer. Routine re-testing of welding operators may be required every six months if deemed necessary by the Engineer who also reserves the right to retest any welding operator at any time during the contract.

b) All long and continuous welds shall be carried out by automatic Submerged Arc Welding (SAW) process only, in order to obtain sound and uniform shape and cross section CO2 or Manual Metal Arc Welding (MMAW) may be done for short lengths or for secondary connections where access to the location of the weld does not permit Submerged Arc Welding (SAW), subject to approval of Engineer.

Except for special types of edge preparation, such as single and double U, single and double J, the fusion edges of the plates which are to be joined by welding may be prepared by using mechanically controlled automatic flame cutting equipment and then ground to smooth finish. Special edge preparation should be made by machining or gouging.

c) The contractor shall appoint welding supervisors whose competence and qualification shall be subject to approval of TPIA (Third Party Inspecting Agency) like WRI-BHEL/Trichy or any other firms specifically approved in prior by Engineer/Con. All welds shall be carried out under their direction & supervision.

Welding position for fabrication of components shall be Flat or Horizontal position for SAW (flat position preferred) and Flat or Horizontal position for CO2 or manual metal arc welding. To ensure above position for welding, component shall be placed in a manipulator, tack assembled and rotated in the manipulator to assist welding sequence and prevent distortion of member. In absence of manipulator, special jig and fixtures shall be provided for positioning and careful handling by crane.

5.10.3 Welding Procedure

The welding procedure shall be such as to avoid distortion and minimize residual shrinkage stresses. Properly designed jigs should be used for assembly. The welding techniques and sequences, quality, size of electrodes, voltage and current required shall be as prescribed by relevant codes. The contractor should submit full details of welding procedure in proforma given at Appendix-V of IRS BI-2001 (with latest correction slip).

5.10.4. Sequence of welding and welding pass

The sequence of welding and welding pass shall be done as per IRS BI-2001.

5.10.5. Procedure Trials

5.10.5.1. Where required by the Engineer/Inspecting Officer, welding and flame cutting trials as per following shall be carried out and completed before fabrication on representative samples of materials to be used in the work.

i) The samples of material shall be selected and marked by the ENGINEER when the materials for the work are inspected at the mills.

ii) The trials of flame cutting shall be carried out in material representative of all thicknesses to be used in the work.

iii) The welding & flame cutting trials shall be commensurate to the satisfaction of Engineer/Inspecting Officer and the procedures to be adopted in the fabrication of work which shall include:

a) Welding procedure in accordance with relevant specification.

b) Heat control techniques required to ensure that the flame cut surface of steel are suitable for inclusion in welds.

iv) The trials shall include specimen weld details from the actual construction which shall be welded in a manner simulating the most un-favourable instances of fit-up and preparation. After welding the specimens shall be held as long as

possible at room temperature but in any case not less than 72 hours, and then shall be sectioned and examined for cracking. Six representative samples of each weld joint similar to joint used in fabrication of all components shall be prepared by qualified and certified welding operators.

v) Following groups of tests shall be carried out:

a) Butt welds: Transverse tensile test, transverse & longitudinal bend test with the root of weld in tension and compression respectively, charpy V-notch impact test.

b) Fillet welds: Fillet weld fracture test.

c) Track welds: Inspection for cracking.

d) All welds: Macro examination.

Additional tests may also be carried out as per requirement and instruction of Engineer/Inspecting Officer, the cost of which shall be borne by the contractor.

Following tests are normally performed on welds.

(a) **Non Destructive Tests (NDT):**

- Visual inspection/profile gauge for dimensional check of size and throat thickness of weld.
- Etching test for penetration of joint.
- Magnetic particle or Ultra Sonic Pulse Velocity (USPV)
- Gamma Radiography & x-ray (only for butt welds)
- Dye penetration of all welds joints.

(b) **Destructive Test :**

- Tensile test
- Bend test
- Impact test
- Load test.

5.10.5.2. Once samples representing the weld joint used in fabrication of all components are tested and test results are found satisfactory, then approval shall be taken from the Engineer/Inspecting Officer for the welding of built up components by approved welding operators. Welding Procedure Qualification Records (WPQRS) shall include joint details, welding consumables (i.e. electrode/wire & flux combination), weld parameters (i.e. welding current, wire feed speed), welding position, welding equipment carriage speed (for SAW process), arc Length, arc voltage etc.

5.10.6 Precautions during welding

5.10.6.1. The Contractor shall submit list of weld joints of different combined thickness for approval of welding procedure for all members.

5.10.6.2. The welding of built up component shall be carried out only by approved welding operators and in accordance with Welding Procedure Qualification Records. WPQRs shall be prepared in advance and approved by the Engineer. Proper welding sequence shall be followed to avoid distortion and minimize residual shrinkage stress, and surface defects, within acceptable tolerance limits.

5.10.6.3. To ensure sound and defect free welding of built up members, record of welding adopted as per approved qualifying procedure shall be maintained in Performa prescribed in guidelines for welded fabrication issued by TPIA (Third Party Inspecting Agency) like WRI-BHEL/Trichy or any other firms specifically approved in prior by Engineer/Con.

5.10.6.4. Any change during welding for fabrication of built up member, such as welding sequence, welding process, positioning, wire and flux combination joint details, increase or decrease in combined thickness of joint by 5 mm etc. shall be carried out only after representative samples test and procedure qualification, is accepted. In no case deviation from WPQRs without approval of Engineer shall be adopted.

5.11 Preparation of Faces

5.11.1. Preparation of joint face: Except for special types of edge preparation such as single or double 'U' & 'J' joints, the fusion edges of all plates which are to be joined by welding shall be prepared by using mechanically controlled automatic flame cutting equipment with the cutting allowance as per clause 4.7 and the extra length machined to obtain correct length.

5.11.2. It shall be ensured by Non-destructive tests that the fusion face and adjacent surface are free from cracks, notches or other irregularities that are likely to cause defects during service or interfere with deposition of the weld.

5.11.3. Fusion faces and the surrounding surface up to 50 mm shall be free from mill scale, moisture, oil, paint dirt or any other substance which may affect the quality of the weld, and same shall be removed by grinding or flame cleaning/grit blasting.

5.11.4. Details of joint, fusion faces, root face and gap shall be as per details given in fabrication drawing or as stipulated in IS:9595.

5.12. Welding Operation

5.12.1. Parts to be welded shall be assembled such that the joints to be welded are accessible and visible to the operator. Assembly jig and fixture shall be used for accuracy.

5.12.2. Manipulators should preferably be used to execute the sequence of welding without disturbance, in the most suitable position. Fixture shall maintain the alignment with minimum restraint in order to reduce the possibility of locked up stresses.

5.12.3. Run in and run out plate shall be provided for fabrication of built up members or truss to ensure that weld will start on run in plate and weld will stop on run out plate and thus avoid crater defects on the components.

5.12.4. The size and length of weld shall not be less than those specified in the drawing nor shall they be in excess of the requirement without prior approval of the Inspecting Officer. The location of weld shall not be changed without prior approval of the Engineer.

5.12.5. During design and detailing of component lengths, care is to be taken to avoid butt weld in built up members of truss. Therefore it is essential to use only nearest size and length or rolled sections that have been procured to scheduled sizes and lengths by proper planning. No butt weld shall be carried out without approval of Engineer.

5.12.6 Fabrication of components subject to dynamic loading in the structure need careful inspection during fabrication by qualified, experienced and certified Engineer from contractors side and final approval by Inspecting Officer. This inspection shall be carried out as stipulated in Indian Railway Welded Bridge Code before, during and after welding.

5.13 Additional Precautions during Welding

5.13.1. Following precautions shall further be observed during fabrication.

- All equipments shall be provided with calibrated gauges to observe limits of variation for parameters prescribed in WPQR'S for welding current, arc voltage, speed of travel of equipment etc.

- Covered shed for environmental control (particularly against dust, moisture and initiation in weld or under bed of weld (i.e. Heat Affected Zone HAZ). Also baking of flux use for submerged arc welding in oven for an hour at 200 degree C shall be carried out to ensure that no moisture is contained in flux during welding.

- All tack weld shall be carried out by qualified and approved welder only. As tack weld will become part of the final weld, it shall be free from all cracks and other welding defects.

- If multiple runs are used for fabrication of built up member, inter run cleaning shall be carried out and subsequent weld bed made only after approval of inspecting officer or his authorized representative. This is to check free

defects in the weld. Also visible defects such as cracks, cavities, if any, shall be removed by grinding. It shall be ensure during welding that craters are avoided.

- Stray arcing of components, which cause local hard spots or cracking of parent metal, shall be avoided.
- Flux of approved quality will be permitted for use.
- The Auto melt grade wire spools of wires for Submerged Arc Welding and Carbon Dioxide (CO₂) consumables of only the approved quality will be permitted.
- Pre Heat Treatment will be given to the consumables to remove the moisture if any.
- No violation of welding procedure will be permitted on any account.

6.0 General : Riveting , Welding & Jointing with HSFG Bolts

6.1. Qualified trained, and experienced supervision is essential at all times during fabrication, and for maintenance of records.

6.2. After riveting of riveted components or welding of welded components, they shall be finished finally by grinding or matching with the help of a profile template. All the butting ends of components shall be faced in milling machine after members haven completely fabricated. In the case of compression members, the face shall be machined so that the faces are of proper angle as shown in drawing and the joint when made will be in close contact throughout within a gap tolerance of less than 0.15 mm. The Inspecting officer may permit a tolerance of (-) 0.4 mm at isolated points in butting line.

6.3. **Jointing with HSFG Bolts** shall be as per Para 28.9 to 30.1 of IRS:B1-2001.

7.0 PAINTING

Specification for metallising and painting of bridge girders shall be as per IRS:B1-2001.

7.1 Surface Preparation

7.1.1. This is the most important factor in ensuring good performance of the steel girder. The surface should be clean, dry and free from contaminants and it should be rough enough to ensure adhesion of the paint film. However it should not be so rough that the film cannot cover the surface peaks.

7.1.2. The cleaning of the surface shall be done initially with the use of emery paper, wire brushes, scrapers etc. for spot cleaning to remove rust, scale etc. Subsequently, sand blasting of the surface shall be done to remove rust, mill

scale along with some of the base metal. This will be achieved by high velocity impact of abrasive material against the surface in accordance with the provisions of IS:6586, which will also create a base for good adhesion. The abrasive material once used for cleaning heavily contaminated surface should not be reused even though re-screened. Washed salt free angular silica sand of mesh size 12 to 30 with a minimum of 40% retained on a 20 mesh screen shall be used for blasting. The material specifications and other requirements shall be as provided in Indian Railways Bridge Manual, 1998.

7.1.3. All site rivets, bolts, nuts and washers shall be thoroughly cleaned and dipped in boiled linseed oil. All machined surfaces are to be well coated with a mixture of white lead conforming to IS:34 and Mutton tallow conforming to IS:887 as per specifications before despatch to site. Nothing extra shall be payable to contractor on this account.

7.1.4. All the components in the floor and deck system in open web girders and all members in plate & composite girders shall be metalized as IRS specifications.

7.2 Metal Spraying

7.2.1. The sprayed coating shall be applied as soon as possible after surface preparation.

7.2.2. The wire method shall be used for the purpose of metallising, the diameter of the wire being 3mm or 5mm. Specified thickness of coating shall be applied in multiple layers and in no case less than 2 passes or the metal spraying unit shall be made over every part of the surface. The surface after spraying shall be free from uncoated parts of lumps of loosely spattered metal.

7.2.3. The composition of the aluminium to be sprayed shall be in accordance with BS 1475 Material 1-B(99.5%) aluminium otherwise as per IS:739 and IS:2590. However the selection of metal for spraying, i.e. Zinc or Aluminium shall be subject to final approval by the Engineer.

7.2.4. At least one layer of the coating must be applied within four hours of blasting and the surface must be completely coated to the specified thickness within 8 hours of blasting.

7.2.5. Minimum thickness of metal coating applied shall be 165 microns and average thickness shall be 200 micron. The specified thickness of coating shall be applied in multiple layers, not less than three. The metal coating shall be checked for thickness by approved magnetic thickness measuring gauge. At least one reading for each sqm of area painted shall be taken. The calibration of the gauge shall be checked against a standard of similar thickness within an accuracy of 10%.

7.2.6. For measurement of dry film thickness, following instruments may be used by the contractor:

- (i) Electronic coating thickness gauge,
- (ii) Elcometer (magnetic thickness gauge) Dial type.
- (iii) Surface profile gauge.

7.2.7. After metallising any oil, grease etc. shall be removed by thorough wash with a suitable thinner as approved by the Engineer and shall be allowed to dry for 15 minutes. The first coat shall be applied by brush/airless spray-one coat of epoxy micaceous Iron Oxide to RDSO specification No. M & C/ PCN-103/86 to 100 microns minimum DFT and allowing it to hard dry.

7.2.8. The finishing coat shall be applied with two coats of poly urethane aluminium finishing to RDSO specification No. M& C/PCN-110/88 to 40 microns minimum DFT giving sufficient time gap between two coats to enable the first coat to hard dry. The finishing coats to be applied in shop and touched after erection if necessary.

7.2.9. The Engineer however reserves the right to select the scheme of painting of the girders and channel sleepers.

7.2.10. The Engineer also reserves the right to select the colour scheme for the third and fourth coats.

7.3 Miscellaneous

7.3.1. Final dry film thickness in case of metallising shall be average 150 microns and shall be measured before application of final finishing two coats.

7.3.2. Surface preparation shall not be done unless approved paints of sufficient quantity (both primer and finishing) are available in stock.

7.3.3. Special care should be taken in preparing corners, junctions of members, head and nuts of bolts, rivets, holes, areas less accessible, hidden pockets etc. Surface preparation at such locations shall not be inferior to that attained over the rest of the area.

7.3.4. Surface preparation shall not be carried out in the following conditions:

- In rainy season from June to September and from December to January.
- In extremely windy/misty/dust blowing conditions.
- At night.
- In winter before 8 A.M.
- In summer between 11 and 15 hrs, in areas, which are likely to be exposed to direct sunlight.

7.4 Inspection

7.4.1 **Adhesion:** The sprayed metal coating shall be subjected to an adhesion test using the method described in IRS BI-2001. If any part of the coating

between the lines breaks away from the base metal, it shall be deemed to have failed the test.

Articles that have been rejected, shall have the defective sections blasted to clean off all sprayed material prior to re-spraying. Where the rejection has been solely due to too thin a coating, sprayed metal of the same quality may be added provided that the surface has been kept dry and is free from visible contamination.

7.5 Paints : Source & Quality

7.5.1. Paint and other accessories including those for metallising work will be supplied by the contractor. Paints manufactured by the following firms (or more) may be used subject to their being in the approved list of RDSO and final approval by the Engineer.

M/s. Jenson Nicholson. Paints
M/s. British / Barger paints.
M/s. Shalimar Paints
M/s. I.C.I. .paints
M/s. Nerolac. Paints

7.5.2. The contractor shall furnish to the Engineer, the date of manufacture of paint as certified by the manufacturers with the necessary container marking and test certificate for paint conforming to relevant IS code. In addition to this, he shall also submit the necessary vouchers in respect of paint purchased by him.

7.5.3. The Engineer reserves the right to get the paint tested at contractor's expenses as considered necessary by the Engineer. If the test results do not conform to relevant IS specifications fully, then the lot of paint shall be rejected and got removed from the contractor(s) storage. If the paint has already been applied it shall be removed.

7.5.4. In addition to above, the following tests are required to be carried out in the field.

- Weight per litre
- Consistency test
- Scratch test.
- Flexibility and adhesive test.

7.5.5. The Engineer reserves the right to reject the lot of paint even on the basis of field results.

7.6 Painting - General Instructions

7.6.1. Painting shall not be commenced till the surface preparation has been approved by the Engineer or his representative or inspecting officer.

7.6.2. Sealed containers of paint of approved brand shall be used. The paint drums must be rolled, turned upside down and shaken before opening. The paint must be stirred well before use. Over stirring which results in invisible air bubbles etc, shall be avoided.

7.6.3. Where brush painting is accepted, the paint must be applied by means of flat brushes not more than 75 mm in width having soft flexible bristles conforming to IS:384.

7.6.4. Round and oval brushes of approved quality conforming IS: 487 may also be used as per the instructions of the Engineer or his representative or inspecting officer.

7.6.5. All new brushes should be soaked in raw linseed oil conforming to IS:77 for at least 24 hours before use.

7.6.6. A little blue paint shall be added, in the first coat of aluminium paint to distinguish it from second coat. For paints of other colours for final and finishing two coats, suitable pigment shall be used as per instruction of the Engineer, to distinguish the first coat from the second coat.

7.6.7. The date of painting shall be marked with paint on the member.

7.7 Cares during Painting

7.7.1. Paint should be mixed in small quantities sufficient to be consumed within one hour in the case of red lead paint.

7.7.2. The applied coat of paint shall be uniform, and free from brush marks, sack marks, blemishes, scratching, non-uniform thickness, holes, log marks, fuel staining, cracking, scaling, and other defects.

7.7.3. Paint shall be applied only on dry and clean surface free from moisture or dust (including scrapping dust).

7.7.4. Paint should be used within the prescribed shelf life from the date of manufacture.

7.8 Each coat of paint shall be left dry till it sufficiently hardens before the subsequent coat is applied. Each coat of paint shall be inspected by the Engineer or inspecting officer and certified as satisfactory before applying subsequent coat.

7.9 Payment

The payment for complete painting of all components of girders including all accessories, painting of contact surface etc including all labour and material, is

included in the accepted rates for item (B.O.Q.) in the schedule of items, rates and quantities and nothing extra shall be paid.

8.0 ASSEMBLY & ERECTION

8.1 General

8.1.1 The contractor shall provide at his own cost all tools, machinery, equipment and erection material, including all temporary works and shall assemble all components in every respect as stipulated in the contract and in accordance with approved drawings and specifications.

8.1.2. Before starting the work the contractor shall seek the Engineer's approval as to the method he proposes to follow and the type and suitability of equipment he proposes to use for assembly of girder components and launching of girder. The approval of the Engineer shall however not in any way relieve the contractor of the responsibility for the adequacy and safety of methods and/or equipment he proposes to use for carrying out work in full accordance with drawings and specifications.

8.1.3. All temporary works shall be properly designed and fabricated & erected with great care for the loads, which they will be called upon to support. Adequate allowance and provision for the effect of lateral forces and wind loads shall be made to meet unforeseen conditions.

8.1.4. When chains are used for lashing care must be taken to protect the edges of members from twisting and distortion, damage to paint and similar effects.

8.1.5. Temporary bracing shall be provided to take care of stresses caused by erection equipment or other incidental loads during erection.

8.1.6. The method use for lifting and slinging flexible members shall be brought to the notice of the Engineer and shall be subject to his approval.

8.1.7. The contractor shall observe sufficient accuracy in the assembly of every part of the work to ensure that all parts fit accurately together.

8.1.8. For erection of Open web Girder span, Appendix III of IRS B1- 2001 shall be followed. The launching of girders will be done very near to the existing bridge. Contractor shall take all necessary precautions for the safety of the substructure and superstructure of existing bridge, during assembling & launching works of the girders and nothing extra will be paid, owing to this. In addition, the contractor shall adopt all precautionary measures for safe plying of inland vessels, boats, crafts etc. and nothing extra will be paid, owing to this.

8.2 Procedure for Assembly in Workshop & Site

8.2.1. The contractor is required to undertake test assembly of the girders in his fabrication workshop to prove accuracy of templates and jigs. This assembly can

be done in horizontal position. In case the fabrication workshop is set up by the contractor at bridge site itself the test assembly may be done at assembly platform and after testing of accuracy of jigs, fixtures & templates and the same assembly can be launched after riveting. The test assembly shall be certified by Inspecting agency of the Engineer.

8.2.2. Following procedure may be used by contractor subject to checking of design by contractors consultant and final approval by the Engineer.

(i) The joints at the end of each top & bottom chord shall be drifted, bolted and preferably stitch riveted to their Geometrical outline.

(ii) The procedure during assembly shall consist of placing camber jacks in position to support the structure. The camber jacks shall be set such that they provide sufficient height to allow for lowering of panel points to obtain and maintain the required camber. Throughout the process of assembly, tilt, shift, twisting etc. shall be repeatedly checked. The jacks shall be spaced so that they will support the ends of the main girders and the panel points.

(iii) The bottom chord members shall then be placed on the camber jacks, carefully leveled and checked for straightness and the joints completed by riveting.

(iv) The vertical and diagonal web members, except the end verticals shall then be erected with gusset connection outward from centre in their proper position on the bottom chords. Temporary gussets with correct whole position as on master gusset shall be fixed to connect the top end of diagonals. Strainers shall be used to realize matching of holes in the gussets at top & bottom of the diagonals & verticals, to ensure that the angles between the members at the bottom joints are as given by the nominal outline of the girders. The verticals and diagonals shall then be riveted to the lower chord.

(v) All panel points, except the central one shall now be lowered by an amount sufficient to produce the correct camber on the main girders as shown on the camber diagram.

(vi) The top chord shall thereafter be erected piece by piece, working symmetrically outwards from the centre without loss of camber profile.

(vii) Temporary top gussets, if use, shall be replaced by permanent gussets outwards from the centre.

(viii) The ends posts shall be erected last. The upper end connection should preferably be made first and if there is not splicing in the end vertical, the final closure be made at the bottom connection. If there is splicing, it shall be made at the splicing.

(ix) Frequent checks shall be made of the camber of girders during erection and care taken that the correct camber is obtained when the camber is obtained when the girder is completely assembled.

8.3 Care during Assembly

8.3.1 Drilling & Drifting of Holes

8.3.2. Drilling of joints shall be avoided as far as possible and when necessary should be done with great care and under expert supervision. Hammers not exceeding 1kg (2 lb) in weight may be used with turned barrel drifts and a number of holes drifted simultaneously, the effect of drifting shall be checked by observation of adjacent unfilled hole.

8.3.3. Any apparent error in shop work which prevents the assembling and fitting of the mating parts by the proper use of drifts, shall be investigated immediately.

8.3.4. As all work is rigidly inspected at the fabrication shop before dispatch, these difficulties should not arise and the cause could possibly be due to the use of incorrect components. It is usually important that parts be correctly handed. Should errors still persist, the matter shall be immediately reported to the Engineer who will decide what action is to be taken.

8.3.5. **Reaming:** No reaming shall be undertaken without the written authority of Engineer or his authorized representative or Inspecting Officer except for under drilled holes meant for turned bolts. If approved by Engineer, the contractor shall supply at his own expense, special rivets as may be required. Records of all actions relative to the recourse to reaming and the use of oversize rivets shall be reported to the Engineer.

8.4. Service Bolts & Drifts

Joint shall normally be made by filling not less than 50 to 60 percent of the holes with service bolts and barrel drifts in the ratio of four to one. The service bolts are to be fully tightened up as soon as the joint is assembled to secure full contact of the mating parts.

9.0 Inspection, Testing & Marking

9.1. All components shall be offered for inspection prior to painting. All approved components shall be stamped defect free, painted as per specifications prior to dispatch to bridge site.

9.2. On final finishing of each component, it shall be marked distinctly with paint with shipping mark for guidance, during assembly of component.

9.3. Stud shear connectors shall **conform to the standards specified in Clause 30 of this 'Additional Special Condition and Specification'** and the studs

whose weld have failed the tests specified shall be replaced. All other aspects not stated above shall comply with IRS-BI-2001 and Welded Bridge Code.

9.4. Inspection of new Steel Bridge Girders

(a) Inspection of new Steel Bridge Girders including Composite Plate Girders for ROBs :

KRIDE shall carry out inspection (including M&C) on its own by open line line/bridge organization or RDSO or may engage specialized third party like RITES, WRI or any other expert public sector undertaking e.g. CEIL etc. for fabrication inspection of girders to ensure the quality of fabrication.

(b) Inspection of Steel Bow String Girders for ROBs : shall only be done by RDSO (both at workshop and site).

(c) Inspection of Non-standard Girders for ROBs: shall be done by RDSO only.

(d) The KRIDE shall be responsible for nominating/selecting third party to ensure quality.

(e) The various stages and corresponding Inspection/Approval agency for Rail & Rail-cum-Road Bridge are as shown in Annexure-VII of BS 110 (R) are indicated below:

	Prefabrication stage	Inspection/ Approval
	(1) Approval of Quality Assurance Plan (QAP) QAP is to be scrutinized and approved by the inspection agency.	KRIDE/Railway/ RDSO / Third party engaged by Railway for inspection.
	(2) Scrutiny of Welding Procedure Specifications Sheets (WPSS)	
	(3) Welders Qualification Test i.e. Welding Procedure Qualification Records (WPQR)	
	(4) Inspection and clearance of raw material	
	(5) Inspection of layout on template floor (Nominal Camber)	
	(6) Inspection of jigs and fixtures with master plates	

	During Fabrication :	
	(1) Use of approved raw material	
	(2) Use of approved welding consumables	
	(3) Use of approved welders	
	(4) Use of approved welding procedures and parameters (WPDS) Welding Procedure Data Sheet to be maintained for all welds.	
	(5) Fabrication with approved set of jigs	
	After Fabrication :	
	(1) Inspection of welds	
	(2) Structural and dimensional inspection	
	(3) Trial assembly (First Girder)- Camber Values, Dimensions, Fairness of Holes by Go-No-Go Gauge, Butting of Flange in Top Chord.	
	(5) Inspection of Dismantled Components of 1st Trial Assembly – Check for elongation of Holes/Abnormal stress marks/cuts etc. & Removal of shortcomings noted during Trial Assembly.	
	(7) Inspect of only components for further spans- welding inspection & Dimensional checks.	
	(9) Metalizing/ Painting	

Note: During fabrication, internal inspection to be done by KRIDE to ensure that only RDSO approved welders carry out welding as per approved WPSS, work is as per dimensional tolerances and other quality aspects and should satisfy itself before sending Inspection call to inspection agency for Trial Assembly or components Inspection.

10.0 Transports from Workshop & Stacking at Site

10.1. loading of various Components and parts of Girders shall be done at the fabrication workshop by the contractor. The contractor/s are required to take following precautions as well due care in the entire process of transportation including loading, carriage and unloading at work site etc.

10.1.1. It should be ensured that while loading of various girder components / parts, the heavier material are loaded first followed by lighter material on the top so as to avoid any damage to lighter sections by heavy load or weight. All safety precaution is necessarily to be adhere-to as per extent instructions.

10.1.2. The contractor should provide all dunnage, rope and lashing in order to secure proper holding of material, for which no extra amount will be paid.

10.1.3. Proper wooden blocks, rubber pads shall be provided by the contractor/s so as to avoid direct contact of materials with trailer part which can cause damage to girder component.

10.1.4. All threaded ends and machine surfaces are to be efficiently protected against damage in transit.

10.1.5. Bolts, rivet, washer of different stages shall be separately packed in bag with label indicating its contents.

10.1.6. The payment will be made as per the relevant item of the works as per mode of payment specified in tender schedule after unloading and stacking the Girder components / parts at the site.

10.1.7. Utmost care should be taken during the transportation, loading / unloading etc. of the material viz. Girder components / parts. In case of any minor paint damage, proper patch painting should be done, according to relevant standard code, and for which no extra amount will be paid for any such rectification works.

10.1.8. The payment will be made as per the relevant item of the work in T/schedule after unloading and stacking at the site i.e. as per method of payment already prescribed in tender schedule.

10.2. INSURANCE:

10.2.1. Insurance:- Before commencing of works, it shall be obligatory for the contractor to obtain, at his own cost, insurance cover in the joint name of the contractor and employer from reputed companies under the following requirements:

10.2.2. Insurance against Injury to Persons and Damage to Property:

The Contractor, as insuring Party, shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 1.5.12 (b) [Insurance for Works and Contractor's Equipment]) or to any person / animal (except persons

insured under Sub-Clause 1.5.12 (c) [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

10.2.3. This insurance shall be for a limit per occurrence of not less than the Rs. 50 Lakh (Rs Fifty Lakh), with no limit on the number of occurrences. The insurances specified in this Sub-Clause: a. shall be effected and maintained by the Contractor as insuring Party, b. shall be in the joint names of the Contractor and Employer, c. shall be extended to cover liability for all loss and damage to the Employer's property (except things insured under Sub-Clause 1.5.12 (b)) arising out of the Contractor's performance of the Contract

10.2.4. The insurance policy shall include a cross liability clause such that the insurance shall apply to the Employer, the Contractor and Subcontractors (wherever applicable) as separately insured.

10.2.5. The Employer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or any Sub-Contractor (whether applicable), other than death or injury resulting from any act or default of the Employer, his agents or employees. The Contractor shall indemnify and keep indemnified the Employer against all such damages and compensation, other than those for which the Employer is liable as aforesaid, and against all claims, proceedings, damages, costs, charges and against all claims, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto.

10.2.7. **Insurance for Works and Contractor's Equipment:** The Contractor, as insuring Party, shall insure the Works, Plant, Materials and Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the Date of Commencement, until the date of issue of the Taking-Over Certificate for the Works.

10.2.8. The Contractor shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations. The Contractor shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site plus 15% of replacement cost. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

10.2.9. The insurances specified in this Sub-Clause:

- (a) shall be effected and maintained by the Contractor as insuring Party,
- (b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated between the Parties for the sole purpose of rectifying the loss or damage,

(c) shall cover all loss and damage from any cause not listed as Employer's Risks,

(d) shall also cover loss or damage to a part of the Works which is attributable to the use or occupation by the Employer of another part of the Works, and loss or damage from the Employer's Risks, excluding (in each case) risks which are not insurable at commercially reasonable terms.

(e) may however exclude loss of, damage to, and reinstatement of:

(i) a part of the Works which is in a defective condition due to a defect in its design, Materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in subparagraph (ii) below),

(ii) a part of the Works which is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, Materials or workmanship

(iii) a part of the Works which has been taken over by the Employer, except to the extent that the Contractor is liable for the loss or damage.

10.2.10. Insurance for Contractor's Personnel: The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.

10.2.11. The Employer and the Engineer shall also be indemnified under the policy of insurance, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer's Personnel.

10.2.12. The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

10.2.13. Automobile Liability Insurance

The contractor shall effect and maintain an insurance covering use of all vehicle used by the contractor or its sub-contractors (whether or not owned by them) in connection with the design, construction, testing and commissioning of the facilities under the contract in accordance with statutory requirements.

10.2.14. Professional Indemnity Insurance

(a) The Contractor shall provide evidence of professional indemnity insurance carried by its Designer for the Works. The professional indemnity insurance shall cover the risk of professional negligence in the design of the Works. This insurance shall be for a limit of not less than Rs. 50 Lakh and shall be maintained in full force and effect from the Commencement Date of the Works until 03 years after the date of completion of the Defect Notification period.

(b) The Engineer will not issue any payment certificate until the Contractor has provided evidence of this insurance and its period of effectiveness. The contractor shall provide evidence to the Employer / Engineer before commencement of work at site that the insurances required under the contract have been effected and shall within 60 days of the commencement date, provide the insurance policies to the Employer/Engineer, the contractor shall, whenever, called upon, produce to the engineer or his representative the evidence of payment of premiums paid by him to ensure that the policies indeed continue to be in force.

(c) The Contractor shall also obtain any additional insurance cover as per the requirements of the Contract or Law of the Country.

The Employer/Engineer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or his subcontractor or petty contractor / other contractor working there. The Contractor shall indemnify and keep indemnified the employer / Engineer against all such damages and compensation for which the contractor is liable.

(d) The Policies of the contractor shall remain in force throughout the period of execution of the works and till the expiry of the defect liability period except for any specific insurance covers necessary for shorter period.

(e) If the Contractor fails to effect or keep in force or provide adequate cover as acceptable to the engineer in the insurance policies mentioned above, then in such cases, the engineer may effect and keep in force any such insurance or further insurance on behalf of the Contractor. The recovery shall be made at the rate of 1.5 times the premium/premiums paid by the engineer in this regard from the payment due to the Contractor or from the contractor's Performance security. However, the Contractor shall not be absolved from his responsibility and /or liability in this regard.

10.2.15.Accident:-(a) The contractor shall, in respect of all staff engaged by him or by his sub-contractor, indemnify and keep the employer at all times indemnified and protected against all claims made and liabilities incurred under Workman's Compensation Act, the Factories Act and the Payment of Wages Act, and rules made there under from time to time or under any other labour and Industrial Legislation made from time to time.

(b) The contractor shall indemnify and keep the employer indemnified and harmless against all actions, suits, claim demands, costs, charges or expenses arising in connection with any death or injury sustained by any person or persons sustained due to the acts or omission of the contractor, his sub-contractors, his agents or his staff during the executions of this contract irrespective of whether such liability arises under the Workman's Compensation Act, or Fatal Accident Act or any other statute in force for the time being.

(c) The contractor's liability to meet third party claims of the type outlined above will be applicable only in cases where accidents have been caused by

workmanship, material, execution or negligence on the part of the contractor and further the liability of the contractor will be limited to Rs.50 lakh for any one accident without any limit on the number of accidents.

(d) The contractor shall be responsible for all repairs and rectification of damages to completed works or works under execution due to DFCCIL accidents, thefts, pilferage or any other cause, without delay to minimize or to avoid traffic detentions, in a section until the installation are provisionally handed over to the employer.

11. Assembly and Launching :

(i) After completion of fabrication, the girder components will be transported to the site and assembled on the specifically made assembly platform. Care must be taken by the contractor while transporting the materials to see that the parts at site are available in proper sequence.

(ii) All girders will be launched using suitable capacity cranes.

(iii) All temporary work shall be properly designed and substantially constructed for the loads which it will be called upon to support. Adequate allowance and provision of lateral forces and wind loads shall be made according to local conditions.

(iv) Temporary bracing shall be provided to take care of stress from erection equipment or other loads carried during erection.

(v) The blocks shall be arranged by KRIDE. The contractor shall have to launch the girders within the block period.

11.1.1.COMMENCEMENT OF THE ERECTION WORK AT SITE: The contractor shall commence the erection work when and as soon as, but not until, he receives instructions from Engineer in-charge to do so. On such order being given, possession of site/authority shall be given to the contractor of such portion or portions of the site as the Engineer /Con may determine.

(a) The assembling of components at site to required camber and grade along bridge axis, preceding additional temporary structures and accessories for launching of girders and all related matters shall be full responsibility of the contractor.

(b) No pre-camber to be provided at the time of fabrication.

(c) All members of the girder and joints are to be either riveted or welded or bolted with HSFG bolts as shown in the approved structural drawings. No welding except where approved by the Engineer is to be carried out at site. All welding and riveting are to be carried out as per relevant IRS Specifications.

11.1.2. The launching of girders shall be done as per approved drawings. For this purpose, the contractor shall submit in triplicate, detailed launching schemes of all the girders including design calculations, safety procedures and method statement with such plans, sketches and other details as may be necessary to determine the suitability and adequacy of the schemes proposed. The methods adopted shall not, under any circumstances, cause the stresses in various members of girder spans to exceed permissible and safe limits at any

stage of launching. One copy duly approved by the Engineer shall be returned to the contractor.

11.1.3. For the Engineer's use and record, the contractor shall supply free of charge, four sets of prints on strong paper and one set of neatly executed tracings on linen of approved detailed drawings for assembly and launching schemes for use at site.

11.1.4. The launching system & procedure shown on enclosed drawings are purely indicative of the method proposed for launching for which the permanent members of the girders are designed. The contractor shall provide full structural details of the temporary members and their connections to the girder, along with necessary design calculations not only justifying members sizes but also for the entire launching system adopted. Contractor shall provide full structural details of the temporary member and their connections to the girder, along with necessary design calculations not only justifying members sizes but also of the entire launching system adopted. Contractor will be responsible for getting approval of launching scheme submitted by him from the Engineer.

11.1.5. In order to ensure perfect fit of the temporary components, holes may be carefully drilled for the connecting members in between the girders in situ and T & F High tension grip bolts used.

11.1.6. The launching system shall be test tried if directed by the Engineer and no separate payment for this shall be made.

11.1.7. Nothing extra will be paid to the contractor for adopting any scheme for launching and the costs are to be covered in the relevant item in the schedule of items, quantities and rates. All temporary members shall be removed after launching and may be taken back by the contractor. Erection gussets provided for connecting the members may be cut and edges ground as required by the Engineer.

11.2 Temporary Strengthening

11.2.1. The launching arrangement may include fabrication of launching nose or restraining girders, sway restraining devices such as sway ropes, restraining cables etc. the supply and fixing of members for temporary strengthening of girder members to take care of erection stresses and strains and other relevant components for satisfactory and successful completion of the defined scope of work. Erection stresses must be kept within safe and permissible limits at every stage of erection.

11.2.2. The contractor has to make arrangements at his own cost for the steel for temporary arrangements including sway restraining devices for launching and temporary strengthening of girder, as may be required for the launching operations. The rate quoted should take into account these factors as nothing extra shall be paid.

11.2.3. Crane working:

a) The Contractor shall follow and comply with all prevailing Safety Rules of crane working, relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any conflict between statutory requirement and Safety Rules prescribed by the crane manufacturer, the former shall be binding on the Contractor unless the statutory provisions are more stringent.

b) Any loss or damage to property due to negligence of the crew employed by the contractor is attributable to the Contractor. KRIDE shall not be responsible for any accident/injury to the Contractor's Crew/staff during operation or otherwise. Contractor has to assume full responsibility of the safety of their crew/staff and to comply with the prescribed security/safety regulations at site.

c) The contractor shall inspect the Site for space for crane working, it is the responsibility of the contractor to ensure that no existing structure is damaged. In case any structure like boundary wall, footpath etc. is damaged, it should be repaired by the contractor at his own cost to the satisfaction of the owner/KRIDE.

Some issues that need to be addressed during the inspection/preplanning stage are:

1. The type of crane that can safely perform the lift;
 2. Access to the areas, staging areas, and the amount of space that is required to maneuver the equipment and materials;
 3. The proximity of overhead power lines near the work;
 4. A firm and adequate foundation for the crane;
 5. Proper use and extension of the outriggers;
 6. Guarding of the machine and all pinch points, especially the swing radius;
- and
7. Congestion in the work areas.

d) The Contractor has to make their own arrangement for Accommodation, Transport and other amenities like Medical etc. for their crew/staff at Site at their own cost.

e) All the statutory requirements as called for by the Labour Laws and other statutory authorities are to be met by contractor and proof of compliance should be made available to KRIDE.

f) Electrical Power/Illumination for Crane Operation/Maintenance works at Site shall be provided by the contractor at his own cost basis. However, the Crane should also have its own lights for movement/working in the working area at Site.

g) The crane shall be operated by the certified trained operator only under the supervision of the qualified supervisor. The Contractor/crane supervisor shall ensure the cranes are set up and used properly on the construction site. He shall

ensure right crane for the job, firm foundation, adequate clearances to handle the materials, guarding of moving parts, proper set up of the outriggers and basic crane operations such as two block, level, load charts, and load moment. The operator/supervisor must calculate loads to ensure they do not exceed the limitations of the equipment and satisfy MRVC engineer before deploying and actually operating the crane.

11.3 Inspection and Rectification

11.3.1 During erection of girders, the contractor shall provide all facilities and permit the Engineer to inspect the field assembly, site riveting and erection of spans.

11.3.2. After inspection by the Engineer / Inspecting agency, the contractor shall identify cause of any defect, imperfection and/or fault noticed during such inspection and initiate corrective action as per the direction of the Engineer. All defects, imperfections or faults for which the contractor is liable under the contract, shall be made good by the contractor to Engineer's satisfaction and the cost of identifying and rectifying such defects, imperfection or faults shall be borne by the contractor.

11.3.3. A neat casting bearing the name of the contractor, the place and date of manufacture, the contact number and the standard of loading to be specified by the Engineer shall be bolted conspicuously on all girders. The drawing of the name plate shall be approved by the Engineer.

12.0 METHOD OF MEASUREMENT FOR PAYMENT

12.1 Measurement

12.1.1. For the purpose of payment, quoted rates apply to the weights of steel work calculated from final working drawings based on theoretical weights given in the producers hand books and using minimum square overall dimensions, no deductions being made for skew cuts, holes or notches. Each gusset shall be measured as equivalent to the dimension of the smallest enclosing rectangle. The wastage of steel in the form of skew cuts etc. shall be the property of the contractor.

12.1.2. The drawing office dispatch lists (D.O.D.Ls) when prepared according to procedure shall be submitted by the contractor to the Engineer for approval.

12.1.3. The payment for steel work as per item in the schedule of items, rates and quantities, shall be released in stages of accepted item rates for quantities executed, as mentioned in the tender schedule. The payment after receipt of material in fabrication shop shall be made on the basis of measurements contained in the suppliers vouchers, if required, these measurements shall be further verified by the representative of Engineer in charge by measuring dimensions/sizes of the sections and multiplying the same by standard weight.

Sampling for actual weight of the sections shall also be done by him as per procedure and frequency prescribed by Engineer in charge.

13.0 CONTRACTOR'(S) LIABILITY

13.1. Any fitting, accessory or apparatus which may not have been mentioned in this specification or the drawings, but which are usual or necessary in the execution of such work, are to be provided by the Contractor without extra payment. The whole work must be completed in all details, whether mentioned in this specification or not, with the exception of such work as has been specified in the schedule of items to be separately provided for in the Contract.

13.2. Notwithstanding the specifications and conditions stated in the contract, the contractor shall keep the Engineer/ Employer authority fully indemnified and free from all liabilities and risks consequential to any lapse on his part in respect of material quality, standard of workmanship, accuracy of fabrication and the like. He shall provide all labour and material required for execution of the work as per listed standards and in absence of any IRS & IS specifications.

14.0 Technical Organisation/tools, equipment and plants.

(A) Contractor should have qualified and trained manpower suitable to do the work in terms of technical specifications and contract conditions.

(B) Contractor should have suitable and adequate plants, machinery and equipments required to execute the work like:

- I. Cutting machine
- II. Radial drilling machine.
- III. Edge milling machine, end milling machines.
- IV. Plate/structural steel straightening machine.
- V. Pneumatic grinding machine, drilling machines, chipping machines and wrenches etc..
- VI. Sand blasting equipment and metalizing equipments.
- VII. Welding machines.
 - a. SAW
 - b. MIG/MAG
- VIII. Welding transformers
- IX. Cranes of adequate capacity.
- X. Suitable digs and fixtures.
- XI. To test the raw material and girders to conform to relevant specification, testing facilities, for the following should be available either in house or through outsourcing.
 - a. Elcometer for measurement of thickness of paints.
 - b. Steel measuring taps duly calibrated.
 - c. Ultrasonic flow detection testing facilities for checking internal flaws.
- XII. Suitable Welding manipulator.
- XIII. Macro etching/DP or MP testing facilities.
- XIV. Tongue tester for measuring current and voltage.

XV. Gauges for checking weld size throat thickness and edge preparation etc..

XVI. All equipment must meet the requirements of corresponding IS, IRS or other international specifications.

(C) Manpower: Adequate No. of trained qualified welders shall be available with the tenderer. The welder must be trained in accordance with the provision of IS: 817. They must be trained either from recognized welding institutes or by in house training, where proper training facilities exist. The welder must be tested as per requirements of IS: 7310 and proper records maintained.

List of equipments mentioned above is only indicated and not exhaustive. The firm shall be required to deploy all other machineries, tools & plants etc. required for successful completion of the work of fabrication, assembly and launching of the girders.

15.0 KRIDE desires that successful tenderer should establish (at his own cost) the fabrication workshop near the site only for close monitoring of all the quality aspects of this contract work. Contractors request for establishing workshop/using workshop proposed/located away from the bridge site shall require prior approval.

16.0 Contractor shall establish fully equipped laboratory for all the tests required on materials/processes/products as per provisions of the contract, Specifications and the direction/approval of the Engineer. Costs of these are deemed to be included in the quoted rates. Prior approval of the engineer shall be obtained for non installation of such testing equipment which cannot be installed in normal course due to any reason. However, Engineer's decision (for installation non-installation) in this regard shall be final binding and conclusive.

17.0 SITE FACILITIES BY THE CONTRACTOR:

17.1. Contractor shall provide following office/site facilities at the bridge site/other locations for ensuring smooth and efficient communication and work execution. Cost of these facilities deemed to be included in the quoted rates and nothing extra shall be paid for this item.

(i) Contractor shall supply round the clock electricity in site offices of KRIDE located at the bridge during the entire contract work. Contractor shall also maintain the electric fittings/writings/plants of both the offices in the good condition.

(ii) To provide proper communication the contractor shall (at his own cost) establish inter office communication system between KRIDE offices, fabrication workshops and contractor's offices at site. Adequate number of intercom/ telephone/mobile sets or are similar suitable equipments as decided/approved by Engineer fully communicable shall be established in each of the above fabrication shops & at site of bridge work. The entire expenditure

incidental to running and maintenance of above shall be borne by the contractor within quoted rates.

(iii) Contractor shall (at his own cost) depute/nominate safety officers(s) for supervising safety aspects of all works/process including enabling arrangements for execution and inspection of the work. Safety systems/arrangements should be made for each activity of fabrication/erection and its inspection and same should be certified by nominated safety officer. Special care/arrangements are required to be made for supervising the erection/launching process of such high girders and concreting in road deck: arrangements should facilitate satisfactory and fearless inspection of each activity of launching/erection.

18. Computerized Numerical Control(CNC)Machine:

A machine based on advanced technology in the fields of fabrication of steel members known as Computerized Numerical Control(CNC)Machine is preferably be used. By this machine, cutting, drilling can be done at required distance and in required patterns. This machine is guided by a computer programme and drawings of the joints and components to be fabricated are prepared in AUTOCAD and fed in the computer programme. This machine is capable of reading the drawings in 3D image and after giving command, this machine cuts the steel plates, angles, channels etc. in desired length and pattern duly measuring very accurately in parts of mm. Drilling of holes are also done at required pitch and pattern as per drawing and hence the use of Jigs are done away with; thus eliminating the human error in measuring and marking etc. and further to enhance production.

19. CONTRACTOR TO STUDY DRAWING & SPECIFICATION etc. and HIS LIABILITY:

The contractor shall be responsible for close scrutiny of the approved drawings supplied by the KRIDE, For any discrepancies, error or omission in the drawings or other particulars indicated therein, the contractor shall approach the KRIDE immediately for rectification of such discrepancies, errors and omission. If any dimension/figure/features etc. on approved drawings or plans differ from those drawings or plans issued to the tenderers at the time of calling the tender, the dimensions as figured upon the approved drawings or plans shall be taken as correct.

20. FURTHER DRAWING AND INSTRUCTIONS:

(i) Engineer (Con) shall have full power to make and issue further drawings or instructions or direction from time to time as may appear necessary and proper to the contractor for efficient construction, completion and maintenance of the works. The contractor shall be bound by the same as fully as be if they had been mentioned or referred to in the contract, and the contractor shall not be entitled to any extra payment in respect of any work or materials shown or

directed to be done supplied by such further drawings or instructions required for completion of unless the Engineer (Con) shall have given an extra order for the same in writing.

(ii) The tenderer's rate should provide for cutting M. S. Plates for making out M. S. Flats from plates, in case M. S. Flats are not available, No extra payment for such cutting and rinding that may be necessary for converting M. S. Plates to Flats will be admissible.

(iii) If the works are required to be done in by Rly. Yards and Tracks are to be crossed, the tenderer shall inspect the site and make himself thoroughly acquainted with site condition and quote proper rate including provision for making suitable facilities at site for the work.

(iv) The work shall have to be done in such a manner that the normal working of the Railway within the railway yard does not get disturbed. Proper protection is not to be ensured by the contractor for allowing their labourers to cross the Railway lines with head-leads. No material/temporary structures should be kept adjacent to the running track within 3M from the centre line of track which may infringe rail traffic. The contractor shall take necessary precaution to prevent/cause damage to the Railway property & KRIDE staff during the execution of the work.

21. CONTRACTOR TO SUBMIT HIS TIME TABLE:

The contractor shall submit a monthly progress of work done during the month by the 4th day of the following month. He will also give the programme of coming month by 25th of each month. The programme will be subject to alteration at the discretion of the KRIDE officials.

22. ANY DOUBTED POINTS TO BE REFERRED TO THE Engineer/CN :

Should there be any doubt or obscurity as to anything to be done or not to be done by the contractor or as to these instructions or as to any matter or thing, the contractor must set forth such doubt or obscurity in writing and submit the same to Engineer (Con). Only such reply as the said Engineer (Con) may be in writing given shall be taken as the authoritative interpretation of the point in doubt or obscurity. Neither the Engineer nor any servant in the employ of the KRIDE have or has any authority to make any representative or explanations to the contractor as to the meaning of the Form of contract. General Condition and specification, schedule of quantities and rates, drawing or other documents or as to the conditions of the work or site or as to the works, or as to these instructions or as to any other matter or things.

23. LAND:

The KRIDE Administration will at its discretion arrange free of cost land to the extent sparable for contractors office at sites, field work shop, stores, assembly and erection yard. Land required by the contractor for labour or staff colony or other purpose will have to be arranged by him at his own cost.

24. TRANSPORTATION AND HANDLING OF MATERIAL & PLANT:

The contractor shall be responsible to arrange at his own cost wagons (if required) for transportation of materials and stores (other than those which are being arranged by the KRIDE) required for the works. The Railway / Client undertake no responsibility for delay in its supply. The contractor shall be responsible for all handling and timely loading and unloading as per Railway commercial rule for public.

25. Loading of Materials: Refer Clause 44.1 to 44.3 of IR Fabrication specification Serial BI-2001 issued by RDSO.

26. GUARANTEE AGAINST DEFECT:

(a) The Contractor shall guarantee that all the works executed under this contract shall be free from all defects and faults in material, workmanship and manufacture and shall be of acceptable standards for the contracted work and in full conformity with the technical specifications, drawings and other contract stipulations, for a period of 24 months from the date of taking over by the Employer.

(b) During the period of guarantee the Contractor shall keep available an experienced engineer /manpower to attend to any defective works / installations resulting from defective erection and/or defect in the installation supplied by the Contractor. This engineer shall not attend to rectification of defects which arise out of normal wear and tear and come within the purview of routine maintenance work. The contractor shall bear the cost of modifications, additions or substitutions that may be considered necessary due to faulty materials or workmanship for the satisfactory working of the equipment. The final decision shall rest with the Engineer his successor(s)/Nominee.

(c) During the period of Guarantee the Contractor shall be liable for the replacement at site of any parts which may be found defective in the executed work whether such parts / structural elements of his own manufacture or those of his sub-contractor / supplier whether arising from faulty materials, workmanship or negligence in any manner on the part of the Contractor provided always that such defective parts as are not repairable at site are promptly returned to the Contractor if so required by him at his (Contractor's) own expenses. In case of parts of executed work detected during guarantee period, contractor should replace all such items irrespective of the fact whether all such items have failed or not. The Contractor shall bear the cost of repairs carried out on his behalf by the Employer at site. In such a case, the contractor shall be informed in advance of the works proposed to be carried out by the Employer.

(d) If it becomes necessary for the Contractor to replace or renew any defective portion of the structural elements until the expiration of six month from the date of such replacement or renewal or until the end of the above mentioned period whichever is later. Such extension shall not apply in case of defects of a minor

nature, the decision of the General Manager/ROB or CPM or his successor/nominee being final in the matter. If any defect be not remedied within a reasonable time during the aforesaid period the Employer may proceed to do work at the Contractor's risk and expense, but without prejudice to any other rights and remedies which the Employer may have against the Contractor in respect of such defects or faults.

(e) The repaired or renewal parts structure shall be delivered / supplied and erected / executed on site free of charge to the employer.

(f) Any materials, fittings, components or equipment / structure supplied under items for supplying / providing and fixing in schedule shall also be covered by the provisions of this paragraph. The liability of the Contractor under the guarantee will be limited to re-supply of components / structure installation and fittings.

27. INCLUSIVE PRICE:

(i) The cost of all painting, temporary erection and testing at the Tenderer's workshop, Packing and delivery at the site of work as specified in the schedule, is to be included in the price quoted on the tender.

(ii) Any fittings, accessories or apparatus which may not have been mentioned in the specification, but which are considered necessary for the execution of this work, are to be provided by the contractor without any extra payment. The work must be completed in all details.

28. Traffic Blocks / Power Blocks / Shut Down:

28.1. Railway / KRIDE shall obtain Power / Traffic / Shut down as per the readiness and request of the contractor. Engineer/Engineer's representative will facilitate to make arrangements to obtain power blocks / shutdown (hereinafter referred to as blocks) for works to be carried out along or adjacent to the track work. Works such as foundations of abutments/piers shall generally be done without blocks. However if block is required due to safety considerations, the construction shall be done under block. The requirement of shut down, power blocks etc. shall be assessed by the contractor and will be submitted to the Engineer/Engineer's representative. All the erection of girders etc. shall be done under minimum power block/shut down. Contractor will arrange minimum two gangs of labours i.e. expert of TR line fitters, Semi-skilled fitters, labour, etc. with super visors and sufficient tools and tackles required as per site conditions. Work will be done day & night with war foot level with the approval of the Engineer/Engineer's representative. Block will be provided for each ROB individually.

28.2. Blocks will be granted during day & night hours continuous. The Contractor shall confirm that he will equip himself to carry out all construction during night blocks efficiently by suitable special lighting equipment without any extra cost.

28.3. Block period shall be counted from the time the TR-line is placed at the Contractors disposal at the work-spot till it is cleared by the Contractor.

28.4. Blocks will be subject to normal operating conditions and rules of the Railway. All formalities of exchanging private number etc. with the traffic control/traction power controller will be carried out by the Engineer staff and for this purpose the Engineer will depute a representative for each ROB, who will be responsible for imposing power blocks/shut down and also removing the same after men, material and equipment have been cleared by the Contractor from running tracks and the same declared safe for traffic by Engineer/Engineer's representative in case of works involving safety of running tracks.

28.5. The works required to be done under traffic block shall be carried out only in the presence of KRIDE officials. The KRIDE supervisor shall certify safe conditions for passage of trains before resumption of traffic. The works to be done under traffic block shall be carried out under the provision of banner flag and protection of engineering flagman.

28.6. Any charges which may be levied by IR on account of "Possessions" shall be payable by the contractor but shall be reimbursed by the Employer. However penalties, if any, levied by Indian Railways caused due to any careless working or otherwise of violation of the Terms and Conditions of the track block, shall be payable by the contractor.

29. Declaration of designed fabrication/assembly yard as a part of site:

29.1. KRIDE may issue necessary declaration on specific request of the contractor subject in the condition that the workshop area are earmarked exclusively for fabrication of girder components for this bridge with separate entry/exit arrangements. This is with further stipulation that such an arrangement should be acceptable to excise department by way of a no objection certificate. Necessary follow up with Excise Department will be solely the contractors responsibility. In the event of excise department not agreeing to such an arrangement, the contractor shall not have any claims whatsoever, and shall pay excise tax and other extant taxes as per extant rules within quoted rates and nothing extra would be payable to them on this account.

30. STUD SHEAR CONNECTOR:

In the case of Composite Girders wherein the steel structure of a bridge is fixed to the concrete structure of the deck so that the steel and concrete act together, so reducing deflections and increasing strength. This is done using 'shear connectors' fixed to the steel beams and then embedded in the concrete. Shear connectors can be welded on, perhaps using a 'stud welder', or better still on export work, by fixing nuts and bolts.

30.1 Material: The stud shear connector and ceramic ferrules shall conform to type SD1/UF as per BS EN ISO 13918-2008. The diameter of ceramic ferrule D 7 as per Figure 13/Table 18 of BS EN ISO 13918 shall be 26. Mechanical

properties of stud shear connectors shall be as per ISO 6892/BS EN ISO 13918–2008. Shape of tip of stud shear connectors may be chosen by manufacturer. The stud tip shall be supplied with flux in the form of press fitted aluminum ball or Aluminum spray coating.

30.2 Welding: The welding of stud shear connectors shall be done by “Drawn arc stud welding with ceramic ferrule” Technique. The stud and the surface to which studs are welded shall be free from scale, moisture, rust and other foreign material. The stud base shall not be painted, galvanized or cadmium plated prior to welding. Welding shall not be carried out when temperature is below 10 degrees Celsius or surface is wet or during periods of strong winds unless the work and the welder are adequately protected. The welds shall be visually free from cracks and shall be capable of developing at least the nominal ultimate strength of studs. The procedural trial for welding the stud shall be carried out when specified by the Engineer.

30.3 Testing:-

(a) Appearance test

1. The weld to a stud shear connector should form a complete collar around the shank and free from cracks, excessive splashes of weld material, free from injurious laps fins, seams, twist, bends or other injurious defects.

2. Weld material should have a “Steel Blue” appearance.

(b) Test to check the fixing of shear studs. All studs need to be checked by a ring test.

1. Ring Test: Involves striking the side of the head of the stud with a 2 kg hammer. A Ringing tone achieved after striking indicates good fusion whereas dull tone indicates a lack of fusion (BS 115).

2. Bend Test: Test requires the head of a stud to be displaced laterally by approximate 25% of its height using a 6 kg hammer.

- The weld should then be checked for signs of cracking or lack of fusion
- Stud should not be bent back as this is likely to damage the weld
- The testing rate should be 1 in 50 (BS 115).

30.4. Measurements: The work shall be enumerated. It's unit is "each".

30.5 Rates: -The rate shall include the cost of material, labour, equipment, tools and plants, etc. complete required for all operations described above. The rate for Stud Shear Connected is not included in the respective item for girder fabrication, so separate payment for this item will be made.

31. SCHEDULE OF TECHNICAL REQUIREMENTS (STR)) FOR FABRICATION OF STEEL GIRDERS. (Latest version to be followed)

A. Procedure for supply of steel girder:

1. For the steel girders of all bridges other than important bridges (as defined in IRS Sub Structure Code), the tendering firm shall be from RDSO approved list of

firms for Steel Bridge Girders only further subject to the condition that the tendering firm fulfils other technical and financial eligibility criteria as prescribed by the KRIDE in the tender and the steel girders to be manufactured by the tendering firm in RDSO approved premises only.

2. For Steel Girders of important bridges (as defined in IRS Sub Structure Code), besides RDSO approved firms, the tendering firm can also be other than RDSO approved firm for Steel Bridge Girders subject to the firm fulfilling technical and financial eligibility criteria as prescribed by the KRIDE in the tender and the site fabrication workshop of the firm shall be set up at site of work which meet with the Schedule of Technical Requirement (STR) for Steel Bridge Girders issued by RDSO time to time. The approval of the site fabrication workshop meeting with the STR to be done by RDSO only and not by any other organization. The existing system of approval by KRIDE officer not below JA Grade is discontinued.

The tenderers besides satisfying similar work eligibility criteria and financial eligibility criteria have also to fulfill the following technical requirements.

B. The firm will ensure availability of

- i) The required infrastructure, machinery & plant.
- ii) Testing and measuring equipment duly calibrated.
- iii) Trained technical manpower and quality assurance programme.
- iv) Equipment meeting the requirements of relevant specifications.
- v) Space required for manufacturing, testing and storage viz. manufacturing floor, godown, store, office and test lab also.

C. General and Infrastructural Requirements for Steel Girders.

- i) The fabricator must have adequate organization including supervisors, skilled workers and adequate manpower to execute the fabrication work in competent manner.
- ii) A proper organization must exist to perform the functions of purchasing of various raw materials and consumables etc. and maintaining related inspection certificates, test certificates etc.
- iii) Previous experience of fabricating steel structures capable of withstanding dynamic loads such as bridge girders, microwave towers, heavy industrial steel structures etc. is essential.
- iv) A proper procedure for maintenance of records for receipt and consumption of raw material should be in vogue or developed so as to permit verification by KRIDE representative.
- v) Adequate power supply should be available through distribution agencies and adequate backup shall be available through captive generation.
- vi) Covered pay area served by EOT cranes or by mechanically operated machines should be provided to handle day to day fabrication of girder components.
- vii) Enough area to store raw material, subassemblies and finished product should be available. The area provided should be enough to store raw material to

execute the work order for requirement of steel. Suitable material handling facilities in form of EOT/mobile cranes should be available.

viii) A separate line for inspection and testing of girders should be provided for final inspection and testing of bridge girders by KRIDE inspecting engineers.

ix) Covered shed area protected from rain, dust etc. should be provided for surface preparation/painting/metalizing of steel girders. As no part of the work shall be painted unless it has been finally passed and cleared by inspecting officer, adequate space for storing fabricated component awaiting painting shall be available.

x) For full scale layout of drawings to which girders are to be manufactured, template shop with steel/concrete floor should be available. For symmetrical girders, central half of the layout may be done and for non-symmetrical girders full-length layout shall be required. Further, for development of jigs and fixtures this shop should have in – house jigs manufacturing facilities.

xi) Sufficient space for trial erection of the girder after manufacture shall be available. For this purpose, proper handling equipment, stacking space and other facility shall be available.

xii) An adequately equipped and staffed drawing office is required for preparation of fabrication drawings.

D. Machinery & Plants.

Following machinery and plants shall be available with the fabricator.

i) EOT/Portal/mobile crane of min.10t capacity or suitable material handling facility to serve the handling of material for fabrication of girders, unloading of raw material and loading of finished product.

ii) Compressors of adequate capacity suitable for riveting and for other simultaneous applications.

iii) Oxy – Acetylene gas cutting equipment.

a) Profile cutting equipment of adequate size.

b) Self-propelled straight cutting equipment preferably consisting of multiple torches.

iv) Radial drilling machines of adequate capacity to drill holes of 12 to 50 mm diameter.

v) End milling machine.

vi) Plate & structural sections straightening machine.

vii) Pneumatic/hydraulic yoke riveting machine.

viii) Adequate number of portable pneumatic tools such as grinders, drilling machines chipping machines, wrenches etc.

ix) Dumpy level or theodolite instrument for recording of camber/deflection of trial erected girder.

x) Facility for surface preparation/painting/metalizing as per IRS B-1 specification.

xi) A) To test the raw material and girders to conform it for relevant specification, testing facilities for the following must be provided:

a) Elcometer for measuring thickness of paint.

b) Steel measuring tape duly calibrated.

B) Following facilities for testing of material can be in house or may be arranged from external agencies :

(a) Equipment required for testing of mechanical properties, chemical composition and microstructure etc.

(b) Ultrasonic flaw detection testing facilities for checking internal flaws and thickness of section.

xii) System of periodical maintenance of M& P must be in vogue and proper records maintained.

E. Quality Infrastructure.

i) Fabricator shall have proper quality infrastructure to ensure the quality product as required under latest issue of IRS B1 specification and IRS Welded Bridge Code as applicable.

ii) A system should be in force for analysis of defects noticed during internal and external inspections of the final product and sub-assemblies. A dynamic arrangement for a feed back to the source of defects and for rectification should be in vogue.

iii) The fabricator should have adequate infrastructure and facilities like checking gauges, templates etc. during fabrication required from time to time so as to ensure that the finished product is as per requirement of IRS : B1 and Welded Bridge code.

iv) Following specifications/codes commonly referred in connection with fabrication or riveted steel girders must be available with fabricator.

IRS B -1	Fabrication and erection of steel girder bridges
IRS	Steel bridge code
IS : 1148	Hot rolled steel rivet bars (up to 40 mm dia) for structural purpose.
IS: 1149	High tensile steel rivet bars for structural purpose
IS : 1852	Rolling and cutting tolerance for Hot Rolled Steel Products
IS : 2062	Hot rolled low, medium and high tensile structural steel.

The latest version of BIS Codes/Specifications referred herein including their amendments issued from time to time are to be followed:

v) All equipment must meet the requirements of corresponding BIS or other international specifications.

F. Additional general and infrastructural requirements for fabrication of welded girders.

i) The following facilities should be available for fabrication of welded girders.

a) Welding transformers/rectifier for Manual Metal Arc Welding(MMAW)

b) Inert gas (Carbon Dioxide) welding equipment sets.

c) Automatic sub – merged arc welding equipment.

d) Suitable welding manipulators.

e) Macro-etching/ Dye Penetrant or Magnetic Particle testing facilities.

- f) Arrangement for radiographic test either in house or from external agency.
- g) Tongue tester for measuring current and voltage.
- h) Gauges for checking weld size, throat thickness and edge preparation etc.
- ii) Machine for edge preparation before welding.
- iii) Fabricators must ensure that welding and gas cutting equipment/accessories meet BIS or other international standard requirements. It will be fabricators responsibility to satisfy the inspecting engineer that all the welding equipment/accessories conform to the BIS standard or any other standard in the absence of proper marking on such equipment/accessories.
- iv) Only trained and qualified Welders shall be deployed for welding. The welders must be trained in accordance with the provisions of IS:817. They must be trained either from recognized welding institutes or by in – house training, if proper facilities exist. The welders must be treated as per requirements of IS: 7310 and proper records maintained.
- v) All welding shall be carried out under the overall supervision of a qualified welding supervisor who has been trained in 'Welding Technology from any recognized welding institute.
- vi) Welding instructions shall be prominently displayed on the shop floor. Requirement of the job in hand must be clearly explained to the welder before he is permitted to work.
- vii) Following specifications/codes commonly referred in connection with fabrication of welded steel girders must be available with fabricator.

IRS WBC	IRS Welded Bridge Code
IS: 817	Code of practice for training and testing of metal arc welders.
IS : 818	Code of Practice for Safety and health requirements in electric and gas welding operations.
IS : 822	Code of Procedure for inspection of welds
IS : 4353	Recommendations for sub-merged arc welding of mild steel and low alloy steels.
IS : 7307 (Pt.I)	Approval tests for welding procedure.
IS : 7310 (Pt.I)	Approval tests for welders working to approved welding procedure – fusion welding of steel.
IS : 9595	Recommendations for metal arc welding of carbon and carbon manganese steel.

The latest version of BIS Code/Specifications referred herein including their amendments issued from time to time are to be followed. Wherever to the standards mentioned above appears in the specification it shall be taken as a reference to the latest version of the standard.

5.0 Personnel

Baiyyappanahalli - Hosur Doubling - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations. (Single Package).

The Bidder shall deploy, as per the programme, the minimum number of personnel for the key positions with requisite qualification and experience as mentioned hereunder:-

S. No.	Position	Minimum No. of Personnel	Qualification	Minimum Experience In Similar Work [years]
1	Project Manager	1	Graduate/ Diploma in Civil Engineering	10 years, out of which 3 years in-charge of road/Railway project (for Graduate). 16 years, out of which 3 years in-charge of road/Railway project (for Diploma).
2	Sr. Engineers i) for Earth work & Bridges	1	Graduate/ Diploma in Civil Engg.	5 Years (for Graduate) 10 years for Diploma
3	Technicians/Supervisors			
	(a) Earthwork	2	Minimum Diploma in Civil Engineering	5 years
	(b) Bridges	1	Minimum Diploma in Civil/Mechanical Engineering	5 years

4	Material Testing Engineer	1	Minimum Diploma in Civil Engg.	5 years
5	Draftsman with knowledge of AutoCAD			
6	Civil Engineering	1	Minimum Diploma in Civil Engineering	3 years
7	Safety Officer	1	Preferably Graduate on any discipline. But have completed Diploma in Industrial safety management Or construction management	5 years

Note:

- (1) Project Manager is to be deployed within 30 days of issue of Letter of Acceptance. The programme for deployment of other personnel shall be conveyed by PMC/Employer and personnel shall be deployed within 30 days of the stated requirement. In case of failure to deploy any personnel within 30 days of the stated requirement, a penalty shall be imposed for each day of delay as under:
- (a) Rs 8000/- per person per day for Project Manager.
 - (b) Rs 3000/- per person per day for Sr. Engineers; Quality Assurance Specialist/ Quality Officer
 - (c) Rs 1000/- per person per day for other personnel.
- (2) On completion/likely completion of activities concerned to a particular personnel, demobilization of that personnel shall be requested by the Contractor at least 30 days in advance and demobilization shall be done with the approval of PMC/Employer only. In case demobilization is done without approval of PMC/Employer, the penalty mentioned in note (1) above, as relevant, shall be imposed for each day of absence of the personnel.
- (3) The professional qualification requirement can be relaxed by the concerned GM (Civil)/K RIDE in case of ex-Railwayman who has worked in Engineering department of Railway in a position of Gazetted officer for Sr Engineer (P Way) / Junior Engineer or above for Supervisor (P Way) and has relevant experience not less than that prescribed for minimum professional qualification.

- (4) The experience requirement can be relaxed by the concerned GM (Civil)/ K RIDE if he is satisfied with reasons put forth by the contractor for failure to deploy personnel with requisite qualification and experience and he also finds the proposed personnel otherwise suitable for the job.

EQUIPMENT

Baiyyappanahalli - Hosur Doubling - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations. (Single Package).

The Bidder shall deploy, the minimum number of equipment for execution of the work as per the mutually agreed programme as mentioned hereunder:

S.No.	Equipment Type and Characteristics	Min. Number Required
Equipment type and characteristics for Civil work		
1	Earth excavation and loading equipment (Excavator)	2 sets
2	Earth moving equipment (Dumper)	8 Nos.
3	Earth leveling and grading equipment (Grader)	1 Nos.
4	Earth compaction equipment(10 Ton Vibratory Rollers)	1 nos.
5	Truck mounted water tank/sprinklers	2 nos.
6	Concrete Vibrating equipment	3 Sets
7	Total stations	1 No.
8	Auto levels	2 Nos.
9	Fully equipped soil, aggregate and concrete testing laboratory	1 set
11	Weigh batchers and concrete mixers	1 sets
12	Mini Vibrating road roller of 1 Tonne Capacity	1 no

Note:

- Any equipment not required further can be demobilized with the prior approval of the Engineer.

The records of mutually agreed programme of deployment as well as request for demobilisation of any equipment/plant and approval of the same should be maintained in a register.

2. Failure to deploy the above equipment as per mutually agreed programme shall attract penalty @ Rs.20,000/- per day of delay for each equipment at S.No. 1, 3, 4, 9 &12.
3. The type of equipment specified can be changed by the Engineer depending upon suitability of the equipment as per site conditions with the approval of GM(Civil)/K RIDE concerned subject to the following;
 - (i) The total rate of production/output of proposed number and type of equipment should be equal to or more than that of the number and type of equipment stipulated in the contract agreement and quality of work is not compromised in any way;
 - (ii) Eligibility and Qualification Criteria (EQC) in the bid document did not include any past experience criteria of execution of a key activity with the use of particular type of equipment proposed to be changed;
 - (iii) Higher rates for works were not justified in the estimate or BOQ on account of use of particular type of equipment proposed to be changed;
 - (iv) Financial implications due to change in type and number of equipment shall be prepared and signed by both the parties and placed on record. If any financial benefit is found to accrue to the contractor, the same shall be recoverable from the contractor's bills.
 - (v) If the equipment proposed to be changed is covered under penalty clause specified in note above then the applicable rate of penalty per equipment shall be modified in proportion to increase/decrease in number of equipment.

Milestone

BRIDGE NO	NEW DOUBLING LINE / EXG. LINE	DESCRIPTION	TARGET DATE OF COMPLETION
533	New Double Line	Supply , fabrication & Transportation of 2 X 45.7m Open Web Girder to the site.	10 Months from issue of Letter of awarding of works.
513	New Double Line	Supply , fabrication & Transportation of 1 X 15.27m Plate Girder to the site.	10 Months from issue of Letter of awarding of works.
533	Exg. Line	Supply , fabrication & Transportation of 1 X 45.7m Open Web Girder to the site.	14 Months from issue of Letter of awarding of works.

NOTE : A penalty of Rs 2.50 Lakhs will be imposed per week per span for failure to adhere the above targets.

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PART III	Conditions of Contract and Contract Forms
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Section 6	General Conditions of Contract (GCC)
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Section 6	General Conditions of Contract (GCC)
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General Conditions

1.	General Provisions
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1.1 Definitions

In the Conditions of Contract (“these Conditions”), which include Special Conditions of Contract, Parts A and B, and these General Conditions, the following words and expressions shall have the meanings stated. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.

1.1.1 The Contract

- 1.1.1.1 “**Contract**” means the Contract Agreement, the Letter of Acceptance, the Letter of Bid, these Conditions, the Specification, the Drawings, the Schedules, and the further documents (if any) which are listed in the Contract Agreement or in the Letter of Acceptance.
- 1.1.1.2 “**Contract Agreement**” means the contract agreement (*if any*) **referred** to in Sub-Clause 1.6 [Contract Agreement].
- 1.1.1.3 “**Letter of Acceptance**” means the letter of formal acceptance, signed by the Employer, of the Letter of Bid, including any annexed memoranda comprising agreements between and signed by both Parties. If there is no such letter of acceptance, the expression “Letter of Acceptance” means the Contract Agreement and the date of issuing or receiving the Letter of Acceptance means the date of signing the Contract Agreement.
- 1.1.1.4 “**Letter of Bid**” means the document entitled letter of bid, which was completed by the Contractor and includes the signed offer to the Employer for the Works.
- 1.1.1.5 “**Specification**” means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.
- 1.1.1.6 “**Drawings**” means the drawings of the Works, as included in the **Contract**, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract.
- 1.1.1.7 “**Schedules**” means the document(s) entitled schedules, completed by the Contractor and submitted with the Letter of Bid, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.
- 1.1.1.8 “**Bid/Tender**” means the Letter of Technical Bid **and** Letter of Price Bid and all other documents which the Contractor submitted with the Letter of Technical Bid and Letter of Price Bid , as included in the Contract.
- 1.1.1.9 “**Bill of Quantities**” and “**Daywork Schedule**” and “Schedule of Payment Currencies” mean the documents so named (if any) which are comprised in the Schedules.

- 1.1.1.10 “**Contract Data**” means the pages completed by the Employer entitled contract data which constitute Part A of the Special Conditions of Contract.
- 1.1.1.11 “**Employer’s Requirements**” means the document entitled ‘Employer’s Requirements’ as part of Works Requirements and as included in the Contract, and any additions and modifications to such document in accordance with the Contract. Such document specifies the purpose, scope, and/or design and/or other technical criteria, for the works.

1.1.2 Parties and Persons

- 1.1.2.1 “**Party**” means the Employer or the Contractor, as the context requires.
- 1.1.2.2 “**Employer**” means the person named as employer in the Contract Data and the legal successors in title to this person.
- 1.1.2.3 “**Contractor**” means the person(s) named as contractor in the Letter of Bid accepted by the Employer and the legal successors in title to this person(s).
- 1.1.2.4 “**Engineer**” means the person nominated by the Employer to act as the Engineer for the purposes of the Contract and named in the Contract Data, or other person appointed from time to time by the Employer and notified to the Contractor under Sub-Clause 3.4 [Replacement of the Engineer]. The person nominated to act as an engineer may be an employee of Rail Infrastructure Development Company (Karnataka) Ltd (K RIDE) or an employee of a Project Management Consultancy firm engaged by K RIDE for project management as per the discretion of the Employer.
- 1.1.2.5 “**Contractor’s Representative**” means the person named by the Contractor in the Contract or appointed from time to time by the Contractor under Sub-Clause 4.3 [Contractor’s Representative], who acts on behalf of the Contractor.
- 1.1.2.6 “**Employer’s Representative**” means the person named by the Employer in the Contract or appointed from time to time by the Employer who acts on behalf of the Employer.
- 1.1.2.7 “**Employer’s Personnel**” means the Engineer, the assistants referred to in Sub-Clause 3.2 [Delegation by the Engineer] and all other staff, labour and other employees of the Engineer and of the Employer; and any other personnel notified to the Contractor, by the Employer or the Engineer, as Employer’s Personnel.
- 1.1.2.8 “**Contractor’s Personnel**” means the Contractor’s Representative and all personnel whom the Contractor utilises on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.
- 1.1.2.9 “**Subcontractor**” means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works; and the legal successors in title to each of these persons.

1.1.3 Dates, Tests, Periods and Completion

- 1.1.3.1 **“Base Date”** means the date 28 days prior to the deadline for submission of bids.
- 1.1.3.2 **“Commencement Date”** means the date notified under Sub-Clause 8.1 [Commencement of Works].
- 1.1.3.3 **“Time for Completion”** means the time for completing the Works or a Section (as the case may be) under Sub-Clause 8.2 [Time for Completion], as stated in the Contract Data (with any extension under Sub-Clause 8.4 [Extension of Time for Completion]), calculated from the Commencement Date.
- 1.1.3.4 **“Tests on Completion”** means the tests which are specified in the Contract or agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Employer.
- 1.1.3.5 **“Taking-Over Certificate”** means a certificate issued under Clause 10 [Employer’s Taking Over].
- 1.1.3.6 **“Tests after Completion”** means the tests (if any) which are specified in the Contract and which are carried out in accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Employer.
- 1.1.3.7 **“Defects Notification Period”** means the period for notifying defects in the Works or a Section (as the case may be) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], as stated in the Contract Data (with any extension under Sub-Clause 11.3 [Extension of Defects Notification Period]), calculated from the date on which the Works or Section is completed as certified under Sub-Clause 10.1 [Taking Over of the Works and Sections].
- 1.1.3.8 **“Performance Certificate”** means the certificate issued under Sub-Clause 11.9 [Performance Certificate].
- 1.1.3.9 **“Day”** means any (working or non-working) calendar day from 00:00 hrs. to 24:00 hrs.
- 1.1.3.10 **“Months”** means any calendar month of the Gregorian calendar year.
- 1.1.3.11 **“Year”** means 365 days
- 1.1.3.12 **“Time Periods”** Any reference to time period commencing “from” the specified day or date “till” or “until” a specified day shall include both such days.
- 1.1.3.13 Any reference to **“Time”** shall be according to Indian Standard Time (IST).

1.1.4 Money and Payments

- 1.1.4.1 **“Accepted Contract Amount”** means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects. In the Letter of Acceptance, the Accepted Contract Amount shall have two components i.e. (i) the base amount excluding GST (ii) GST component (calculated at the rate for works contract service as per GST Laws).

- 1.1.4.2 “**Contract Price**” means the price defined in Sub-Clause 14.1 [The Contract Price], and includes adjustments in accordance with the Contract.
- 1.1.4.3 “**Cost**” means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.
- 1.1.4.4 “**Final Payment Certificate**” means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].
- 1.1.4.5 “**Final Statement**” means the statement defined in Sub-Clause 14.11 [Application for Final Payment Certificate].
- 1.1.4.6 “**Foreign Currency**” means a currency in which part (or all) of the Contract Price is payable, but not the Local Currency.
- 1.1.4.7 “**Interim Payment Certificate**” means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.
- 1.1.4.8 “**Local Currency**” means the currency in Indian Rupees.
- 1.1.4.9 “**Payment Certificate**” means a payment certificate issued under Clause 14 [Contract Price and Payment].
- 1.1.4.10 “**Provisional Sum**” means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].
- 1.1.4.11 “**Retention Money**” means the accumulated retention moneys which the Employer retains under Sub-Clause 14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause 14.9 [Payment of Retention Money].
- 1.1.4.12 “**Statement**” means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.

1.1.5 Works and Goods

- 1.1.5.1 “**Contractor’s Equipment**” means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor’s Equipment excludes Temporary Works, Employer’s Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.
- 1.1.5.2 “**Goods**” means Contractor’s Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.
- 1.1.5.3 “**Materials**” means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.
- 1.1.5.4 “**Permanent Works**” means the permanent works to be executed by the Contractor under the Contract.
- 1.1.5.5 “**Plant**” means the apparatus, machinery and vehicles intended to form or forming part of the Permanent Works.

- 1.1.5.6 **“Section”** means a part of the Works specified in the Contract Data as a Section (if any).
- 1.1.5.7 **“Temporary Works”** means all temporary works of every kind (other than Contractor’s Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.
- 1.1.5.8 **“Works”** mean the Permanent Works and the Temporary Works, or either of them as appropriate.

1.1.6 Other Definitions

- 1.1.6.1 **“Contractor’s Documents”** means the calculations, computer programs and other software, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.
- 1.1.6.2 **“Country”** means India, the country in which the Site (or most of it) is located, where the Permanent Works are to be executed.
- 1.1.6.3 **“Employer’s Equipment”** means the apparatus, machinery and vehicles (if any) made available by the Employer for the use of the Contractor in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Employer.
- 1.1.6.4 **“Force Majeure”** is defined in Clause 19 [Force Majeure].
- 1.1.6.5 **“Laws”** means all national (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority.
- 1.1.6.6 **“Performance Security”** means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].
- 1.1.6.7 **“Site”** means the places where the Permanent Works are to be executed and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.
- 1.1.6.8 **“Unforeseeable”** means not reasonably foreseeable and against which adequate preventive precautions could not reasonably be taken by an experienced contractor by the date for submission of the Bid.
- 1.1.6.9 **“Variation”** means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments].
- 1.1.6.10 **“Railway”** means a railway, or any portion of a railway for public carriage of passengers and goods as defined in the Railways ACT 1989. Any reference to railway means the Indian Railways and the respective Zonal Railway

1.2 Interpretation

In the Contract, except where the context requires otherwise:

- (a) words indicating one gender include all genders;
- (b) words indicating the singular also include the plural and words indicating the plural also include the singular;
- (c) provisions including the word “agree,” “agreed” or “agreement” require the agreement to be recorded in writing;

- (d) “written” or “in writing” means hand-written, type-written, printed or electronically made, and resulting in a permanent record; and
- (e) the word “tender” is synonymous with “bid”, and “tenderer” with “bidder” and the words “tender documents” with “bidding documents”

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

In these Conditions, provisions including the expression "Cost plus profit" require this profit to be one twentieth (5%) of this Cost unless otherwise indicated in the Contract Data.

1.3 Communications

Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:

- (a) in writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Contract Data; and
- (b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Contract Data. However:
 - (i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and
 - (ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.

Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Engineer or the other Party, as the case may be.

1.4 Law and Language

The Contract shall be governed by the law of the country or other jurisdiction stated in the Contract Data.

The ruling language of the Contract shall be that stated in the Contract Data.

The language for communications shall be that stated in the Contract Data. If no language is stated there, the language for communications shall be the ruling language of the Contract.

1.5 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

- (a) the Contract Agreement (if any),
- (b) the Letter of Acceptance,
- (c) the Letter of bid,

- (d) the Schedules (including Priced Bill of Quantities),
- (e) Special Conditions of Contract:
 - (i) Part A – Contract Data
 - (ii) Part B - Specific Provisions
- (f) the General Conditions of Contract
- (g) Works/Employer's Requirements,
- (h) the Drawings,
- (i) any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction.

1.6 Contract Agreement

The Parties shall enter into a Contract Agreement within 28 days after the Contractor receives the Letter of Acceptance, unless they agree otherwise. The Contract Agreement shall be based upon the form annexed to the Special Conditions of Contract. The costs of stamp duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Employer.

1.7 Assignment

Neither Party shall assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, either Party:

- (a) may assign the whole or any part with the prior agreement of the other Party, at the sole discretion of such other Party, and
- (b) may, as security in favour of a bank or financial institution, assign its right to any moneys due, or to become due, under the Contract.

1.8 Care and Supply of Documents

The Specification and Drawings shall be in the custody and care of the Employer. Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawing shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.

Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Employer. Unless otherwise stated in the Contract, the Contractor shall supply to the Engineer six copies of each of the Contractor's Documents.

The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract. The Employer's Personnel shall have the right of access to all these documents at all reasonable times.

If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.

1.9 Delayed Drawings or Instructions

The Contractor shall give notice to the Engineer whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and details of the nature and amount of the delay or disruption likely to be suffered if it is late.

If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Engineer to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

However, if and to the extent that the Engineer's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit

1.10 Employer's Use of Contractor's Documents

As between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.

The Contractor shall be deemed (by signing the Contract) to give to the Employer a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This licence shall:

- (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
- (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
- (c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.

The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Employer for purposes other than those permitted under this Sub-Clause.

1.11 Contractor's Use of Employer's Documents

As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Employer. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.

1.12 Confidential Details

The Contractor shall disclose all such confidential and other information as the Engineer may reasonably require in order to verify the Contractor's compliance with the Contract.

The Contractor shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out the Contractor's obligations under the Contract or to comply with applicable Laws. The Contractor shall not publish or disclose any particulars of the Works without the previous agreement of the Employer. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.

1.13 Compliance with Laws

The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Special Conditions of Contract:

- (a) the Employer shall have obtained (or shall obtain) the planning, zoning or similar permission for the Permanent Works, and any other permissions described in the Specification as having been (or being) obtained by the Employer; and the Employer shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and
- (b) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Employer harmless against and from the consequences of any failure to do so.

1.14 Joint and Several Liability

If the Contractor constitutes (under applicable Laws) a joint venture of two or more persons/firms:

- (a) these persons shall be deemed to be jointly and severally liable to the Employer for the performance of the Contract;
- (b) these persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and
- (c) the Contractor shall not alter its composition or legal status without the prior consent of the Employer.

- (d) In the event of default by any partner of joint venture, on or after achieving 25% of the financial progress (excluding advance if any) the lead partner or remaining partner(s), in case the defaulting partner is the lead partner, shall notify the Employer within twenty eight (28) days of the occurrence and within Fifty six (56) days of the said notification, the lead partner or remaining partner(s), who are not the defaulting partner, shall assign the works of the defaulting partner, to equally competent party with prior consent of the Employer. For this purpose the term “equally competent party” shall mean as under:

“The new JV partner replacing the defaulting partner should meet the EQC requirement of package/combination of packages which was met by the defaulting partner on the basis of which the original tender was awarded.”

The replacement of any defaulting partner, with the new partner shall be subject to the condition that the new partner has to submit additional performance security equal to 10% of balance cost of work of the JV partner being replaced. The performance security submitted by the defaulting partner shall also continue with K RIDE till satisfactory completion of the work.

- e) Notwithstanding the consent of the Employer for change in composition or legal status of the joint venture the partners shall continue to be jointly and severally liable to the Employer.
- f) The joint venture shall enter into a joint venture agreement incorporating the provisions of sub-para (a) to (e) based upon the form annexed to the Conditions of Contract. The JV agreement shall indicate precisely the specific role of all members of the JV in respect of planning, design, construction equipment, key personnel, work execution, and financing of the project. The authority to sign the agreement shall be evidenced by approved legal instruments.

Notwithstanding the contents of the sub-clauses above, if the performance of any JV partner is not found satisfactory by the Employer, in respect of the responsibilities assigned to him as per JV agreement which is a part of this agreement, the Employer may issue notice of such default to the said JV partner or the JV (depending upon reasons of default) and declare the said JV partner or the JV as Poor Performer. The issue of such notice shall automatically debar the JV partner or JV as the case may be from participating in any K RIDE tender from the date of issue of notice of default.

1.15 Inspections by the Employer

The Contractor shall permit the Employer and/or persons appointed by the Employer to inspect the Site and/or the Contractor's records relating to the performance of the Contract.

2.1 Right of Access to the Site

The Employer shall give the Contractor right of access to, and possession of, all parts of the Site within the time (or times) stated in the Contract Data. The right and possession may not be exclusive to the Contractor. If, under the Contract, the Employer is required to give (to the Contractor) possession of any foundation, structure, plant or means of access, the Employer shall do so in the time and manner stated in the Specification. However, the Employer may withhold any such right or possession until the Performance Security has been received.

If no such time is stated in the Contract Data, the Employer shall give the Contractor right of access to, and possession of, the Site within such times as may be required to enable the Contractor to proceed in accordance with the programme submitted under Sub-Clause 8.3 [Programme].

If the Contractor suffers delay as a result of a failure by the Employer to give any such right or possession within such time, the Contractor shall give notice to the Engineer and shall be entitled to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) new rates in terms of clause 12.3.1 (c).

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

However, if and to the extent that the Employer's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time or new rates.

2.2 Permits, Licenses or Approvals

The Employer shall (where he is in a position to do so) provide reasonable assistance to the Contractor at the request of the Contractor:

- (a) by obtaining copies of the Laws of the Country which are relevant to the Contract but are not readily available, and
- (b) for the Contractor's applications for any permits, licences or approvals required by the Laws of the Country:
 - (i) which the Contractor is required to obtain under Sub-Clause 1.13 [Compliance with Laws],
 - (ii) for the delivery of Goods, including clearance through customs, and
 - (iii) for the export of Contractor's Equipment when it is removed from the Site.

2.3 Employer's Personnel

The Employer shall be responsible for ensuring that the Employer's Personnel and the Employer's other contractors on the Site:

- (a) co-operate with the Contractor's efforts under Sub-Clause 4.6 [Co-operation], and
- (b) take actions similar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) of Sub-Clause 4.8 [Safety Procedures] and under Sub-Clause 4.18 [Protection of the Environment].

2.4 Employer's Financial Arrangements

The Employer has sourced the funds to finance the project

2.5 Employer's Claims

If the Employer considers himself to be entitled to any payment under any Clause of these Conditions or otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Employer or the Engineer shall give notice and particulars to the Contractor. However, notice is not required for payments due under Sub-Clause 4.19 [Electricity, Water and Gas], under Sub-Clause 4.20 [Employer's Equipment and Free-Issue Material], or for other services requested by the Contractor.

The notice shall be given as soon as practicable after the Employer became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.

The particulars shall specify the Clause or other basis of the claim, and shall include substantiation of the amount and/or extension to which the Employer considers himself to be entitled in connection with the Contract. The Engineer shall then proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the amount (if any) which the Employer is entitled to be paid by the Contractor, and/or (ii) the extension (if any) of the Defects Notification Period in accordance with Sub-Clause 11.3 [Extension of Defects Notification Period].

This amount may be included as a deduction in the Contract Price and Payment Certificates. The Employer shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.

3.1 Engineer's Duties and Authority

The Employer shall appoint the Engineer who shall carry out the duties assigned to him in the Contract. The Engineer's staff shall include suitably qualified engineers and other professionals who are competent to carry out these duties.

The Engineer shall have no authority to amend the Contract.

The Engineer may exercise the authority attributable to the Engineer as specified in or necessarily to be implied from the Contract.

However, the Engineer shall obtain the specific approval of the Employer before taking action under the following Sub-Clauses of these Conditions:

- (a) Sub-Clause 4.12-Unforeseeable Physical Conditions: Agreeing or determining an extension of time and/or additional cost.
- (b) Sub-Clause 8.4-Extension of Time for Completion: Agreeing or determining extension of time.
- (c) Sub-Clause 11.9-Performance Certificate: Issue of Performance Certificate.
- (d) Sub-Clause 13.1-Instructing a Variation: Except,
 - i) in an emergency situation as determined by the Engineer and as amplified in sub-paras (h) and (i) below, or
 - ii) for other situations, if the variation in quantity of any item does not exceed 25% of the stipulated quantity in the agreement, the variation in quantity in such item does not result in increase in excess of 0.1% of contract price and variation in quantity in such item does not result in cumulative variation in contract price in excess of 2%.
- (e) Sub-Clause 13.3-Variation Procedure: Approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 13.1 or 13.2.
- (f) Sub-Clause 13.4-Payment in applicable Currencies: Specifying the amount payable in each of the applicable currencies for a Variation.
- (g) Clause 20.1: Contractor Claims for extension of time and/or additional payment.
- (h) Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Employer
- (i) In case the emergency mentioned in above Sub-paras occurs on account of failure of Contractor, by way of not adhering to the approved scheme of work or not taking adequate safety precautions or by any other reason attributable to the contractor, then no additional amounts shall be paid to the Contractor for attending to such emergencies and the Contractor shall be liable for Employer's claims.
- (j) Sub-clause 4.4 regarding deployment of Sub-Contractors.

3.2 Delegation by the Engineer

The Engineer may from time to time assign duties and delegate authority to assistants, and may also revoke such assignment or delegation. These assistants may include a resident engineer, and/or independent inspectors appointed to inspect and/or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties.

However, unless otherwise agreed by both Parties, the Engineer shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].

Assistants shall be suitably qualified persons, who are competent to carry out these duties and exercise this authority, and who are fluent in the language for communications defined in Sub-Clause 1.4 [Law and Language].

Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorised to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer. However:

- (a) any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Engineer to reject the work, Plant or Materials;
- (b) if the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Engineer, who shall promptly confirm, reverse or vary the determination or instruction.

3.3 Instructions of the Engineer

The Engineer may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under this Clause. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

The Contractor shall comply with the instructions given by the Engineer or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Engineer or a delegated assistant,

- (a) gives an oral instruction and
- (b) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and
- (c) does not reply by issuing a written rejection and/or instruction within two working days after receiving the confirmation,
- (d) then the confirmation shall constitute the written instruction of the Engineer or delegated assistant (as the case may be).

3.4 Replacement of the Engineer

Notwithstanding Sub-Clause 3.1, if the Employer intends to replace the Engineer, the Employer shall, not less than 21 days before the intended date of replacement, give notice to the Contractor of the name, address and relevant experience of the replacement Engineer.

3.5 Determinations

Whenever these Conditions provide that the Engineer shall proceed in accordance with this Sub-Clause 3.5 to agree or determine any matter, the Engineer shall consult with each Party in an endeavour to reach agreement. If agreement is not achieved, the Engineer shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.

The Engineer shall give notice to both Parties of each agreement or determination, with supporting particulars. Each Party shall give effect to each agreement or determination unless and until revised under Clause 20 [Claims, Disputes and Arbitration].

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4.1 Contractor's General Obligations

The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Engineer's instructions, and shall remedy any defects in the Works.

The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.

All equipment, and material, to be incorporated in or required for the Works shall be procured from approved sources as stipulated in the Contract.

The Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractor's Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the design or specification of the Permanent Works.

The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.

On completion of the works, the contractor shall arrange to furnish to the Employer two (2) bound sets of all "As Built" drawings for every component of the Works at his own cost, all such copies being on Polyester film of quality to be approved by the Engineer or his Representative. The Taking – over Certificate of the Works, as per the provisions of Clause 10.1 herein, shall not be issued by the Engineer in the event of the Contractor's failure to furnish the aforesaid "As Built" drawings for the entire works.

If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Special Conditions of Contract:

- (a) the Contractor shall submit to the Engineer the Contractor's Documents for this part in accordance with the procedures specified in the Contract;
- (b) these Contractor's Documents shall be in accordance with the Specification and Drawings, shall be written in the language for communications defined in Sub-Clause 1.4 [Law and Language], and shall include additional information required by the Engineer to add to the Drawings for co-ordination of each Party's designs;
- (c) the Contractor shall be responsible for this part and it shall, when the Works are completed, be fit for such purposes for which the part is intended as are specified in the Contract; and

- (d) prior to the commencement of the Tests on Completion, the Contractor shall submit to the Engineer the “as-built” documents and operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections] until these documents and manuals have been submitted to the Engineer.

4.2 Performance Security

The Contractor shall obtain (at his cost) a Performance Security and an additional Performance Security, if any in terms of ITB 35.5, for proper performance of the contract, for the amount, currencies and validity period for Performance Security stated in the Contract Data. If an amount is not stated in the Contract Data, this Sub-Clause shall not apply.

The Contractor shall deliver the Performance Security and additional Performance Security, if any, to the Employer within 28 days after receiving the Letter of Acceptance, and shall send a copy to the Engineer. The Performance Security/additional Performance Security shall be issued by an entity and from within a country (or other jurisdiction) approved by the Employer, and shall be in the form as given in Section 8 (Contract Forms) or in another form specifically approved by the Employer.

The Performance Security/additional Performance Security shall be, at the Contractor's option, in any of the following forms:

- (i) An unconditional Bank guarantee in the prescribed format
- (ii) A Pay Order / Demand Draft drawn on a Scheduled / Nationalized Bank in India in favour of “Rail Infrastructure Development Company (Karnataka) Ltd” payable at Bangalore
- (iii) FDR in favour of “Rail Infrastructure Development Company (Karnataka) Ltd.” (free from any encumbrance).
- (iv) A deposit of cash or online bank transfer to K RIDE account

The bank guarantee shall be from a bank having minimum net-worth of over INR 500 million from the specified banks as under:

- (i) a Schedule Bank in India, or
- (ii) a Foreign Bank having their operations in India, or
- (iii) a Foreign Bank which does not have operations in India is required to provide a counter-guarantee by State Bank of India,

In case the contractor is a JV; the Performance Security/additional Performance Security, if any in terms of ITB 35.5, shall be submitted by each JV Partner separately on behalf of the JV in favour of K RIDE in proportion of their respective percentage share specified in the JV Agreement. The additional Performance Security shall be submitted by the partner(s) responsible for execution of schedule(s) (as per JV agreement) against which additional Performance Security is required to be submitted in terms of ITB 35.5.

However, Submission of Performance Guarantee Security by individual partners on behalf of the JV shall in no way dilute their Joint & Several responsibility. The Employer shall be entitled to recover the amount of Bank Guarantees individually and all the Partners jointly at its discretion.”

The Contractor shall ensure that the Performance Security/additional Performance Security is valid and enforceable until the Contractor has executed and completed the Works and remedied defects, if any. If the contractor does not complete the work for any reasons whatsoever, the terms of the Performance Security/ additional Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate by the date 28 days prior to the expiry date, the Contractor shall be bound to extend the validity of the Performance Security/additional Performance Security until the Works have been completed and any defects have been remedied.

The Guarantees shall be unconditional and irrevocable. The Employer shall return the Performance Security to the Contractor within 21 days after receiving a copy of the Performance Certificate or passing of the Final Payment Certificate whichever is later. However, on completion of specified section(s) and successful passage of defect liability period for such section(s) along with execution of any leftover works at the time of completion of such section(s), the contractor shall be entitled for release of 90% of the proportionate Performance Security calculated as specified in Contract Data subject to the condition that Engineer certifies that no recoveries are pending in the contract. In case Engineer points out amount to be recovered then the contractor shall be entitled for release of 90% of the proportionate Performance Security calculated as specified in Contract Data minus the amount to be recovered.

The Employer shall return additional Performance Security submitted in terms of ITB 35.5 as per the following;

- (a) If the contractor submits an application stating that all the works against the particular schedule(s)/bill(s) for which additional Performance Security was submitted in terms of ITB 35.5 have been completed in all respect, then the Employer, on being satisfied with the claim of the contractor, shall return the full additional Performance Security against the particular schedule(s). Decision of the Employer regarding completion of works against a particular schedule/bill shall be final and binding on the contractor.
- (b) If the contractor submits an application stating that majority of the works (physical progress being not less than 90%) against the particular schedule(s)/bill(s) for which additional Performance Security was submitted in terms of ITB 35.5 have been completed and execution of balance works is held up for reasons not attributable to the Contractor, then the Employer, on being satisfied with the claim of the contractor, shall return 75% of the amount of additional Performance Security against the particular schedule(s). The balance amount of additional Performance Security shall however be returned only after completion of the works against the particular schedule(s)/bill(s) for which additional Performance Security was submitted in terms of ITB 35.5, in all respects to the satisfaction of the Employer. Decision of the Employer regarding completion of works against a particular schedule/bill shall be final and binding on the contractor.

determines an addition or a reduction to the Contract Price as a result of a change in cost and/or legislation or as a result of a Variation amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor shall at the Engineer's request promptly submit Performance Guarantee @ 10% of the increased amount over the original contract price in a specific currency. On the other hand if the value of contract price decreases by more than 25% of the original contract price payable in a specific currency, Performance Guarantee @ 10% of the decrease in contract price from the original contract price in a specific currency shall be returned to the contractor, on his request.

Wherever the contract is terminated under Clause 15.2, the Performance Guarantee shall be encashed by the Employer:

- i) in full including additional performance guarantee amount, if any, taken in terms of sub clause 35.5 of ITB and not due for release on the date of issue of termination letter in terms of this clause, in case of termination of the contract as a whole; Or
- ii) at the discretion of the Employer it may be encashed in part/parts proportionate to the Contract price of the bill/schedule to which the terminated part of work belongs i.e $P=(A \times B) \div C$ where

P=Proportionate Bank Guarantee Amount.

A=Contract price of the particular bill/schedule to which the terminated part of work belongs.

B=Performance Guarantee amount in terms of GCC sub clause 4.2.

C=Total Contract price.

Plus additional performance Guarantee amount, if any, taken in terms of sub clause 35.5 of ITB and not due for release on the date of issue of termination letter in terms of this clause against this particular bill/schedule to which the terminated part of the work belongs, in case of termination in part/parts.

The balance work should be got done separately, and independently by K RIDE without risk and cost of the original contractor. The original contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a JV or a partnership firm, then every member/partner of such a firm would be debarred from participating in the tender for the balance work either in his/her individual capacity or as a partner of any other JV/partnership firm.

In case the contractor fails to perform the contract or any JV partner fails to perform its obligations under the JV agreement, which is a part of this agreement, the Employer may issue notice of such default to the said JV partner or the JV (depending upon reasons of default) and declare the said JV partner or the JV as Poor Performer. The issue of such notice shall automatically debar the JV partner or JV, as the case may be, from participating in any K RIDE tender from the date of issue of notice of default. The relevant performance security including additional performance security, if any, in terms of sub clauses 35.5 of ITB submitted by the Contractor or submitted on behalf of JV partner to the extent not due for release at the time of contemplation of such action shall be encashed and forfeited either fully or in proportion of the percentage share of that partner in the JV agreement, as the case may be.

4.3 Contractor's Representative

The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary, including financial powers, to act on the Contractor's behalf under the Contract.

Unless the Contractor's Representative is named in the Contract, the Contractor shall, prior to the Commencement Date, submit to the Engineer for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is withheld or subsequently revoked, or if the appointed person fails to act as Contractor's Representative, the Contractor shall similarly submit the name and particulars of another suitable person for such appointment.

The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Contractor's Representative or appoint a replacement.

The whole time of the Contractor's Representative shall be given to directing the Contractor's performance of the Contract. If the Contractor's Representative is to be temporarily absent from the Site during the execution of the Works, a suitable replacement person shall be appointed, subject to the Engineer's prior consent, and the Engineer shall be notified accordingly.

The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].

The Contractor's Representative may delegate any powers, functions and authority to any competent person, and may at any time revoke the delegation. Any delegation or revocation shall not take effect until the Engineer has received prior notice signed by the Contractor's Representative, naming the person and specifying the powers, functions and authority being delegated or revoked.

The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause 1.4 [Law and Language]. If the Contractor's Representative's delegates are not fluent in the said language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.

The Contractor shall depute his Representative to attend all the review meetings notified by the Engineer

4.4 Sub-contractors

The Contractor shall not subcontract the whole of the Works. The Contractor shall be responsible for the acts or defaults of any Subcontractor, his agents or employees, as if they were the acts or defaults of the Contractor.

Unless otherwise stated in the Special Conditions of Contract:

- (a) the Contractor shall not be required to obtain consent to suppliers solely of Materials, or to a subcontract for which the Subcontractor is named in the Contract or as specifically provided in the Contract data or value of any subcontract for Works, or the aggregate value of such sub-contracts with any Subcontractor, does not exceed 5% (five per cent) of the Contract Price provided that such works are not for the key activities in terms of clause 2.6 of section 3 (Evaluation and Qualification Criteria) which are to be executed by specialist subcontractor(s);

- (b) the prior consent of the Engineer shall be obtained to other proposed Subcontractors and/or suppliers. While submitting his proposal in this regard, the Contractor shall ensure that;
 - (i) total value of Works requiring such consent for subcontracting shall not be more than 70% (seventy per cent) of the Contract Price;
 - (ii) the proposed subcontractor must have executed works of 40% of value of the proposed subcontract through a single contract during last seven years; and
 - (iii) No banning/blacklisting/declaration as poor performer by K RIDE is in force on the proposed subcontractor (on the date of grant of consent by the Engineer);
 - (iv) No contract of the proposed subcontractor has been terminated by K RIDE during the last two years (to be reckoned from the date of grant of consent by the Engineer);
 - (v) the Contractor shall submit the proposal for subcontracting with the name, particulars and the relevant experience of the proposed subcontractor;
- (c) the Contractor shall give the Engineer not less than 28 days' notice of the intended date of the commencement of each Subcontractor's work, and of the commencement of such work on the Site;
- (d) each subcontract shall include provisions which would entitle the Employer to require the subcontract to be assigned to the Employer under Sub-Clause 4.5 [Assignment of Benefit of Subcontract] (if or when applicable) or in the event of termination under Sub-Clause 15.2 [Termination by Employer]; and
- (e) On getting consent from the Engineer, the Contractor shall provide to the Engineer copy of the agreement entered with such subcontractor.

The Contractor shall ensure that the requirements imposed on the Contractor by Sub-Clause 1.12 [Confidential Details] apply equally to each Subcontractor.

Where practicable, the Contractor shall give fair and reasonable opportunity for contractors from the Country to be appointed as Subcontractors.

The Contractor shall endeavour to resolve all matters and payments amicably and speedily with the sub-contractors.

The Contractor shall indemnify and hold the Employer harmless against and from any claim of subcontractors or suppliers of the materials.

The Contractor shall release payment to the Sub-contractors/Suppliers promptly and shall endeavour to resolve all issues amicably and speedily with the Sub-contractors/Suppliers, so that the execution of work is not affected in any manner whatsoever.

In case a Sub-contractor/Supplier represents to the Engineer in writing with supporting documents, stating that he has not received payment due as per the agreement/work or purchase order for the works executed by such Sub-contractor or supplies made by such Supplier, which have been covered in previous Payment Certificates and the Engineer finds such representation having merit, the Engineer, before issuing next Payment Certificate, may forward a copy of the representation to the Contractor requesting the Contractor to supply reasonable evidence that the amount stated to be outstanding by the Sub-contractor/Supplier for the works executed or supplies made, which have been covered in previous Payment Certificates has been paid and if not, why the same is not payable. The Engineer may recommend to make payment to the Sub-contractor/Supplier unless the Contractor submits reasonable evidence to the Engineer:

- (i) that the amount claimed has been paid, or
- (ii) satisfying the Engineer in writing that the Contractor is entitled to withhold or that the amount is not payable.

On the recommendation of the Engineer, the Employer may (at his sole discretion) directly pay to the Sub-contractor/Supplier the amount due for and on behalf of the Contractor, part or all of such amounts previously certified (less applicable deductions) as are found due to the Sub-contractor/Supplier by the Engineer. The Employer shall adjust the amount paid directly to the Sub-contractor/Supplier from any amount due by it to the Contractor. The Contractor shall repay the amount, in case no amount is found due by the Employer to the Contractor.

That the payment by Employer, on behalf of the Contractor to its Sub-contractor/Supplier, shall not alter any terms of agreement between the Employer and the Contractor and nor the same shall result in any privity of contract between the Employer and the Sub-contractor/Supplier.

4.5 Assignment of Benefit of Subcontract

If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Employer, then the Contractor shall do so. Unless otherwise stated in the assignment, the Contractor shall have no liability to the Employer for the work carried out by the Subcontractor after the assignment takes effect.

4.6 Co-operation

The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:

- (a) the Employer's Personnel,
- (b) any other contractors employed by the Employer, and
- (c) the personnel of any legally constituted public authorities,

who may be employed in the execution on or near the Site of any work not included in the Contract.

Any such instruction shall constitute a Variation if and to the extent that it causes the Contractor to incur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.

If, under the Contract, the Employer is required to give to the Contractor possession of any foundation, structure, plant or means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the Engineer in the time and manner stated in the Specification.

4.7 Setting Out

The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contract or notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the works, notifying the Engineer within 28 days of the date of commencement

In the event of such discrepancy arising during the course of the work, for which Employer's documents are handed over after the date of commencement, the contractor shall seek clarifications within 14 days of receipt of such documents

The Employer shall be responsible for any errors in these specified or notified items of reference, but the Contractor shall use reasonable efforts to verify their accuracy before they are used.

Contractor shall promptly notify the Employer and the Engineer of any error, omission, fault, or any other defect in the design, drawing or specifications for the works, which he discovers when reviewing the Contract Documents, and in the process of execution of the Works. The contractor shall be responsible to ensure correlation in various drawings and bill of quantities, before commencement and execution of work. In case of any discrepancy the contractor shall bring it to notice of the Engineer for clarification within 28 days of the issue of Letter of Acceptance. In the event of such discrepancy arising during the course of the work, for which drawings are given after the date of issue of Letter of Acceptance, the contractor shall seek clarifications within 14 days of receipt of such drawings.

4.8 Safety Procedures

The Contractor shall follow the provisions laid down in (Special Conditions of Contract), Chapter 1. (Safety and Security) of Section 5 (Works/Employers Requirements) and shall:

- (a) comply with all applicable safety regulations,
- (b) take care for the safety of all persons entitled to be on the Site,
- (c) use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,
- (d) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Employer's Taking Over], and
- (e) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

Additional Safety Precautions

- (1) The Contractor shall comply with all the precautions as required for the safety of the workmen by the I.L.O Convention No.62 as far as they are applicable to the Contract. The Contractor shall provide all necessary safety appliances; such as safety goggles, helmets, masks, etc to the workmen and the staff.
- (2) Suitable scaffolds shall be provided for workmen for all work that cannot safely be done from the ground, or from solid construction except for such short period work as can be done safely from ladders. When a ladder is used, an extra labourer shall be engaged for holding the ladder and if the ladder is used for carrying

materials as well, suitable foot-holds and hand-holds shall be provided on the ladder, which shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal in 1 vertical)

- (3) Scaffolding or staging more than 3.25 metres above the ground or floor, swung or suspended from an overhead support or erected with stationary support, shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 metre high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as maybe necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying in from the support or structure.
- (4) Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally, and if the height of any platform or gangway or stairway is more than 3.25 metres above ground level or floor level, it shall have closely spaced boards, have adequate width and be suitably provided with guard rails as described in (3) above.
- (5) Every opening in the floor of a structure or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of one metre.
- (6) Safe means of access and egress shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 metres in length. The width between side rails in a rung ladder shall in no case be less than 30 cm for ladders up to and including 3 metres in length. For longer ladders the width shall be increased at least 6 mm for each additional 30 cm of length. Spacing of steps shall be uniform and shall not exceed 30 cm.
- (7) Adequate precautions shall be taken to prevent danger from electrical equipment. Adequate safety measures shall be taken when any work is undertaken near any live highly charged electric wire. Necessary shutdown may be arranged, where and whenever essential. All rules in force in this connection shall be fully complied with. The Contractor shall ensure all precautions to prevent any accidents due to electrocution or otherwise.
- (8) No materials on any of the sites shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Contractor shall provide all necessary fencing and lights to protect the public from accidents and shall be bound to bear the expenses of defending every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs which may be awarded in any such suit, action or proceedings to any such person or which may with the consent of the Contractor be paid to compromise any claim by any such person.
- (9) Excavation and Trenching : All trenches, 1.5 metres or more in depth, shall at all times be supplied with at least one ladder for each 20 metres in length or fraction thereof, Ladders shall be extended from the bottom of the trench to at least 1 metre above the surface of the ground. The sides of a trench, which is 1.5 metres or more in depth shall be stepped back to provide a suitable slope, or be securely held by timber bracing so as to avoid the danger of side collapse. Excavated material shall not be placed within 1.5 metres of the edge of any trench or half the

depth of the trench, whichever is more. Excavation shall be made from the top to the bottom. Under no circumstances shall undermining or undercutting be done.

- (10) Demolition : Before any demolition work is commenced and also during the process of the work :
- (a) All roads and open areas adjacent to the work site shall either be closed or suitably protected.
 - (b) No electric cable or apparatus, which is liable to be a source of danger other than a cable or apparatus used by operators, shall remain electrically charged:
 - (c) All practical steps shall be taken to prevent danger to persons employed by the Employer, from risk of fire or explosion, or flooding. No floor, roof or other part of a building shall be so overloaded with debris or materials as to render it unsafe.
- (11) All necessary personal safety equipment as considered adequate by the Engineer shall be available for use of persons employed on the site and maintained in a condition suitable for immediate use; and the Contractor shall take adequate steps to ensure proper use of such equipment by those concerned.
- (a) Workers employed on mixing asphaltic materials, cement, lime mortars, concrete etc. shall be provided with protective footwear and protective goggles.
 - (b) Those engaged in handling any material, which is injurious to the eyes, shall be provided with protective goggles.
 - (c) Those engaged in welding works shall be provided with welder's protective eye-shield.
 - (d) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
 - (e) When workers are employed in sewers and manhole, which are in use, the contractor shall ensure that manhole covers are open and manholes are ventilated at least for an hour before workers are allowed to go into them. Manholes so open shall be cordoned off with suitable railing and provide warning signals or boards to prevent accidents to the public.
- (12) The Contractor shall not employ men below the age of 18 years and women, on the work of painting with products containing lead in any form. Whenever men above the age of 18 years are employed on the work of lead painting, the following precautions shall be taken:
- (a) No paint containing lead or lead products shall be used except in the form of paste or ready made paint.

- (b) Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scrapped.
 - (c) Overalls shall be supplied by the Contractor to workmen and adequate facilities shall be provided to enable workers to wash during and at the close of any day's work.
- 13) When work is performed near any place where there is risk of drowning all necessary equipment shall be provided and kept ready for use and all necessary steps taken for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
- (14) Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following:
- (a) (i) These shall be of good mechanical construction, sound material and adequate strength and free from patent defects and shall be kept in good working order, be regularly inspected and properly maintained.
 - (ii) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from defects
 - (b) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 shall be in charge of any hoisting machine including scaffold equipment. Only trained men over the age of 21 shall be permitted to give signals to such plant and appliance operators.
 - (c) For every hoisting machine and every chain hook, shackle, swivel and pulley block used in hoisting, lowering or as means of suspension, safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with safe working load. In case of a hoisting machine or a variable safe working load, each safe working load and conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to in the paragraph above shall be loaded beyond safe working load except for the purpose of testing.
 - (d) In case of the Employer's machine, safe working load shall be notified by the Engineer or his Representative. As regards Contractor's machines, the Contractor shall notify safe working load of each machine to the Engineer or his Representative, whenever he brings it to the site of work and get it verified by him.

- (15) Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards; hoisting appliances shall be provided with such means as will reduce the risk of accident during descent of load to the minimum. Adequate precautions shall be taken to reduce to the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energised, insulating mats, working apparel such as gloves, sleeves and boots, as may be necessary, shall be provided. Workers shall not wear any rings, watches and carry keys or other materials which are good conductor of electricity.
- (16) All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.
- (17) These safety provisions shall be brought to the notice of all concerned by displaying on a notice board at a prominent place at the work location. Persons responsible for ensuring compliance with the Safety Code shall be named therein by the Contractor.
- (18) To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the contractor shall be open to inspection by the Engineer or his Representative.
- (19) Notwithstanding anything contained in conditions (1) to (17) above, the Contractor shall at its own costs, remain liable to comply with the provisions of all acts, rules, regulations, and bylaws for the time being in force in India and applicable in this matter.
- (20) For work carried out in the vicinity of any wharf or quay, the Contractor shall abide by all the provisions of the Dock Workers (Safety, Health and Welfare) Scheme, 1961.
- (21) The Contractor shall at his own expense provide protective safety Equipment like gloves and footwear for all labour engaged on concrete mixing work and all other types of working involving the use of tar, cement, etc. to the satisfaction of the Engineer or his Representative, and on his failure to do so, the employer shall be entitled to provide the same and recover the cost from the Contractor.
- (22) The Contractor shall be responsible for observance, by the sub-contractors, of the foregoing provisions.
- (23) All construction labour at all time shall use personal protective equipment like, safety shoes, helmets and reflective jackets in all activities at site. This shall be ensured without fail on each work site. Failing to comply with this, provision shall attract penalty of Rs. 500/- per occasion per staff.

4.8.1 Notwithstanding with any other provision, the Contractor shall have to pay penalty for damage to Railway cable in terms of clause C 15 of the JPO as given in para 1.2 of Chapter 1. (Safety and Security) of Section 5 (Works/Employers Requirements) and shall also indemnify the Employer against any losses, damages to property or life in terms of para 1.11 and 1.12 of the chapter 1. (Safety and Security) of Section 5 (Works/Employers Requirements).

4.9 Quality Assurance

The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The system shall be in accordance with the details stated in the Contract. The Engineer shall be entitled to audit any aspect of the system.

Details of all procedures and compliance documents shall be submitted to the Engineer for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor himself shall be apparent on the document itself.

Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.

4.10 Site Data

The Employer shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Employer's possession on sub-surface and hydrological conditions at the Site, including environmental aspects. The Employer shall similarly make available to the Contractor all such data which come into the Employer's possession after the Base Date. The Contractor shall be responsible for interpreting all such data.

To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Bid or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Bid as to all relevant matters, including (without limitation):

- (a) the form and nature of the Site, including sub-surface conditions,
- (b) the hydrological and climatic conditions,
- (c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
- (d) the Laws, procedures and labour practices of the Country, and
- (e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.
- (f) Data made available by the Employer in accordance with the preceding paragraph shall be deemed to include data listed elsewhere in the contract as open for inspection at the address stipulated in the Contract.

4.11 Sufficiency of the Accepted Contract Amount

The Contractor shall be deemed to:

- (a) have satisfied himself as to the correctness and sufficiency of the Accepted Contract Amount, and
- (b) have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in Sub-Clause 4.10 [Site Data].

Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums, if any) and all things necessary for the proper execution and completion of the Works and the remedying of any defects.

4.12 Unforeseeable Physical Conditions

In this Sub-Clause, "physical conditions" means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.

If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Engineer as soon as practicable.

This notice shall describe the physical conditions, so that they can be inspected by the Engineer, and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the Engineer may give. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving such notice and inspecting and/or investigating these physical conditions, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent these physical conditions were Unforeseeable, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.

However, before additional Cost is finally agreed or determined under sub-paragraph (ii), the Engineer may also review whether other physical conditions in similar parts of the Works (if any) were more favourable than could reasonably have been foreseen when the Contractor submitted the Bid. If and to the extent that these more favourable conditions were encountered, the Engineer may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the reductions in Cost which were due to these conditions, which may be included (as deductions) in the Contract Price and Payment

Certificates. However, the net effect of all adjustments under sub-paragraph (b) and all these reductions, for all the physical conditions encountered in similar parts of the Works, shall not result in a net reduction in the Contract Price.

The Engineer may take account of any evidence of the physical conditions foreseen by the Contractor when submitting the Bid, which may be made available by the Contractor, but shall not be bound by any such evidence.

4.13 Rights of Way and Facilities

The Contractor shall bear all costs and charges for special and/or temporary rights-of-way which he may require, including those for access to the Site. The Contractor shall also obtain, at his risk and cost, any additional facilities outside the Site which he may require for the purposes of the Works.

In case any operation connected with traffic necessitates diversion, obstruction or closure of any road, railway or any other right of way, the approval of the Engineer and the concerned authorities shall be obtained well in advance by the Contractor.

Provided that if it is found necessary for the Contractor to move one or more loads of heavy constructional plants and equipment, materials or Pre-constructed units or parts of units of work over roads, highways, bridges on which such oversized and overweight items that are not normally to be moved, the contractor shall obtain prior permission from the concerned authorities.

Payments for complying with the requirements, if any, for protection or strengthening of the roads, highways or bridges shall be made by the contractor and such expenses shall be deemed to be included in his quoted contract price.

4.14 Avoidance of Interference

The Contractor shall not interfere unnecessarily or improperly with:

- (a) the convenience of the public, or
- (b) the access to and use and occupation of all roads and footpaths, irrespective of whether they are public or in the possession of the Employer or of others or
- (c) Passenger amenities at stations and station platforms.

The Contractor shall indemnify and hold the Employer harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.

4.15 Access Route

The Contractor shall be deemed to have been satisfied as to the suitability and availability of access routes to the Site. The Contractor shall use reasonable efforts to prevent any road or bridge from being damaged by the Contractor's traffic or by the Contractor's Personnel. These efforts shall include the proper use of appropriate vehicles and routes.

Except as otherwise stated in these Conditions:

- (a) the Contractor shall (as between the Parties) be responsible for any maintenance which may be required for his use of access routes;
- (b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may be required from the relevant authorities for his use of routes, signs and directions;

- (c) the Employer shall not be responsible for any claims which may arise from the use or otherwise of any access route;
- (d) the Employer does not guarantee the suitability or availability of particular access routes; and
- (e) Costs due to non-suitability or non-availability, for the use required by the Contractor, of access routes shall be borne by the Contractor.

4.16 Transport of Goods

Unless otherwise stated in the Special Conditions of Contract:

- (a) the Contractor shall give the Engineer not less than 21 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site;
- (b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and
- (c) the Contractor shall indemnify and hold the Employer harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from the transport of Goods, and shall negotiate and pay all claims arising from their transport.

4.17 Contractor's Equipment

The Contractor shall be responsible for all Contractors' Equipment. When brought on to the Site, Contractor's Equipment shall be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any major items of Contractor's Equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.

In the event of Contractor imports any equipment the following shall apply"

- (a) **Custom Clearance:** The Employer will assist the contractor, when required by furnishing letters of recommendation for obtaining expeditious clearance through customs of constructional plants, material and other things required for the works and then for re-export, if any. The following publications, may be referred to by the contractor for guidance about custom regulations etc :

- (i) Import & export policy, together with amendments, if any, published by Govt. of India, Ministry of Commerce..
- (j) Hand Book of Procedures, together with amendments, if any, Volume 1 and 2 published by Ministry of Commerce.
- (iii) Customs Tariff, together with amendments, if any published by Central Customs.

The Contractor shall be responsible to follow the latest rules and regulations without any liability of the Employer.

- (c) **Re-export of contractors equipment:** The contractor shall obtain all the relevant information regarding procedure for the import and subsequent re-export of his equipment and materials from the Chief Controller of Imports and Exports, Bangalore, and shall inform himself and keep himself informed on the details of

custom charges and draw-back regulations as applicable to the items of Constructional plant. The contractor shall provide the necessary guarantee/bonds where these are required by the customs notwithstanding that import licenses may be granted in the name of Employer.

- (c) Notwithstanding the provisions mentioned above, Contractor's Equipment, including essential spare parts therefore, imported by the Contractor for the sole purpose of executing the Contract shall be temporarily exempt from the payment of import duties and taxes upon initial importation, provided the Contractor shall post with the customs authorities at the port of entry an approved export bond or bank guarantee, valid until the Time for Completion plus six months, in an amount equal to the full import duties and taxes which would be payable on the assessed imported value of such Contractor's Equipment and spare parts, and **callable** in the event the Contractor's Equipment is not exported from the Country on completion of the Contract. A copy of the **bond** or bank guarantee endorsed by the custom authorities shall be provided by the Contractor to the Employer upon the importation of individual items of Contractor's Equipment and spare parts. Upon export of individual items of Contractor's Equipment or spare parts, or upon the completion of the Contract, Contractor shall prepare for approval by the customs authority the authorities, an assessment of the residual value of the Contractor's Equipment and spare parts to be exported based on the depreciation scale(s) and other criteria used by the customs authorities for such purposes under the provisions of the applicable Laws. Import duties and taxes shall be due and payable to the customs authorities by the Contractor on (a) the difference between the initial imported value and the residual value of the contractor's equipment and spare parts to be exported and (b) on the initial imported value that contractor's equipment and spare parts remaining in the Country after completion of the Contract. Upon payment of such dues within 28 days of being invoiced, the bond or bank guarantee shall be reduced or released accordingly; otherwise the security shall be called in the full amount remaining in the Country.
- (d) **Conditions of hire of the contractor's equipment:** A certified copy of the agreement in respect of any item of Equipment held by contractor under any agreement for hire or hire purchase thereof, shall be supplied to the Engineer/Employer."

4.18 Protection of the Environment

The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

The Contractor shall ensure that emissions, surface discharges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.

4.19 Electricity, Water and Gas

The Contractor shall, except as stated below, be responsible for the provision of all power, water and other services he may require.

The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which

details and prices are given in the Specification. The Contractor shall, at his risk and cost, provide any apparatus necessary for his use of these services and for measuring the quantities consumed.

The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Engineer in accordance with Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Employer.

4.20 Employer's, Equipment and Free-Issue Material

The Employer shall make the Employer's Equipment (if any) available for the use of the Contractor in the execution of the Works in accordance with the details, arrangements and prices stated in the Specification. Unless otherwise stated in the Specification:

- (a) the Employer shall be responsible for the Employer's Equipment, except that
- (b) the Contractor shall be responsible for each item of Employer's Equipment whilst any of the Contractor's Personnel is operating it, driving it, directing it or in possession or control of it.

The appropriate quantities and the amounts due (at such stated prices) for the use of Employer's Equipment shall be agreed or determined by the Engineer in accordance with Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Employer.

The Employer shall supply, free of charge, the "free-issue materials" (if any) in accordance with the details stated in the Contract data.

The Employer shall, at his risk and cost, provide these materials at the time and place specified in the Contract. The Contractor shall then visually inspect them, and shall promptly give notice to the Engineer of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Employer shall immediately rectify the notified shortage, defect or default.

In case materials are handed over, in accordance with the procedure prescribed by the Engineer, after proper measurement and accounted for, the contractor shall be solely liable for any shortage, damage, defect or default in such material, and shall indemnify the Employer until the final account of materials is made by the Contractor on completion of the work.

4.21 Progress Reports

Unless otherwise stated in the Special Conditions of Contract, monthly progress reports shall be prepared by the Contractor and submitted to the Engineer in six copies. The first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.

Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.

Each report shall include:

- i. charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),
photographs showing the status of manufacture and of progress on the Site; for the

manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:

- (i) commencement of manufacture,
- (ii) Contractor's inspections,
- (iii) tests, and
- (iv) shipment and arrival at the Site;

the details described in Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment];

copies of quality assurance documents, test results and certificates of Materials;

list of notices given under Sub-Clause 2.5 [Employer's Claims] and notices given under Sub-Clause 20.1 [Contractor's Claims];

safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and

comparisons of actual and planned progress of all activities, with details of any events or circumstances which may jeopardise the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

4.22 Security of the Site

Unless otherwise stated in the Special Conditions of Contract:

- (a) the Contractor shall be responsible for keeping unauthorised persons off the Site, and
- (b) authorised persons shall be limited to the Contractor's Personnel and the Employer's Personnel; and to any other personnel notified to the Contractor, by the Employer or the Engineer, as authorised personnel of the Employer's other contractors on the Site.

4.23 Contractor's Operations on Site

The Contractor shall confine his operations to the Site, and to any additional areas which may be obtained by the Contractor and agreed by the Engineer as working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacent land.

During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction, and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required.

Upon the issue of a Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which the Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works. The Contractor shall leave that part of the Site and the Works in a clean and safe condition.

However, the Contractor may retain on Site, during the Defects Notification Period, such Goods as are required for the Contractor to fulfill obligations under the Contract.

4.24 Fossils

All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Employer. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.

The Contractor shall, upon discovery of any such finding, promptly give notice to the Engineer, who shall issue instructions for dealing with it. If the Contractor suffers delay and/or incurs Cost from complying with the instructions, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

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5.1 Definition of nominated Subcontractor

In the Contract, “nominated Subcontractor” means a Subcontractor:

- (a) who is stated in the Contract as being a nominated Subcontractor, or
- (b) whom the Engineer, under Clause 13 [Variations and Adjustments], instructs the Contractor to employ as a Subcontractor.

5.2 Objection to Nomination

The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Engineer as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Employer agrees to indemnify the Contractor against and from the consequences of the matter:

- (a) there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;
- (b) the subcontract does not specify that the nominated Subcontractor shall indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or
- (c) the subcontract does not specify that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:
 - (i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge his obligations and liabilities under the Contract, and
 - (ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfil these liabilities.

5.3 Payments to nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts which the Engineer certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-Clause 13.5 [Provisional Sums], except as stated in Sub-Clause 5.4 [Evidence of Payments].

5.4 Evidence of Payments

Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Engineer may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received (Within 7 days of receipt of previous payment by the contractor) all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

- (a) submits this reasonable evidence to the Engineer, or
- (b)
 - (i) satisfies the Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and
 - (ii) submits to the Engineer reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement,

then the Employer may (at his sole discretion) pay, direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Employer, the amount which the nominated Subcontractor was directly paid by the Employer.

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6.1 Engagement of Staff and Labour

Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labour, local or otherwise, and for their payment, housing, feeding and transport.

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within the Country.

6.2 Rates of Wages and Conditions of Labour

The Contractor shall pay rates of wages, and observe conditions of labour, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by employers whose trade or industry is similar to that of the Contractor.

If the Employer is obliged to provide amenities or arrange payment of wages to contract labour employed by the contractor either directly or through sub contractor under the contract on account of failures on the part the contractor to provide the amenities and / or arrange payment of wages to the contract labour as required of him under the provision of the said act / rules made there under, the Engineer/Employer shall be at liberty without prejudice to the rights of Engineer/Employer under Section 20(2) and 21(4) of the contract labour (Regulation and Abolition) Act 1970 to recover the whole or part of the expenditure so incurred on the wages so paid by the Engineer/Employer/Railway from the security deposit and/or from any sum or sums due to the contractor whether under this contract or any other contract.

The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances, and any benefits as are subject to taxes under the Laws of the Country for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there-under, regulation or notifications including amendment. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/ regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the contractor including his amount of performance security. The Employer/Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

The Contractor shall duly comply with the provisions of the Apprentices Act 1961 (III of 1961), the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so he shall be subject to all liabilities provide by the said Act and said Rules.

The Contractor and his Sub Contractors shall comply with all applicable Labour Laws, and should not employ Child Labour for construction and maintenance activities. The Contractor shall provide appropriate facilities for children in Construction Camp sites.

The Contractors shall not differentiate wages between men and women for work of equal value.

6.3 Persons in the Service of Employer

The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst persons in the service of the Employer or the Engineer.

6.4 Labour Laws

The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration, and emigration, and shall allow them all their legal rights. The contractor and his sub-contractors shall be responsible to ensure at his own cost, compliance to all laws, bye-laws, rules and regulations for the time being in force pertaining to the employment of local or imported labour and shall take all necessary precautions to ensure and preserve the health and safety of all staff employed directly or through sub-contractors or petty contractors on the works which shall include all the acts listed in Appendix – 1 but not limited to the same.

The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.

During continuance of the Contract, the Contractor and his Sub-Contractors shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notifications and bye laws of the State or Central government or local authority and any other labour laws (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws hat are applicable to construction industry are given in Appendix 1 to these Conditions of Contract.

6.5 Working Hours

No work shall be carried out on the Site on locally recognised days of rest, or outside the normal working hours stated in the Contract Data, unless:

- (a) otherwise stated in the Contract,

- (b) the Engineer gives consent, or
- (c) the work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer.

6.6 Facilities for Staff and Labour

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. The Contractor shall also provide facilities for the Employer's Personnel as stated in the Specification.

The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

6.7 Health and Safety

The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and a standing arrangement for ambulance service are available at a phone call at all times at the Site and at any accommodation for Contractor's and Employer's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities, for the purpose of dealing with and overcoming the same. The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence.

HIV-AIDS Prevention. The Contractor shall conduct an HIV-AIDS awareness programme via an approved service provider, and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals.

Epidemics

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities, for the purpose of dealing with and overcoming the same.

Records of Safety and Health

The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

Submission of Returns: :

The contractor shall be responsible for timely submission of all returns and statements to the concerned authorities in full compliance of all rules, bye-laws and regulations for the time being in force.

The Contractor shall throughout the contract (including the Defects Notification Period): (i) conduct Information, Education and Consultation Communication (IEC) campaigns, at least every other month, addressed to all the Site staff and labor (including all the Contractor's employees, all Sub-Contractors and Consultants' employees, and all truck drivers and crew making deliveries to Site for construction activities) and to the immediate local communities, concerning the risks, dangers and impact, and appropriate avoidance behavior with respect to of Sexually Transmitted Diseases (STD)—or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular; (ii) provide male or female condoms for all Site staff and labor as appropriate; and (iii) provide for STI and HIV/AIDS screening, diagnosis, counseling and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and labor.

The Contractor shall include in the program to be submitted for the execution of the Works under Sub-Clause 8.3 an alleviation program for Site staff and labour and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation program shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the program shall detail the resources to be provided or utilized and any related sub-contracting proposed. The program shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation this program shall not exceed the Provisional Sum dedicated for this purpose.

6.8 Contractor's Superintendence

Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.

Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and

Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.

The Contractor shall employ the key personnel named in the Schedule of Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

The Contractor shall not employ any retired government Gazetted officer, who has either not completed one year after the date of retirement, or has not obtained permission to employment with the Contractor.

6.9 Contractor's Personnel

The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:

- (a) persists in any misconduct or lack of care,
- (b) carries out duties incompetently or negligently,
- (c) fails to conform with any provisions of the Contract, or
- (d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment.

If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons, the Contractor shall ensure that the person leaves the Site within seven (7) days and has no further connection with the work in the Contract. The replacement person shall be appointed within fourteen (14) days of the notification by the Engineer.

A reasonable proportion of the Contractor's Superintending Staff shall have a working knowledge of the English language or the Contractor shall have available on site at all times a sufficient number of competent interpreters to ensure the proper transmission of instructions and information. If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

6.10 Records of Contractor's Personnel and Equipment

The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.

6.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.

6.12 Foreign Personnel

The Contractor may bring in to the country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence visas and work

permits. The Employer will, without any financial liability, if requested by the Contractor, use his best endeavours in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national, or government permission required for bringing in the Contractor's personnel.

The Contractor shall be responsible for the return of these personnel to the place where they were recruited or to their domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial. Contractor shall also be responsible for any legal liabilities during their stay.

6.13 Supply of Foodstuffs

The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.

6.14 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.

6.15 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce their danger to health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

The Contractor shall provide his staff and labour with suitable prophylactics for the prevention of malaria, and take steps to prevent the formation of stagnant pools of water. He shall comply with all the regulations of the local health authorities in these respects and shall in particular arrange to spray thoroughly with approved insecticides all buildings erected on the site such treatment shall be carried out at least once a year or as instructed by the Engineer. The Contractor shall warn his staff and labour of the dangers of diseases like Malaria, Filaria and other contagious diseases etc. and also Scorpions, Snakes, Wild animals etc. and preventive actions required to be taken by the labour and staff.

6.16 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift barter or disposal thereto by Contractor's Personnel.

6.17 Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.

6.18 Festivals and Religious Customs

The Contractor shall respect the Country's recognized festivals, days of rest and religious or other customs.

6.19 Funeral Arrangements

The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of his local employees who may die while engaged upon the Works.

6.20 Prohibition of Forced or Compulsory Labour

The contractor shall not employ "forced or compulsory labour" in any form. "Forced or compulsory labour" consists of all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

6.21 Prohibition of Harmful Child Labour

The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

6.22 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and shall be available for inspection by the Engineer during normal working hours. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment].

- (j) In addition to the above, the Contractor shall register his firm/company etc. on website 'www.shramikkalyan.indianrailways.gov.in' and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation on Portal shall be done as under:
 - (a) Contractor shall apply for onetime registration of his company/firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of Letter of Acceptance. Employer/Engineer shall approve the contractor's registration in the portal within 7 days of receipt of such request.
 - (b) Contractor once approved by any Employer/Engineer, can create password with login ID (PAN No.) for subsequent use of portal for all LoAs issued in his favour.
 - (c) The contractor once registered on the portal, shall provide details of his Letter of Acceptances (LoA) / Contract Agreements on shramikkalyan portal within 15 days of issue of any LoA for approval of concerned Employer/Engineer. Employer/Engineer shall update (if required) and approve the details of LoA filled by contractor within 7 days of receipt of such request.

- (d) After approval of LoA by Employer/Engineer, contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on shramikkalyan portal on monthly basis.
- (e) It shall be mandatory upon the contractor to ensure correct and prompt uploading of all salient details of engaged contractual labour & payments made thereof after each wage period.
- (ii) While processing payment of any 'Interim Payment Certificate' or 'Final Payment Certificate' or release of 'Advances' or 'Performance Guarantee / Security deposit', contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at 'www.shramikkalyan.indianrailways.gov.in' till ____Month, ____Year."

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7.1 Manner of Execution

The Contractor shall carry out the manufacture of Plant, the production and manufacture of Materials, and all other execution of the Works:

- (a) in the manner (if any) specified in the Contract,
- (b) in a proper workmanlike and careful manner, in accordance with recognised good practice, and
- (c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.

7.2 Samples

The Contractor shall submit the following samples of Materials, and relevant information, to the Engineer for consent prior to using the Materials in or for the Works:

- (a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and
- (b) additional samples instructed by the Engineer as a Variation.

Each sample shall be labelled as to origin and intended use in the Works.

7.3 Inspection

The Employer's Personnel shall at all reasonable times:

- (a) have full access to all parts of the Site and to all places from which natural Materials are being obtained, and
- (b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials.

The Contractor shall give the Employer's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.

The Contractor shall give notice to the Engineer whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Engineer shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Engineer does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, uncover the work and thereafter reinstate and make good, all at the Contractor's cost.

7.4 Testing

This Sub-Clause shall apply to all tests specified in the Contract, other than the Tests after Completion (if any).

The Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labour, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Engineer, the time and place for the specified testing of any Plant, Materials and other parts of the Works.

The Engineer may, under Clause 13 [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, notwithstanding other provisions of the Contract.

The Engineer shall give the Contractor not less than 24 hours' notice of the Engineer's intention to attend the tests. If the Engineer does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Engineer, and the tests shall then be deemed to have been made in the Engineer's presence.

If the Contractor suffers delay and/or incurs Cost from complying with these instructions or as a result of a delay for which the Employer is responsible, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

The Contractor shall promptly forward to the Engineer duly certified reports of the tests. When the specified tests have been passed, the Engineer shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Engineer has not attended the tests, he shall be deemed to have accepted the readings as accurate.

7.5 Rejection

If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract, the Engineer may reject the Plant, Materials or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.

If the Engineer requires this Plant, Materials or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Employer to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay these costs to the Employer.

7.6 Remedial Work

Notwithstanding any previous test or certification, the Engineer may instruct the Contractor to:

- (a) remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,
- (b) remove and re-execute any other work which is not in accordance with the Contract, and
- (c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.

The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).

If the Contractor fails to comply with the instruction, the Employer shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay to the Employer all costs arising from this failure.

7.7 Ownership of Plant and Materials

Each item of Plant and Materials shall, to the extent consistent with the Laws of the Country, become the property of the Employer at whichever is the earlier of the following times, free from liens and other encumbrances:

- (a) when it is delivered to the Site;
- (b) when the Contractor is entitled to payment of the value of the Plant and Materials under Sub-Clause 8.10 [Payment for Plant and Materials in Event of Suspension].

Unless otherwise stated in the Specification, the Contractor shall pay all royalties, rents and other payments for:

- (a) natural Materials obtained from outside the Site, and
- (b) the disposal of material from demolitions and excavations and of other surplus material (whether natural or man-made), except to the extent that disposal areas within the Site are specified in the Contract.

8	Commencement, Delay and Suspension
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8.1 Commencement of Works

The Engineer shall give the Contractor not less than 7 days' notice of the Commencement Date. Unless otherwise stated in the Special Conditions of Contract, the Commencement Date shall be within the number of days after the Contractor receives the Letter of Acceptance as specified in Contract Data.

The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date, and shall then proceed with the Works with due expedition and without delay.

8.2 Time for Completion

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:

- (a) achieving the passing of the Tests on Completion, and
- (b) completing all work which is stated in the Contract as being required for whole of the Works or Section(s) to be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections].
- (c) The date of completion for works described in this sub-clause, shall be the earliest of the following :
 - (i) The date CRS recommends opening of the Section(s) for public carriage of passengers to Central Government, for speeds of not less than 75% of the designed operating speeds or,
 - (ii) The date CRS authorises the Railway Administration for opening of Section(s), subject to sanction of the Central Government for speeds of not less than 75% of the designed operating speeds, or,
 - (iii) The date CRS authorizes/sanctions opening of Section(s) without inspection.

8.3 Programme

The Contractor shall submit a detailed time programme to the Engineer within 28 days after receiving the notice under Sub-Clause 8.1 [Commencement of Works]. The program shall include the physical and Financial Progress vis-à-vis program and forecast cash flow adopting Project Management Software Primavera/Sure Track/MS Project or as mutually agreed. The program must identify the milestones, interface requirements and program reporting elements. The Contractor shall supply, free of cost one set of authorized software to the Engineer and the soft copy of structured program for the project. This shall be updated every month. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations. Each programme shall include:

- (a) the order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing,
- (b) each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),
- (c) the sequence and timing of inspections and tests specified in the Contract, and
- (d) a supporting report which includes:
 - (i) a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and
 - (ii) details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage.

Unless the Engineer, within 21 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Employer's Personnel shall be entitled to rely upon the programme when planning their activities.

The Contractor shall promptly give notice to the Engineer of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works. The Engineer may require the Contractor to submit an estimate of the anticipated effect of the future event or circumstances, and/or a proposal under Sub-Clause 13.3 [Variation Procedure].

If, at any time, the Engineer gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Engineer within 15 days in accordance with this Sub-Clause.

8.4 Extension of Time for Completion

The Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking-Over of the Works and Sections] is or will be delayed by any of the following causes:

- (a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,
- (b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,
- (c) exceptionally adverse climatic conditions,
- (d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or
- (e) any delay, impediment or prevention caused by or attributable to the Employer, the Employer's Personnel, or the Employer's other contractors.

If the Contractor considers himself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Engineer in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Engineer shall review previous determinations and may increase, but shall not decrease, the total extension of time.

8.5 Delays Caused by Authorities

If the following conditions apply, namely:

- (a) the Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities in the Country,
- (b) these authorities delay or disrupt the Contractor's work, and
- (c) the delay or disruption was Unforeseeable,

then this delay or disruption will be considered as a cause of delay under sub-paragraph (b) of Sub-Clause 8.4 [Extension of Time for Completion].

8.6 Rate of Progress

If, at any time:

- (a) actual progress is too slow to complete within the Time for Completion, and/or
- (b) progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme],

other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time for Completion], then the Engineer may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.

Unless the Engineer notifies otherwise, the Contractor shall adopt these revised methods, which may require increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods, at the risk and cost of the Contractor. If these revised methods cause the Employer to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay these costs to the Employer, in addition to delay damages (if any) under Sub-Clause 8.7 below.

8.7 Extension of Time for Completion with Delay Damages

If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion for entire work or for specified section wise completion period], and he is not entitled to an extension of time under sub clause 8.4 then the employer may grant extension of time with delay damage in such case, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay delay damages to the Employer for this default. These delay damages shall be the sum stated in the Contract Data, which shall be paid for every day which shall elapse between the relevant Time for Completion and the date stated in the Taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Contract Data.

Further, if the contractor fails to achieve physical/financial targets as per the agreed programme for a consecutive period of 3 months without any valid reasons, other than attributable to the contractor, a provisional recovery of delay damages shall be made from the next interim payment certificate @ 1/10th of the sum of delay damages stated in the contract data, for the entire period of 3 months. Such recovery shall continue from the further interim payment certificates till the contractor is able to make good the shortfall and achieve the cumulative targets as per agreed programme. On achieving the cumulative progress targets as per agreed programme, the entire amount recovered till that month, shall be refunded to the contractor in the next interim payment certificate. In case the contractor is unable to make good the shortfall and achieve the cumulative targets resulting in delay in completion of the project, then the provisional recoveries made shall be adjusted against the delay damages to be finally imposed on the contractor.

These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 15.2 [Termination by Employer] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

8.8 Suspension of Work

The Engineer may at any time instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.

The Engineer may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 8.9, 8.10 and 8.11 shall not apply.

8.9 Consequences of Suspension

If the Contractor suffers delay and/or incurs Cost from complying with the Engineer's instructions under Sub-Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub-Clause 8.8 [Suspension of Work].

8.10 Payment for Plant and Materials in Event of Suspension

The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/or Materials, if:

- (a) the work on Plant or delivery of Plant and/or Materials has been suspended for more than 28 days,
- (b) the Contractor has marked the Plant and/or Materials as the Employer's property in accordance with the Engineer's instructions, and
- (c) Such materials or plant is received at site.

8.11 Prolonged Suspension

If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Engineer's permission to proceed. If the Engineer does not give permission within 28 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2 [Termination by Contractor].

8.12 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Engineer shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension.

8.13 Bonus for early completion:

If the Contractor achieves completion of the whole of the Works or any section(s) prior to the intended Completion Date prescribed in Contract data (Extension of time pursuant to Clause 8.4 or any other clause of these conditions will not be considered), the Employer shall pay to the Contractor a sum stated in the Contract data as bonus for early completion, for every calendar month which shall elapse between the date of completion of all items of works as stipulated in the contract, including variations ordered by the Engineer and the time prescribed in Clause 8.2. However, on handing over of the particular section for construction of OHE foundations after completing formation, turfing, side drains & protection works for the section excluding station yards but including buildings required for commissioning of the section, the section shall be considered to be substantially completed for the purposes of first stage bonus payment.

If General Manager of the Zonal Railway has signed application for opening of the section(s), such section(s) shall be treated as substantially completed on the date 45 days after the date of signing the application for the purposes of second stage bonus under this clause subject to the conditions that: -

- a) In case the CRS has authorized the opening of the section(s) within 45 days from the date of signing the application, then date of authorization shall be the date of completion.

- b) In case the CRS has not authorized opening of the section(s) after having come for inspection within 45 days from the date of signing the application, then the section(s) shall not be treated as substantially completed for the purposes of bonus under this clause.

For the purpose of calculating bonus payments, the time given in the Bid for completion of the whole works or any section(s) is fixed and unless otherwise agreed, no adjustment of the time by reasons of granting an extension of time pursuant to clause 8.4 or any other

clause of these conditions will be allowed. Any period falling short of completed month shall be ignored for the purpose of computing the period relevant for the payment of bonus.

If the Contractor achieves completion of the whole of the Works or any section(s) prior to the intended Completion Date prescribed in Contract data (Extension of time pursuant to Clause 8.4 or any other clause of these conditions will not be considered), the Employer shall pay to the Contractor a sum stated in the Contract data as bonus for early completion, for every calendar month which shall elapse between the date of completion of all items of works as stipulated in the contract, including variations ordered by the Engineer and the time prescribed in Clause 8.2. However, on completion of all PSC girder/slab bridges including protection works and successful passing of load testing but excluding linking of track, and on completion of all steel girder bridges, if any, including protection works but excluding load testing and linking of track on steel girder bridges, the section shall be considered to be substantially completed for the purposes of bonus payment under this clause. In case the particular section involves construction of steel bridges, the payment of bonus shall only be done on successful passing of load testing of steel bridges but the bonus is to be calculated from the date of substantial completion as defined above.

For the purpose of calculating bonus payments, the time given in the Bid for completion of the whole works or any section(s) is fixed and unless otherwise agreed, no adjustment of the time by reasons of granting an extension of time pursuant to clause 8.4 or any other clause of these conditions will be allowed. Any period falling short of completed month shall be ignored for the purpose of computing the period relevant for the payment of bonus.

9.1 Contractor's Obligations

The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [Testing], after providing the documents in accordance with subparagraph (d) of Sub-Clause 4.1 [Contractor's General Obligations].

The Contractor shall give to the Engineer not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Engineer shall instruct.

In considering the results of the Tests on Completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the results of these Tests to the Engineer.

9.2 Delayed Tests

If the Tests on Completion are being unduly delayed by the Employer, Sub-Clause 7.4 [Testing] (fifth paragraph) and/or Sub-Clause 10.3 [Interference with Tests on Completion] shall be applicable.

If the Tests on Completion are being unduly delayed by the Contractor, the Engineer may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Tests on such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

If the Contractor fails to carry out the Tests on Completion within the period of 21 days, the Employer's Personnel may proceed with the Tests at the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

9.3 Retesting

If the Works, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.5 [Rejection] shall apply, and the Engineer or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions.

9.4 Failure to Pass Tests on Completion

If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3 [Retesting], the Engineer shall be entitled to:

- (a) order further repetition of Tests on Completion under Sub-Clause 9.3;
- (b) if the failure deprives the Employer of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the

Employer shall have the same remedies as are provided in sub-paragraph (c) of Sub-Clause 11.4 [Failure to Remedy Defects]; or

- (c) issue a Taking-Over Certificate, if the Employer so requests.

In the event of sub-paragraph (c), the Contractor shall proceed in accordance with all other obligations under the Contract, and the Contract Price shall be reduced by such amount as shall be appropriate to cover the reduced value to the Employer as a result of this failure. Unless the relevant reduction for this failure is stated (or its method of calculation is defined) in the Contract, the Employer may require the reduction to be (i) agreed by both Parties (in full satisfaction of this failure only) and paid before this Taking-Over Certificate is issued, or (ii) determined and paid under Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations].

9.5 Contractor's obligations

Notwithstanding the provisions of sub-clauses 4.1, 9.1 to 9.4 the provisions in subsequent sub-clauses shall apply for works of Permanent Way, signaling and telecommunication and railway electrification excluding General Electrical Services.

- (a) The Contractor shall be responsible for the execution of temporary and/or permanent works which may require the prior sanction/approval of Commissioner of Railway Safety (CRS) in accordance with extant rules for "The Railways opening for Public Carriage of Passengers" was amended from time to time. And applicable as and when the works are undertaken. The Contractor shall initiate the process for approval at least **63** (sixty three) days prior to undertaking such works which require the approval of Commissioner of Railway Safety (CRS) and furnish draft documentation to the Engineer.
- (b) The Contractor shall ensure that existing services and operations for public carriage of passengers or goods, are not affected except those, which are essentially required to be regulated for execution of works. Such items of works shall be planned and coordinated through the Engineer.
- (c) Prior to the commencement of commercial operations of passenger traffic :
 - (i) The Contractor may have to operate locomotives, track machines and any other rolling stock for track tamping, trial runs, etc. for which track, signaling or OHE works must comply with the specifications.
 - (ii) The Employer may permit freight train operations to Railway after certification by the authorized person of Zonal Railway
 - (iii) The Contractor shall be responsible for maintaining the facilities ensuring safety of operations under (i) & (ii) above as per specifications.

10.1 Taking Over of the Works and Sections

Except as stated in Sub-Clause 9.4 [Failure to Pass Tests on Completion], the Works shall be taken over by the Employer/Railway when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 8.2 [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.

The Contractor may apply by notice to the Engineer for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contractor may similarly apply for a Taking-Over Certificate for each Section.

In case the works are to be taken over in accordance with sub-clause 9.5, the completed works shall be taken over by the Zonal Railway with the procedure specified by the Engineer.

The Engineer shall, within 28 days after receiving the Contractor's application:

- (a) issue the Taking-Over Certificate to the Contractor, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor outstanding work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or
- (b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice under this Sub-Clause.

If the Engineer fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 28 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on the last day of that period.

10.2 Taking Over of Parts of the Works

The Engineer may, at the sole discretion of the Employer, issue a Taking-Over Certificate for any part of the Permanent Works.

The Employer shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Engineer has issued a Taking-Over Certificate for this part. However, if the Employer does use any part of the Works before the Taking-Over Certificate is issued:

- (a) the part which is used shall be deemed to have been taken over as from the date on which it is used,
- (b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Employer, and
- (c) if requested by the Contractor, the Engineer shall issue a Taking-Over Certificate for this part.

After the Engineer has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.

If the Contractor incurs Cost as a result of the Employer taking over and/or using a part of the Works, other than such use as is specified in the Contract or agreed by the Contractor, the Contractor shall (i) give notice to the Engineer and (ii) be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to payment of any such Cost, which shall be included in the Contract Price. After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this Cost and profit.

If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages thereafter for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply to the daily rate of delay damages under Sub-Clause 8.7 [Delay Damages], and shall not affect the maximum amount of these damages.

10.3 Interference with Tests on Completion

If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Employer/Engineer/other Contractors of the Employer, are responsible, the Employer shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.

The Engineer shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Engineer shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance with the relevant provisions of the Contract.

If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out

the Tests on Completion, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

10.4 Surfaces Requiring Reinstatement

Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.

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11.1 Completion of Outstanding Work and Remedying Defects

In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable thereafter, the Contractor shall:

- (a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and
- (b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Employer on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).

If a defect appears or damage occurs, the Contractor shall be notified accordingly, by (or on behalf of) the Employer.

11.2 Cost of Remedying Defects

All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:

- (a) any design for which the Contractor is responsible,
- (b) Plant, Materials or workmanship not being in accordance with the Contract, or
- (c) failure by the Contractor to comply with any other obligation.

If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Employer, and Sub-Clause 13.3 [Variation Procedure] shall apply

11.3 Extension of Defects Notification Period

The Employer shall be entitled subject to Sub-Clause 2.5 [Employer's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or damage. However, a Defects Notification Period shall not be extended by more than two years.

If delivery and/or erection of Plant and/or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/or Materials would otherwise have expired.

11.4 Failure to Remedy Defects

If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by (or on behalf of) the Employer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.

If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Employer may (at his option):

- (a) Carry out the work himself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay to the Employer the costs reasonably incurred by the Employer in remedying the defect or damage;
- (b) require the Engineer to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or
- (c) if the defect or damage deprives the Employer of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contract or otherwise, the Employer shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.

11.5 Removal of Defective Work

If the defect or damage cannot be remedied expeditiously on the Site and the Employer gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.

11.6 Further Tests

If the work of remedying of any defect or damage may affect the performance of the Works, the Engineer may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 28 days after the defect or damage is remedied.

These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.

11.7 Right of Access

Until the Performance Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Employer's reasonable security restrictions.

11.8 Contractor to Search

The Contractor shall, if required by the Engineer, search for the cause of any defect, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search shall be agreed or determined by the Engineer in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.

11.9 Performance Certificate

Performance of the Contractor's obligations shall not be considered to have been completed until the Employer has issued the Performance Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.

The Employer shall issue the Performance Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects.

Only the Performance Certificate shall be deemed to constitute acceptance of the Works.

11.10 Unfulfilled Obligations

After the Performance Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.

11.11 Clearance of Site

Upon receiving the Performance Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.

If all these items have not been removed within 28 days after the Employer receives a copy of the Performance Certificate, the Employer may sell or otherwise dispose of any remaining items. The Employer shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.

Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Employer's costs, the Contractor shall pay the outstanding balance to the Employer.

12.1 Works to be Measured

The Works shall be measured, and valued for payment, in accordance with this Clause.

Whenever the Engineer requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

- (a) promptly either attend or send another qualified representative to assist the Engineer in making the measurement, and
- (b) supply any particulars requested by the Engineer.

If the Contractor fails to attend or send a representative, the measurement made by (or on behalf of) the Engineer shall be accepted as accurate.

Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agree the records with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.

If the Contractor examines and disagrees the records, and/or does not sign them as agreed, then the Contractor shall give notice to the Engineer of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Engineer shall review the records and either confirm or vary them. If the Contractor does not so give notice to the Engineer within 14 days after being requested to examine the records, they shall be accepted as accurate.

12.2 Method of Measurement

Except as otherwise stated in the Contract and notwithstanding local practice:

- (a) measurement shall be made of the net actual quantity of each item of the Permanent Works, and
- (b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.

12.3 Evaluation

Except as otherwise stated in the contract, the Engineer shall proceed in accordance with sub clause 3.5 (Determinations) to agree or determine the contract price by evaluating each item of work, applying the measurement agreed or determined in accordance with the above sub clause 12.1 and 12.2 and the appropriate rate or price for the item.

For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the contract or, if there is no such item, specified for similar work.

12.3.1

However, a new rate or price shall be appropriate for an item of work if :

- (a) all the following conditions are met for existing item of the contract:
- (i) the measured quantity of the item is increased by more than 50% from the quantity of this item in the Bill of Quantities or the Schedule,
 - (ii) this increase in quantity multiplied by specified rate for this item in the Bill of Quantities or the Schedule, exceeds 0.25% of the Accepted Contract Amount,
 - (iii) this item is not specified in the contract as a “fixed rate item”.

Note: New rates in case of increase in quantity of the agreement items shall be applicable to the increase in quantities beyond the quantities required to meet conditions specified under 12.3.1 (a) (i) & (ii) above.

OR

- (b)
- (i) the work is instructed under clause 13[Variations and Adjustments],
 - (ii) no rate or price is specified in the contract for this item, and
 - (iii) no specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the contract.

OR

- (c) On passage of original completion period stipulated in the contract, if site in some stretches has not been handed over for execution of the work due to any of the reasons mentioned below:
- (i) non acquisition of land,
 - (ii) non availability of forest/wild life clearances,
 - (iii) non removal of encroachments, delay in shifting of utilities (to be shifted by other agencies) and
 - (iv) non handing over of the sites by other agencies/authorities

and the contractor otherwise has been executing the works satisfactorily on other sites, as certified by the Engineer, the contractor shall be entitled for new rates for the items and quantities of work which could not be executed in the stretches still to be handed over. In case the progress is not satisfactory, the contractor shall not be entitled for new rates and the Employer shall have the option either to continue the work in these stretches through the same agency or get it executed through other means.

In case of entitlement for new rates, if the contractor is not willing to take up the work in these stretches, he will have the option to say so in writing or if no agreement is reached on new rates, the remaining works of such stretches shall be excluded from the scope of the contract through a variation statement. In such a case the contractor shall not be entitled for any claim or compensation on this account. The employer shall get the remaining works on these stretches executed through other means.

12.3.2

- (i) Each new rate or price for item(s) as described in sub paragraph 12.3.1 (a) & (c) above shall be derived from an assessment of the reasonable cost of executing the work with an additional element of 15% towards overheads and profit of the Contractor.
- (ii) Each new rate or price for item(s) as described in sub paragraph 12.3.1 (b) above shall be derived from an assessment of the reasonable cost of executing the work with an additional element of 15% towards overheads and profit of the Contractor, subject to the condition that such item(s) as described in sub paragraph 12.3.1 (b) above is/are not available in the "Standard Bill of Quantities of K RIDE".
- (iii) In case item(s) as described in sub paragraph 12.3.1 (b) above is/are available in the "Standard Bill of Quantities of K RIDE (updated upto 28 days prior to deadline for submission of bids)", new rate or price for such items shall be the rate as available in the "Standard Bill of Quantities of K RIDE (updated upto 28 days prior to deadline for submission of bids)", modified by the percentage above/below accepted in this contract for the respective schedule and also price variation shall be applicable in the same manner as applicable to items specified in the contract.
- (iv) The assessment of reasonable cost of executing the work (except over heads and profit which shall be 15%) shall be arrived at based on the prevailing rates and by taking guidance from the following documents. The priority of the documents shall be in accordance with the following sequence:
 - a) Analysis of Unified SOR of Indian Railway;
 - b) Analysis issued by MORTH;
 - c) Schedule of Rates issued by CPWD;
 - d) Market analysis.
- (v) If the final rate decided by the competent authority as per K RIDE SOP is not acceptable to the contractor, the contractor will be bound to execute the work at the rates as decided by the competent authority of K RIDE but he may refer the dispute in rate for settlement as per provisions of clause 20 of General Conditions of Contract. Until such time as an appropriate rate or price is agreed or determined, the Engineer shall make the Interim payment at the rate of 80% of the rate proposed by him and accepted by the Project Director (concerned GM(Civil) in charge of the project).

12.3.3

Until such time as an appropriate rate or price is agreed or determined, the Engineer shall make the Interim payment at the rate of 80% of the rate proposed by him and accepted by the Project Director (concerned GM(Civil) in charge of the project).

12.4 Omissions

Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

- (a) the Contractor will incur (or has incurred) cost which, if the work had not been omitted, would have been deemed to be covered by a sum forming part of the Accepted Contract Amount;
- (b) the omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and
- (c) this cost is not deemed to be included in the evaluation of any substituted work;

then the Contractor shall give notice to the Engineer accordingly, with supporting particulars. Upon receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

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13.1 Right to Vary

Variations may be initiated by the Employer at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by making a request to the Contractor to submit a proposal.

The Contractor shall execute and be bound by each Variation till the price does not exceed 50% of the agreemental value as specified in letter of acceptance / original agreement. For variation beyond the above the contractor shall be bound to execute, unless the Contractor promptly gives notice to the Engineer stating (with supporting particulars) that the Contractor cannot readily obtain the Goods required for the Variation. Upon receiving this notice, the Engineer shall cancel, confirm or vary the instruction.

Each Variation may include:

- (a) changes to the quantities of any item of work included in the Contract,
- (b) changes to the quality and other characteristics of any item of work,
- (c) changes to the levels, positions and/or dimensions of any part of the Works,
- (d) omission of any work unless it is to be carried out by others,
- (e) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or
- (f) changes to the sequence or timing of the execution of the Works.

The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Engineer instructs or approves a Variation.

13.2 Value Engineering

The Contractor may, at any time, submit to the Engineer a written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Employer of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Employer of the completed Works, or (iv) otherwise be of benefit to the Employer.

The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 13.3 [Variation Procedure].

If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties:

- (a) the Contractor shall design this part,
- (b) sub-paragraphs (a) to (d) of Sub-Clause 4.1 [Contractor's General Obligations] shall apply, and
- (c) if this change results in a reduction in the contract value of this part, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall be half (50%) of the difference between the following amounts:

- (i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and
- (ii) the reduction (if any) in the value to the Employer of the varied works, taking account of any reductions in quality, anticipated life or operational efficiencies.

However, if amount (i) is less than amount (ii), there shall not be a fee.

13.3 Variation Procedure

If the Engineer requests a proposal, prior to instructing a Variation, the Contractor shall respond in writing as soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:

- (a) a description of the proposed work to be performed and a programme for its execution,
- (b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion, and
- (c) the evaluation of the Variation shall be as specified in Clause 12.3 Evaluation.

The Engineer shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst awaiting a response.

Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Engineer to the Contractor, who shall acknowledge receipt.

Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Engineer instructs or approves otherwise in accordance with this Clause.

13.4 Payment in Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

13.5 Provisional Sums

Each Provisional Sum shall only be used, in whole or in part, in accordance with the Engineer's instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include only such amounts, for the work, supplies or services to which the Provisional Sum relates, as the Engineer shall have instructed. For each Provisional Sum, the Engineer may instruct:

- (a) work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or

- (b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which these shall be included in the Contract Price:
 - (i) the actual amounts paid (or due to be paid) by the Contractor, and
 - (ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in the Contract Data shall be applied.

The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

13.6 Day work

For work of a minor or incidental nature, the Engineer may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.

Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.

Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall deliver each day to the Engineer accurate statements in duplicate which shall include the following details of the resources used in executing the previous day's work:

- (a) the names, occupations and time of Contractor's Personnel,
- (b) the identification, type and time of Contractor's Equipment and Temporary Works, and
- (c) the quantities and types of Plant and Materials used.

One copy of each statement will, if correct, or when agreed, be signed by the Engineer and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates]

13.7 Adjustments for Changes in Legislation

Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of the Country (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.

If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

In case there is a decrease in cost as a result of changes of Law by Legislation after the Base Date, the Engineer shall proceed in accordance with Sub Clause 3.5 (determination) to agree or determine these matters without waiting for Contractor's / Employer's Notice.

Notwithstanding the foregoing, the Contractor shall not be entitled to such an extension of time if the same shall already have been taken into account in determining an extension and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8.

13.8 Adjustment for changes in cost.

Price Variation Clause (PVC):

46A.1 Applicability: Price Variation Clause (PVC) shall be applicable only in those contracts where tender conditions specifically permit it. Materials supplied free of cost by Railway to the Contractors and any extra **NS** item(s) included in subsequent variation falling outside the purview of the Schedule of Items of tender shall fall outside the purview of Price Variation Clause. If, in any case, accepted offer includes some specific payment to be made to consultants or some materials supplied by Railway free or at fixed rate, such payments shall be excluded from the gross value of the work for the purpose of payment/recovery of price variation.

46A.2 Base Month: The Base Month for 'Price Variation Clause' shall be taken as month 28 days prior to opening of tender including extensions, if any, unless otherwise stated elsewhere. The quarter for applicability of PVC shall commence from the month following Base month. The Price Variation shall be based on the average Price Index of the quarter under consideration.

46A.3 Validity: Rates accepted by Railway Administration shall hold good till completion of work and no additional individual claim shall be admissible except:

- (a) Payment/recovery for increase/decrease in GST on works contract or imposition/removal of any tax/cess on Works Contract as per Clause 37,
- (b) Payment/recovery for overall market situation as per Price Variation Clause given hereunder.

46A.4 Adjustment for variation in prices of material, labour, fuel, explosives, detonators, steel, concreting, ferrous, non-ferrous, insulators, zinc and cement shall be determined in the manner prescribed.

46A.5 Components of various items in a contract on which variation in prices be admissible, shall be Material, Labour, Fuel, Explosives & Detonators, Steel, Cement, Concreting, Ferrous, Non-ferrous, Insulator, Zinc, Erection etc. However, for fixed components, no price variation shall be admissible.

46A.6 The percentages of labour component, material component, fuel component etc. in various types of Engineering contracts shall be as under:

S. No	Component	E/Work & Minor Bridges Contracts, Ballast Supply Contracts, Tunneling Contracts (without explosive)	Tunneling Contracts (with explosives)	Major and Important Bridges Contracts	Building Contracts	Permanent Way linking Contracts (Manual)	Other Works Contracts
1	Labour Component	20	20	20	40	50	20
2	Other Material Components	10	15	30	35	5	20
3	Plant Machinery & Spares	30	15	20	5	15	30
4	Fuel & Lubricants Component	25	15	15	5	15	15
5	Fixed Component*	15	15	15	15	15	15
6	Detonators & Explosive Component	-	20	-	-	-	-

* It shall not be considered for any price variation.

46A.7 Formulae: The Amount of variation in prices in several components (labour, material etc.) shall be worked out by the following formulae:

$$(i) \quad L = \frac{W \times (LQ - LB)}{LB} \times \frac{LC}{100}$$

$$(ii) \quad M = \frac{W \times (MQ - MB)}{MB} \times \frac{MC}{100}$$

$$(iii) \quad F = \frac{W \times (FQ - FB)}{FB} \times \frac{FC}{100}$$

$$(iv) \quad E = \frac{W \times (EQ - EB)}{EB} \times \frac{EC}{100}$$

$$(v) \quad PM = \frac{W \times (PMQ - PMB)}{PMB} \times \frac{PMC}{100}$$

$$(vi) \quad S = SW \times \frac{(SQ - SB)}{SB}$$

$$(vii) \quad C = CV \times (CQ - CB) / CB$$

For Railway Electrification Works:

$$(viii) \quad T = [(CS - CO) / CO \times 0.4136] \times TC$$

$$(ix) \quad R = [(RT - RO) / RO + (ZT - ZO) / ZO \times 0.06] \times RC$$

$$(x) \quad N = [(PT - PO) / PO] \times NC$$

$$(xi) \quad Z = [(ZT - ZO) / ZO] \times ZC$$

$$(xii) \quad I = [(IT - IO) / IT] \times 85$$

Where,

L	Amount of price variation in Labour
M	Amount of price variation in Materials
F	Amount of price variation in Fuel
E	Amount of price variation in Explosives
PM	Amount of price variation in Manufacture of machinery for mining, Quarrying and Construction
S	Amount of price variation in Steel
C	Amount of price variation in Cement
T	Amount of price variation in Concreting
R	Amount of price variation in Ferrous Items
N	Amount of price variation in Non-Ferrous Items
Z	Amount of price variation in Zinc
I	Amount of price variation in Insulator
Lc	% of Labour Component
Mc	% of Material Component
Fc	% of Fuel Component
Ec	% of Explosive Component
PMc	% of Manufacture of machinery for mining, Quarrying and Construction Component
Tc	% of Concreting Component
Rc	% of Ferrous Component
Nc	% of Non-Ferrous Component

- Zc % of Zinc Component
- W Gross value of work done by Contractor as per on-account bill(s) excluding cost of materials supplied by Railway at fixed price, minus the price values of cement and steel. This will also exclude specific payment, if any, to be made to the consultants engaged by Contractors (such payment shall be indicated in the Contractor's offer)
- LB Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the base period
- LQ Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
- MB Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the base period
- MQ Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
- FB Wholesale Price Index for the group Fuel & Power as published in the R.B.I. Bulletin for the base period
- FQ Index Number of Wholesale Price Index – By Groups and Sub-Groups for the group Fuel & Power as published in the R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
- EB Index number of Monthly Whole Sale Price Index for the category 'Explosive' of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the base period.
- EQ Index number of Monthly Whole Sale Price Index for the category 'Explosive' of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the average price index of 3 months of the quarter under consideration.
- PMB Index number of Monthly Whole Sale Price Index for the category 'k. Manufacture of machinery for mining, quarrying and construction' under (R) MANUFACTURE OF MACHINERY AND EQUIPMENT, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the base period.
- PMQ Index number of Monthly Whole Sale Price Index for the category 'k. Manufacture of machinery for mining, quarrying and construction' under (R) MANUFACTURE OF MACHINERY AND EQUIPMENT, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the average price index of 3 months of the quarter under consideration.

SW Gross value of steel supplied by the Contractor as per the 'on-account' bill for

- the month under consideration
- SB Index number of Monthly Whole Sale Price Index for the relevant category of mild steel item as mentioned in Clause 46A.9, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP); for the base period.
 - SQ Index number of Monthly Whole Sale Price Index for the relevant category of mild steel item as mentioned in Clause 46A.9, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP); for the average price index of the 3 months of the quarter under consideration.
 - CV Value of Cement supplied by Contractor as per on account bill in the quarter under consideration
 - CB Index No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the base period
 - CQ No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the average price index of the 3 months of the quarter under consideration
 - CS RBI wholesale price index for Cement, Lime & Plaster for the month which is six months prior to date of casting of foundation
 - Co RBI wholesale price index for Cement, Lime & Plaster for the month which is one month prior to date of opening of tender
 - RT IEEMA price index for Iron & Steel for the month which is two months prior to date of inspection of material
 - RO IEEMA price index for Iron & Steel for the month which is one month prior to date of opening of tender.
 - PT IEEMA price index for Copper wire bar for the month which is two months prior to date of inspection of material.
 - PO IEEMA price index for Copper wire bar for the month which is one month prior to date of opening of tender.
 - ZT IEEMA price index for Zinc for the month which is two months prior to date of inspection of material
 - ZO IEEMA price index for Zinc for the month which is one month prior to date of opening of tender
 - IT RBI wholesale price index for the sub-group “other Portland and Ceramic product” for the month which is two months prior to date of inspection of material
 - IO RBI wholesale price index for the sub-group “other Portland and Ceramic product” for the month which is one month prior to date of opening of tender

46A.8 The demands for escalation of cost shall be allowed on the basis of provisional

indices as mentioned above in Clause 46A.7. Any adjustment needed to be done based on the finally published indices shall be made as and when they become available.

46A.9: Relevant categories of steel for the purpose of operating Price Variation formula as mentioned in this Clause shall be as under:

SL	Category of Steel Supplied in Railway Work	Category of Steel Items as mentioned in Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP).
1.	Reinforcement bars and other rounds	'MS Bright Bars' individual commodity of group item (d) Mild Steel-Long Products under (N) MANUFACTURE OF BASIC METAL.
2.	All types and sizes of angles, channels and joists	'Angles, Channels, Sections, Steel' individual commodity of group item (d) Mild Steel-Long Products under (N) MANUFACTURE OF BASIC METAL.
3.	All types and sizes of plates	'e. Mild Steel – Flat Products' of (N) MANUFACTURER OF BASIC METAL
4	Any other section of steel not covered in the above categories and excluding HTS	Average of price for the 3 categories covered under SL 1, 2 & 3 above

46A.10 Price Variation during Extended Period of Contract

The price adjustment as worked out above, i.e. either increase or decrease shall be applicable upto the stipulated date of completion of work including the extended period of completion where such extension has been granted under Clause 17-A of the Standard General Conditions of Contract. However, where extension of time has been granted due to Contractor's failure under Clause 17-B of the Standard General Conditions of Contract, price adjustment shall be done as follows:

- a. In case the indices increase above the indices applicable to the last month of original completion period or the extended period under Clause 17-A, the price adjustment for the period of extension granted under Clause 17-B shall be limited to the amount payable as per the Indices applicable to the last month of the original completion period or the extended period under Clause 17-A of the Standard General Conditions of Contract; as the case may be.
- b. In case the indices fall below the indices applicable to the last month of original/extended period of completion under Clause 17-A, as the case may be; then the lower indices shall be adopted for the price adjustment for the period of extension under Clause 17-B of the Standard General Conditions of Contract.

14.1 The Contract Price

Unless otherwise stated in the Special Conditions of Contract:

- (a) the Contract Price shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;
- (b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];
- (c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and final quantities:
 - (i) of the Works which the Contractor is required to execute, or
 - (ii) for the purposes of Clause 12 [Measurement and Evaluation]; and
- (d) the Contractor shall submit to the Engineer, within 28 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules, if applicable. The Engineer may take account of the breakdown when preparing Payment Certificates, but shall not be bound by it.
- (e) It may be noted that in the event of the Contractor not making the due payments stated in sub-clause (b) above, and the concerned party puts up a claim with the Employer / Engineer, then the Employer / Engineer may make such payments and deduct the same from the sums due to the Contractor.

14.2 Advance Payment

14.2.1 Mobilization Advance

The Employer shall make payment, as an Interest bearing advance for mobilization, when the Contractor submits a guarantee in accordance with this Sub-Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions, shall be as stated in the Contract Data.

Unless and until the Employer receives this guarantee, or if the total advance payment is not stated in the Contract Data, this Sub-Clause shall not apply.

The Engineer shall issue an interim payment certificate for the first installment of mobilisation advance after receiving an application for advance payment (under sub clause 14.3 [Application for Interim Payment Certificates]) and after the Employer receives (i) the Performance Security in accordance with Sub-Clause 4.2 [Performance Security] and (ii) a guarantee in amounts and currencies equal to the advance payment plus 10%. The next installment shall be released only when the contractor submits statement of having utilized the previous installment of mobilization advance and the Employer is satisfied that the utilization has been done in purposeful manner.

14.2.2 Advance against Plant and Machinery

Interest bearing advance against plant and machinery, is payable for procurement of plant, equipment and machinery to be utilized specifically for the subject works, provided the same have reached the site along with purchase order and the invoices

against a guarantee in amounts and currencies equal to the advance payment plus 10%. The total advance payment under this sub-clause, including the applicable currencies and proportions, shall be as stated in the Contract Data.

All such plant, equipment and machinery shall be used only for executing the works under this Contract. No such plant, equipment and machinery shall be removed from the site, unless advance equivalent to the advance against such machinery has been fully repaid and prior permission of the Engineer has been obtained.

The Engineer shall decide whether a particular plant, equipment or machinery is actually required to execute the work. No advance is payable against items identified as unnecessary. The plant and machinery admissible for advance payment and its valuation shall be done by the Engineer on following considerations;

- (i) New items : 80% of purchase price
- (ii) Used or Second hand items : Not to be considered
- (iii) New Items valued at less than Rs. 10,00,000 each : Not to be considered.

14.2.3 Guarantees

Advances as mentioned in sub-clauses 14.2.1 & 14.2.2 above, shall be payable against acceptable Bank Guarantees from banks as specified in clause 4.2. The guarantees shall be in the form as given in Section 8 (Contract Forms) or in another form approved by the Employer. The Contractor shall ensure that the guarantees are valid and enforceable until the advance amount paid as has been repaid, but its amount may be progressively reduced by the amount repaid by the Contractor as indicated in the Payment Certificates. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment has been repaid.

14.2.4 Recovery of Advances

Unless stated otherwise in the Contract Data, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Engineer in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:

- (a) deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment) exceeds 5 percent of the Accepted Contract Amount less Provisional Sums or passage of six months from the date of release of first advance payment, whichever is earlier; and
- (b) deductions shall be made for accrued interest on the advance up to the month and advance at the rate stated in the Contract Data of the amount of each Interim Payment Certificate (excluding the advance payment and deductions and repayments of retention) in the currencies and proportions of the advance payment until such time as the advance payment and accrued interest has been repaid; provided that the advance payment and accrued interest shall be completely repaid prior to the time when 80 percent of the Accepted Contract Amount has been certified for payment. If the amount of interim payment certificate is not sufficient for recovery of accrued interest or in the opinion of the Employer satisfactory progress is not being achieved by the contractor, then the contractor will have to deposit the accrued interest and return the mobilisation advance in part or in full as demanded by the Employer, failing which Employer

shall have the right to encash the Bank Guarantee(s)

The contractor shall always have the option to start repayment earlier and/or to complete the repayment earlier than the due date.

If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Employer], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as the case may be), the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Employer.

14.2.5 Advances to be Used only for this Work

The advances shall be used by the Contractor strictly for the purpose of the Contract, and for the purpose for which they are paid. Under no circumstances, shall the advances be diverted for other purposes. Any such diversion shall be construed as a breach of the Contract and the Contractor shall be asked to return the advance at once and pay interest at 15% per annum till the advance is recovered back from him. The Contractor shall return the advance and pay the interest in one go without demur.

Employer retains the right for any other remedy prescribed for breach of Contract in this regard.

The Contractor, if required by the Engineer shall provide the details of utilisation of Mobilisation advance.

14.3 Application for Interim Payment Certificates

The Contractor shall submit a Statement in six copies to the Engineer in accordance with the payment procedure specified by the Engineer, after the end of each month, in a form approved by the Engineer, showing in detail the amounts to which the Contractor considers himself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause 4.21 [Progress Reports] and Record Measurement Sheets.

The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

- (a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);
- (b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];
- (c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in the Contract Data to the total of the above amounts, until the amount so retained by the Employer reaches the limit of Retention Money (if any) stated in the Contract Data;
- (d) Any amounts to be added and deducted for the advance payments and repayments in accordance with sub clause 14.2 [Advance Payment];
- (e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];

- (f) any other additions or deductions which may have become due under the Contract or otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and
- (g) the deduction of amounts certified in all previous Payment Certificates.
- (h) for invoicing as per GST Laws, the estimated contract value of the Works executed in terms of (a) above and any amounts added or deducted as per (b), (e) to (g) above is to be broken up in two components i.e. (i) the base amount excluding GST (ii) GST component (calculated at the rate for works contract service as per GST Laws).
- (i) Statement of interim payments certificates should be submitted by the Contractor to the Engineer by the 7th day of each month for the work executed upto the end of the previous month.
- (j) An amount to be deducted for the payments to be made to different Departments towards payments liable to be made by the Contractor.

14.4 Schedule of Payments

If the Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

- (a) the instalments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates];
- (b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and
- (c) if these instalments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less than that on which this schedule of payments was based, then the Engineer may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less than that on which the instalments were previously based.

If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

14.5 Plant and Materials intended for the Works

If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3:

- (k) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and

- (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates].

If the lists referred to in sub-paragraphs (b)(i) or (c)(i) below are not included in the Contract Data, this Sub-Clause shall not apply.

The Engineer shall determine and certify each addition if the following conditions are satisfied:

(a) the Contractor has:

- (i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and
- (ii) submitted a statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;

and either:

(b) the relevant Plant and Materials:

- (i) are those listed in the Schedules for payment when shipped,
- (ii) have been shipped to the Country, en route to the Site, in accordance with the Contract; and
- (iii) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Engineer together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Employer in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause 14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration;

or

(c) the relevant Plant and Materials:

- (i) are those listed in the Schedules for payment when delivered to the Site,
- (ii) the original 'Invoice' and the original 'Inspection Certificate' by the approved Inspection agency marked 'for payment' is furnished with the Application for IPC [sub-Clause 14.3].
- (iii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration, and appear to be in accordance with the Contract.

The additional amount to be certified shall be the equivalent of eighty percent of the Engineer's determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials. The amount shall be certified on receipt of an Indemnity Bond for the stated amount in the Form approved by the Employer.

The currencies for this additional amount shall be the same as those in

which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.

14.6 Issue of Interim Payment Certificates

No amount will be certified or paid until the employer has received and approved the performance security. Thereafter, the Engineer shall within two days after receiving a statement and supporting documents (including Contractor's certificate in terms of Sub-Clause 6.22 (ii)), issue to the Employer a provisional interim payment certificate which shall state the amount which the Engineer determines to be due after preliminary check as per K RIDE's procedure order. After this the Engineer shall, within 28 days after receiving a statement and supporting documents, issue to the employer an Interim Payment Certificate which shall state the amount which the Engineer fairly determines to be due, with supporting particulars.

However, prior to issuing the Taking-Over Certificate for the Works, the Engineer shall not be bound to issue the Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated in the Contract Data. In this event, the Engineer shall give notice to the Contractor accordingly.

An Interim Payment Certificate shall not be withheld for any other reason, although:

- (a) if anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
- (b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

The Engineer may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Engineer's acceptance, approval, consent or satisfaction.

14.7 Payment

The Employer shall pay to the Contractor:

- (a) the first instalment of the advance payment within 42 days after issuing the Letter of Acceptance or within 21 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub-Clause 14.2 [Advance Payment], whichever is later;
- (b) (i) After preliminary scrutiny and certifications by the Engineer, payment of 70% of the certified net payment due (after recoveries and deductions), shall be made by the Employer within 10 days of receiving a statement and supporting documents by the Engineer subject to the condition that last interim payment certificate has been settled after detailed check. In the event of the contractor submitting bills based on false measurements, Project Director should issue a written warning to him to the effect that the facility of 70% payment without

detailed check will be withdrawn in future. If the contractor repeats the misconduct this facility should be withdrawn.

- (iii) The amount certified in each Interim Payment Certificate within 56 days after the Engineer receives the Statement and supporting documents. Any discrepancy shall be rectified in the next payment to the Contractor; and
- (c) the amount certified in the Final Payment Certificate within 56 days after the Employer receives this Payment Certificate or, the undisputed amount shown in the Final Statement, within 56 days after the date of notification of the suspension in accordance with Sub-Clause 16.2.

Payment of the amount due, unless specified in the Contract Data, shall be made in INR into the bank account, nominated by the Contractor except for the Contract where the Contractor has opted for payment through Letter of Credit (LC) arrangement. In such a case, the procedure for payment shall be as prescribed in clause 14.7.1 below.

- (d) the amount certified in the Final Payment Certificate within 56 days after the Employer receives this Payment Certificate or, the undisputed amount shown in the Final Statement, within 56 days after the date of notification of the suspension in accordance with Sub-Clause 16.2.

Payment of the amount due, unless specified in the Contract Data, shall be made in INR into the bank account, nominated by the Contractor except for the Contract where the Contractor has opted for payment through Letter of Credit (LC) arrangement. In such a case, the procedure for payment shall be as prescribed in clause 14.7.1 below.

However, in case of JV, direct payment to individual JV partners shall be made on joint certification (about the net amounts payable to individual partners) by the authorized representative of the JV and concerned respective authorized representative of individual JV partners, after making requisite recoveries/deductions from the gross payment. In case of any dispute regarding the net amounts payable to individual partners, the Engineer shall decide the same on the basis of the execution of items of works under Schedules/Bills indicated in the JV agreement as the responsibility of execution of each JV partner. Payment to individual JV partners shall be treated as payment made to the JV. The said payment shall not alter any obligation of the JV and its individual Partners under the Agreement and their obligations under the agreement shall remain joint and several.

A foreign company (either single entity or JV partner), shall have to submit proof of having opened their project office in India before any payment (including advance payment) is released to such a company. The required proof here shall be a copy of the report containing information as per format prescribed by Reserve Bank of India submitted to the Director General of Police (DGP) of the state concerned in which project office has been established.

14.7.1 Procedure for payment through LC:

- (i) The LC shall be a sight LC.
- (ii) The contractor shall select his Advising/Negotiating bank for LC. The

incidental cost towards issue of LC and its operation thereof shall be borne by the contractor.

- (iii) The Employer's Bank and its nodal branch for issue of LCs based on requests received from Employer Accounts Units shall be as indicated in the Contract Data. The Branch office of the Employer's Bank, where the Employer Accounts Office has its Account, as indicated in the Contract Data, will be the issuance/reimbursing branch for LC issued under this arrangement. The Bank shall remain same for this tender till completion of contract. The present incidental cost @ 0.15% per annum of LC value or any increase/decrease by the banks for issue of LC and operation thereof shall be borne by the contractor and shall be recovered from his Interim Payment Certificates.
- (iv) The LC shall be opened initially for duration of 180 to 365 days in consultation with contractor. The LC shall be extended time to time as per the progress of the contract, on the request of the contractor. The value of LC to be opened initially as well as extended thereafter shall be finalized by the engineer in consultation with the contractor on the basis of expected progress of work.
- (v) The LC terms and conditions shall inter-alia indemnify and save harmless the Employer from and against all losses, claims and demands of every nature and description brought or recovered against the Employer by reason of any act or omission of the contractor, his agents or employees, in relation to the Letter of Credit (LC). All sums payable/borne by Employer on this account shall be considered as reasonable compensation and paid by contractor.
- (vi) The LC terms and conditions shall inter-alia provide that Employer will issue a Document of Authorisation (in the format decided in consultation with the Employer's Bank) after passing the Interim Payment Certificate for completed work, to enable contractor to claim the authorized amount from their bank.
- (vii) The acceptable, agreed upon document for payments to be released under the LC shall be the Document of Authorisation.
- (viii) The Document of Authorisation shall be issued by Employer Accounts Office against each Interim Payment Certificate passed by Employers.
- (ix) On issuance of document of Authorisation, a copy of Document of Authorization shall be sent to the contractor. A copy of Document of Authorisation shall also be sent by Employer Accounts Office to Employer's bank.
- (x) On receipt of Document of Authorization, the contractor shall present his claim to his bank (advising Bank) for necessary payments as per LC terms and conditions. The claim shall comprise of copy of Document of Authorization, Bill of Exchange and Payment Certificate.
- (xi) The payment against LC shall be subject to verification from Employer's Bank

- (xii) The contractor's bank (advising bank) shall submit the documents to the Employer's Bank .
- (xiii) The Employer's bank (Issuing Bank) shall, after verifying the claim so received w.r.t. the Document of Authorisation received from Employer Accounts Office release the payment to contractor's bank (advising bank) for crediting the same to contractor's account.
- (xiv) Any number of Interim Payment Certificates can be dealt within one LC, provided the sum total of payments to contractor is within the amount for which LC has been opened.
- (xv) The LC shall be closed after the release of Final Payment certificate including PVC amount, if any, to the contractor.
- (xvi) In case of JV, LC shall be opened in the name of JV and option of direct payment to individual JV partners through LC shall not be permissible.

14.8 Delayed Payment

If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive interest compounded monthly on the amount unpaid during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b)) of the date on which any Interim Payment Certificate is issued.

Unless otherwise stated in the Special Conditions of Contract, the interest amount be calculated at the annual rate of seven percent.

The Contractor shall be entitled to this payment without formal notice or certification, and without prejudice to any other right or remedy.

14.9 Payment of Retention Money

The Retention Money shall be certified and paid with the final payment certificate or bank guarantee against retention money shall be released, after making required adjustments for recovery for shortage/excess materials, if any (except those quantities which become surplus due to change in planning/scheme by K RIDE in case the recovery for surplus/excess materials is still balance after adjusting the amount payable in the final payment certificate.

The contractor shall be entitled to substitute a bank guarantee in the form approved by the Employer with the retention money amount recovered upto the date of request. Such substitution shall be permissible maximum upto 3 times. The Bank Guarantee shall be valid upto end of Defect Liability Period. In case of extension of date of completion of contract, the Contractor shall extend the validity of the Bank Guarantee(s) until the revised end of Defect Liability Period.

Wherever the contract is terminated under Clause 15.2, the Retention Money shall be forfeited and the balance work should be got done separately.

14.10 Statement at Completion

Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Engineer six copies of a Statement at completion with supporting documents, in accordance with Sub-Clause 14.3 [Application for Interim Payment Certificates], showing:

- (a) the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works,
- (b) any further sums which the Contractor considers to be due, and
- (c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

The Engineer shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement as per procedure prescribed by the Engineer, with supporting documents showing in detail in a form approved by the Engineer:

14.11 Application for Final Payment Certificate

Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement as per procedure prescribed by the Engineer, with supporting documents (including Contractor's certificate in terms of Sub-Clause 6.22 (ii)) showing in detail in a form approved by the Engineer:

- (a) the value of all work done in accordance with the Contract, and
- (b) any further sums which the Contractor considers to be due to him under the Contract or otherwise.

If the Engineer disagrees with or cannot verify any part of the draft final statement, as per procedure prescribed by the Engineer the Contractor shall submit such further information as the Engineer may reasonably require and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed. This agreed statement is referred to in these Conditions as the "Final Statement".

However if, following discussions between the Engineer and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.3 [Obtaining Dispute Board's Decision] or Sub-Clause 20.2 [Amicable Settlement], the Contractor shall then prepare and submit to the Employer (with a copy to the Engineer) a Final Statement.

14.12 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of

all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the outstanding balance of this total, in which event the discharge shall be effective on such date.

14.13 Issue of Final Payment Certificate

Within 28 days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall issue, to the Employer, the Final Payment Certificate which shall state:

- (a) the amount which he fairly determines is finally due, and
- (b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the balance (if any) due from the Employer to the Contractor or from the Contractor to the Employer, as the case may be.

If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall request the Contractor to do so. If the Contractor fails to submit an application within a period of 28 days, the Engineer shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

14.14 Cessation of Employer's Liability

The Employer shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

- (a) in the Final Statement and also
- (b) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].

However, this Sub-Clause shall not limit the Employer's liability under his indemnification obligations, or the Employer's liability in any case of fraud, deliberate default or reckless misconduct by the Employer.

14.15 Currencies of Payment

The Contract Price shall be paid in Indian Rupees (INR).

15.1 Notice to Correct

If the Contractor fails to carry out any obligation under the Contract as mentioned below, but not limited to, the Engineer/ Employer may serve the contractor with a 14 days notice in writing calling upon the contractor to make good the failure and to remedy it. If the contractor;

- (a) fails to comply with Sub-Clause 4.2 [Performance Security],
- (b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,
- (c) without reasonable excuse fails to:
 - (i) proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or
 - (ii) comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 28 days after receiving it, or
 - (iii) adhere to the agreed programme of work / activity on the critical path, by a margin of 10% of the stipulated period, or
 - (iv) take steps to deploy competent and adequate number of personnel, and equipment to achieve progress as per agreed programme or
 - (v) adhere to the instructions of Engineers/Employer persistently or
 - (vi) comply any provision of the contract or
 - (vii) provide the Engineer/Employer or their representative proper facilities for inspecting the works or any part thereof as required, under Clause 7.3 (Inspection) and 7.4 (Testing).
- (d) subcontracts the whole or major part of the Works or assigns the Contract without prior written consent of the Employer.,

If the contractor does not, within 14 days of receipt of notice under this sub-clause, proceed to make good his default in so far as the same is capable of being made good and carry on the work of complying with such direction as contained in the notice under sub clause 15.1, to the entire satisfaction of the Engineer/Employer, the Employer shall be entitled to take action under sub-clause 15.1.1 or 15.1.2 or 15.2 below.

15.1.1

In case of contractor's repeated failure to adhere to the agreed program, and whereas the contractor has been served with a Notice to Correct under Clause 15.1 of GCC, if the contractor approaches K RIDE with a revised program with specific monthly physical and financial targets along with the proposal to deploy matching inputs in the form of manpower and other resources to the satisfaction of the Employer, then the Employer may consider whether to proceed with termination of the contract under Clause 15.2 of GCC or to continue with the contract. However, the request to continue with the contract shall only be considered if the contractor supports his earnestness to adhere to the revised program by submitting additional Performance Security in the form of Bank

Guarantee(s) of specified number and value as decided by the Employer (total value of which will not exceed 10% of the contract price). The encashment of these additional Bank Guarantee(s) shall be linked with the non achievement of agreed physical/financial targets agreed upon by the Contractor and the Employer.

15.1.2

In case the contractor's failure is limited to only some of the works, and in response to Notice to Correct under Clause 15.1 of GCC, the contractor approaches the Employer that such works may be offloaded from him and got executed through another agency and additional cost incurred, if any, should be recovered from his dues, the Employer, on being convinced that the anticipated additional cost for such works will not be substantial and can be recovered from the dues of the contractor and that such offloading will help in improving the overall progress of the project, may agree to such offloading without any repercussion on the performance security and/or additional bank guarantees, if any, submitted by the contractor. However, the Employer will not be under any compulsion to agree to such a request. The Contractor shall be informed of the LOA issued to other agency(ies) for such works.

In case the contractor does not approach the employer for offloading but the Employer is convinced that:

- (i) offloading of some works will help in improving the progress of the project;
- (ii) termination/part termination of the contract at this stage will not be in the interest of the project;
- (iii) the anticipated additional cost for such works will not be substantial and can be recovered from the dues of the contractor;

The Employer may issue 7 days notice to the Contractor stating the resources required to be deployed against each work. If the contractor fails to deploy the required resources as indicated in the notice, the employer shall offload such works and proceed with getting the works executed through other agency(ies). The Contractor shall be informed of the LOA issued to other agency(ies) for such works.

Offloading under the sub clause 15.1.2 shall be without any repercussion on the performance security and/or additional bank guarantees, if any, submitted by the contractor. The Contractor would have no future claim on this account and the extra expenditure so incurred, if any, by the Employer in getting the offloaded work done, shall be recovered from subsequent payment certificates or any other dues of the contractor.

15.2 Termination by Employer

The Employer shall be entitled to terminate the Contract as a whole or any part or parts (as may be specified in the Notice of Termination under any of the above Sub-Clause issue) if the Contractor:

- (a) fails to comply with the directions contained in the notice under Sub-Clause 15.1 [Notice to Correct],
- (b) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against it by Court or Statutory Authority him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events, or
- (c) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an inducement or reward:
 - (i) for doing or forbearing to do any action in relation to the Contract, or
 - (ii) for showing or forbearing to show favour or disfavour to any person in relation to the Contract,

or if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such inducement or reward as is described in this sub-paragraph (c). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination

In any of these events or circumstances, the Employer may, by Notice Terminate the contract with immediate effect.

The Employer's election to terminate the Contract shall not prejudice any other rights of the Employer, under the Contract or otherwise.

The Contractor shall remove all his plants and machinery from the site then leave the Site and deliver any required Goods, all Contractors' Documents, and other design documents made by or for him, to the Engineer within 7 days from the issue of Notice of Termination, failing which Delay Damages as prescribed for delay in completion of works shall be imposed as per provision of clause 8.7. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice of Termination (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.

After termination, the Employer may complete the Works and/or arrange for any other entities to do so. The Employer and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor for completing the work.

15.3 Valuation at Date of Termination

As soon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract. For this purpose, the contractor shall be notified the date for witnessing of measurements and handing over of the materials for which contractor has already been paid. In case the contractor fails to attend or send a representative even after such notice, the Engineer shall ex parte proceed with measurements of the works executed and taking over of plants and materials etc. for which payment has already been made to the contractor, which shall be treated as final.

15.4 Payment after Termination

After a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Employer may:

- (a) proceed in accordance with Sub-Clause 2.5 [Employer's Claims],
- (b) encash the Performance Guarantee and forfeit the Performance

Security:

- i) In full including additional Performance Guarantee amount if any taken in terms of sub clause 35.5 of ITB and not due for release on the date of issue of termination letter, in case of termination of the contract as a whole; Or
- ii) in part/parts proportionate to the contract price of the bill/schedule to which the terminated part of work belongs i.e.

$P = (A \times B) \div C$ where,

P = Proportionate Bank Guarantee Amount

A = Contract Price of the particular bill/schedule to which the terminated part of work belongs

B = Performance Guarantee amount in terms of GCC sub clause 4.2

C = Total Contract Price

Plus additional Performance Guarantee amount if any taken in terms of sub clause 35.5 of ITB and not due for release on the date of issue of termination letter against that particular bill/Schedule to which the terminated part of the work belongs in case of termination in part/parts.

- (c) release any payment due to the contractor for works executed prior to termination and evaluation under clause 15.3 (valuation at date of termination, however, if by this time the Contractor has failed to make a payment due to the Employer, the same will be deducted from the payment due and any balance remaining shall then be paid to the Contractor.)

15.5 Employer's Entitlement to Termination for Convenience

The Employer shall be entitled to terminate the Contract, at any time for the Employer's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 28 days after the later of the dates on which the Contractor receives this notice or the Employer returns the Performance Security. The Employer shall not terminate the Contract under this Sub-Clause in order to execute the Works himself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor].

After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 19.1 [Payment and Release in case of Optional Termination].

15.6 Corrupt or Fraudulent Practices

If the Employer determines that the Contractor has engaged in corrupt, fraudulent, collusive or coercive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days' notice to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site, and the provisions of Clause 15 shall apply as if such expulsion had been made under Sub-Clause 15.2.

For the purposes of this Sub-Clause:

- (a) *"corrupt practice" means the offering, giving, receiving of soliciting of anything of value to influence the action of a public official in the procurement process or in the Contract execution.*
- (b) *"fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of the Contract to the detriment of the Employer, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.*
- (c) *"collusive practice" means a scheme or arrangement between two or more bidders, with or without the knowledge of the Employer, designed to establish bid prices at artificial, noncompetitive levels.*
- (d) *"coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract.*

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17.1 Indemnities

The Contractor shall indemnify and hold harmless the Employer, the Employer's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

- (a) bodily injury, sickness, disease or death, of any person including railway user whatsoever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and
- (b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

The Employer shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in sub-paragraphs (d)(i), (ii) and (iii) of Sub-Clause 18.3 [Insurance Against Injury to Persons and Damage to Property].

17.2 Contractor's Care of the Works

The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Employer. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Employer.

After responsibility has accordingly passed to the Employer, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractor is responsible for their care, from any cause not listed in Sub-Clause 17.3 [Employer's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.

The Contractor shall be liable for any loss or damage caused by any actions performed

by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

17.3 Employer's Risks

The risks referred to in Sub-Clause 17.4 below, insofar as they directly affect the execution of the works in the Country, are:

- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, within the Country,
- (c) riot, commotion or disorder within the Country by persons other than the Contractor's Personnel,
- (d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, within the Country, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity,
- (e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
- (f) use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract,
- (g) design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible, and
- (h) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventative precautions.

17.4 Consequences of Employer's Risks

If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Engineer and shall rectify this loss or damage to the extent required by the Engineer.

If the Contractor suffers delay and/or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (f) and (g) of Sub-Clause 17.3 [Employer's Risks], Cost shall be payable.

After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

17.5 Intellectual and Industrial Property Rights

In this Sub-Clause, “infringement” means an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and “claim” means a claim (or proceedings pursuing a claim) alleging an infringement.

Whenever a Party does not give notice to the other Party of any claim within 28 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

The Employer shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

- (a) an unavoidable result of the Contractor’s compliance with the Contract, or
- (b) a result of any Works being used by the Employer:
 - (i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
 - (ii) in conjunction with any thing not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

17.6 Limitation of Liability

Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract, provided that this exclusion shall not apply to any obligation of the Contractor to pay Delay Damages to the Employer under Sub-Clause 8.7 [Delay Damages].

The total liability of the Contractor to the Employer, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Employer’s Equipment and Free-Issue Material], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum as specified in the Contract Data or if nothing is specified in the Contract Data, the accepted Contract Amount.

This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

17.7 Use of Employer’s Accommodation/ Facilities

The Contractor shall take full responsibility for the care of the Employer provided

accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).

If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Employer is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

KRIDE

18	Insurance
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18.1 General Requirements for Insurances

In this Clause, “insuring Party” means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.

Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Employer. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Employer shall act for Employer’s Personnel, (ii)

additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.

Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

The relevant insuring Party shall, within the respective periods stated in the Contract Data (calculated from the Commencement Date), submit to the other Party:

- (a) evidence that the insurances described in this Clause have been effected, and
- (b) copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub-Clause 18.3 [Insurance against Injury to Persons and Damage to Property].
- (c) If the contractor fails to submit evidence and copies of the policies as mentioned in (a) & (b) above to prove that the policies have been obtained within the period specified in the contract data, and submits the same later on and from the submitted evidence it is found that the policies have not been obtained within the period specified, the Employer shall recover double the cost of the premium for the period the policies have been delayed.

When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.

Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.

Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or attempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.

If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contract, or fails to provide satisfactory evidence and copies of policies in accordance with this Sub-Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay double the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.

Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Employer, under the other terms of the Contract or otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Employer in accordance with these obligations, liabilities or responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the

Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.

Payments by one Party to the other Party shall be subject to Sub-Clause 2.5 [Employer's Claims] or Sub-Clause 20.1 [Contractor's Claims], as applicable.

The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.

18.2 Insurance for Works and Contractor's Equipment

The Contractor shall insure the Works, Plant, Materials, including those issued by the Employer and Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit, subject to a maximum value indicated in Contract Data.. This insurance shall be effective from the date by which the evidence is to be submitted under sub-paragraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.

The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).

The insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

Unless otherwise stated in the Special Conditions of Contract, insurances under this Sub-Clause:

- (a) shall be effected and maintained by the Contractor as insuring Party,
- (b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated between the Parties for the sole purpose of rectifying the loss or damage,
- (c) shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Employer's Risks],
- (d) shall also cover loss or damage to a part of the Works which is attributable to the use or occupation by the Employer of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h) of Sub-Clause 17.3 [Employer's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated in the Contract Data (if an amount is not so stated, this sub-paragraph (d) shall not apply), and
- (e) may however exclude loss of, damage to, and reinstatement of:

- i) part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),
- ii) a part of the Works which is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship,
- iii) a part of the Works which has been taken over by the Employer, except to the extent that the Contractor is liable for the loss or damage, and
- iv) Goods while they are not in the Country, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Employer, with supporting particulars. The Employer shall then (i) be entitled subject to Sub-Clause 2.5 [Employer's Claims] to payment of an amount equivalent to such commercially reasonable terms as the Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].

18.3 Insurance against injury to Persons and Damage to Property

The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

This insurance shall be for a limit per occurrence of not less than the amount stated in the Contract Data, with no limit on the number of occurrences. If an amount is not stated in the Contract Data, this Sub-Clause shall not apply.

Unless otherwise stated in the Special Conditions of Contract, the insurances specified in this Sub-Clause:

- (a) shall be effected and maintained by the Contractor as insuring Party,
- (b) shall be in the joint names of the Parties,
- (c) shall be extended to cover liability for all loss and damage to the Employer's property including Railways Property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract, and
- (d) may however exclude liability to the extent that it arises from:
 - (i) the Employer's right to have the Permanent Works executed on, over, under, in or through any land, and to occupy this land for the Permanent Works,
 - (ii) damage which is an unavoidable result of the Contractor's obligations to execute the Works and remedy any defects, and
 - (iii) a cause listed in Sub-Clause 17.3 [Employer's Risks], except to the extent

that cover is available at commercially reasonable terms.

18.4 Insurance for Contractor's Personnel

The Contractor shall abide by the provisions of ESIC Act, 1948 (extended from time to time) to take care of insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness or disease. In addition the contractor shall also maintain insurance against liability for claim of death of any person employed by the Contractor or any other of the Contractor's Personnel.

The Employer and the Engineer shall also be indemnified under the policy of insurance, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer's Personnel.

The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

19	Force Majeure
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If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics, strikes, lockouts or acts of God (hereinafter referred to 'events') provided, notice of the happening of any such event is given by either party to the other within 14 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and decision of the Engineer as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a continuous period exceeding 84 days, either party may at its option terminate the contract by giving notice to the other party.

19.1 Payment and Release in case of Optional Termination

Upon such termination, the Engineer shall determine the value of the work done and issue a Payment Certificate which shall include :

- (a) The amounts payable for any work carried out for which a price is stated in the contract;
- (b) The Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the contractor is liable to accept delivery; this Plant and materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, the Contractor shall place the same at the Employer's disposal;
- (c) Other Costs or liabilities supported by necessary documentary evidence which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works as per mutually agreed programme.
- (d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost).

20	Claims, Disputes and Arbitration
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20.1 Contractor's Claims

If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or

otherwise in connection with the Contract, the Contractor shall give notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Engineer to inspect all these records, and shall (if instructed) submit copies to the Engineer.

Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- (a) this fully detailed claim shall be considered as interim;
- (b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Engineer may reasonably require; and
- (c) the Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Engineer and approved by the Contractor, the Engineer shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within such time.

Each Payment Certificate shall include such amounts for any claim as have been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

The Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall

take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.

20.2 Amicable Settlement

In case any dispute between the Engineer and the Contractor for which claim has already been made by the contractor, remains unresolved, the Contractor shall, then, give notice of dissatisfaction and intention to commence arbitration to the Employer duly specifying the subject of the dispute or difference as also the amount of claim item wise. The Parties shall make attempts to settle the dispute amicably before the commencement of arbitration as per procedure by KRIDE. However, unless both Parties agree otherwise, demand for arbitration may be made by the contractor after ninety days from the day on which a notice of dissatisfaction and intention to commence arbitration was given, even if no attempt at amicable settlement has been made.

Procedure for Amicable Settlement in contracts

1. Amicable Settlement Committee at senior management level shall make an attempt to resolve the issues/disputes within 90 days of request by the contractor.
2. The committee shall comprise of the following:-
 - (i) GM /K RIDE directly in-charge of the project;
 - (ii) Concerned finance officer, and
 - (iii) GM /K RIDE (in the same order) directly in-charge of the project of other discipline(s) in case the issues involve other discipline(s) of the engineering
3. Whenever the contractor submits a request for amicable settlement, MD/K RIDE should forward the same to concerned GM /K RIDE (in the same order) directly in-charge of the project. GM /K RIDE on receipt of the same shall issue a note to the concerned finance officer and concerned GM/K RIDE of other discipline in case the issues involved other discipline(s) of engineering, about the request for amicable settlement to be dealt by them and fix a date in consultation with them for a hearing. The date should then be communicated to the MD/K RIDE, GM/ /K RIDE of other department (if the issues involved their department) and contractor for presenting their case before the Amicable Settlement Committee.
4. This being an additional workload like arbitration, the Committee members shall be paid fee by KRIDE at the rates payable to the Arbitrators of KRIDE.

20.3 Arbitration

Any dispute, in respect of which amicable settlement has not been reached, arising between the Employer and the Domestic or Foreign Contractor related to any matter arising out of or connected with this contract, then the contractor shall be entitled to demand in writing that the dispute or difference be referred to arbitration.

Only such dispute(s) or difference(s) in respect of which the demand had been made

for amicable settlement under GCC 20.2 but could not be settled, shall be referred to arbitration subject to the condition that cumulative amount of claims in the contract is not exceeding 20% of the contract price. In case the cumulative amount of claims exceeds 20% of the contract price, arbitration clause will not be applicable.

The Arbitration proceedings shall commence from the day, a written and duly quantified demand for arbitration is received by Managing Director, Rail Infrastructure Development Company (Karnataka) Limited, Bangalore /K RIDE).

The disputes so referred to arbitration shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996 and any statutory modification or re-enactment thereof.

Further, it is agreed between the parties as under:

20.3.1

Number of Arbitrators: The arbitral tribunal shall consist of three arbitrators.

20.3.2

Procedure for Appointment of Arbitrators: The arbitrators shall be appointed as per following procedure:

- (a) The Contractor, while invoking demand for arbitration, shall submit to MD/K RIDE, claims duly quantified along with name and contact details of his nominee arbitrator. Thereafter, he Employer will nominate his nominee arbitrator within a period of 30 days from receipt of such demand from the Contractor and will issue letter of appointment to both the arbitrators appointed by the parties with a copy to the Contractor.
- (b) The third Arbitrator shall be chosen by the two Arbitrators so appointed by the parties and shall act as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the parties to reach upon consensus within a period of 30 days from the appointment of the Arbitrators subsequently appointed, then, upon the request of either or both parties, the Presiding Arbitrator shall be appointed by the Managing Director, Rail Infrastructure Development Company (Karnataka) Limited, Bangalore.
- (c) If one or more of the arbitrators appointed as above refuses to act as arbitrator, withdraws from his office as arbitrator, or vacates his/their office/offices or is/are unable or unwilling to perform his functions as arbitrator for any reason whatsoever or dies or in the opinion of the concerned GM/K RIDE fails to act without undue delay, the MD/K RIDE shall appoint new arbitrator/arbitrators to act in his/their place except in case of new Presiding Arbitrator who shall be chosen following the same procedure as mentioned in para (b) above. Such re-constituted Tribunal may, at its discretion, proceed with the reference from the stage at which it was left by the previous arbitrator(s).

20.3.3

Qualification and Experience of Arbitrators (to be appointed as per sub-clause 20.3.2 above): The contract being of specialized nature requiring knowledge and experience of dealing with construction contracts, the arbitrators to be appointed shall

have minimum qualification and experience as under:

Arbitrator shall be;

a working/retired officer (not below E-9 grade and above in a PSU with which K RIDE has no business relationship) of any discipline of Engineering or Accounts/Finance department, having experience in Contract Management of construction contracts; or

a retired officer (retired not below the HAG level) of any Engineering/Accounts Services of Central Government, having experience in Contract Management of construction contracts; or a retired officer who should have retired more than 3 years previously from the date of appointment as Arbitrator (retired not below E-9 grade in K RIDE or a PSU with which K RIDE has a business relationship) of any Engineering discipline or Accounts department, having experience in Contract Management of construction contracts.

20.3.4

No person other than the persons appointed as per above procedure and having above qualification and experience shall act as Arbitrator. In case any person having the qualification and experience other than that mentioned above is nominated as arbitrator, the arbitration clause shall cease to exist and shall not be applicable.

No new claim, except as otherwise mutually agreed by the Parties, shall be added during proceedings by either party. However, a party may amend or supplement the original claim or defence thereof during the course of arbitration proceedings subject to acceptance by Tribunal having due regard to the delay in making it.

20.3.5

Neither party shall be limited in the proceedings before such arbitrators to the evidence nor did arguments previously put before during amicable settlement.

20.3.6

The reference to arbitration may proceed, notwithstanding that the Works shall not then be or be alleged to be complete, provided always that the obligations of the Employer, the Engineer and the Contractor shall not be altered by the reason of the arbitration being conducted during the progress of the Works. Neither party shall be entitled to suspend the Works, nor shall payment to the Contractor be withheld on account of such proceedings

20.3.7

If the contractor(s) does/do not prefer his/their specific and final claims in writing, within a period of 90 days of receiving the intimation from the Employer/Engineer that the final bill is ready for signature of the contractor(s), he/they will be deemed to have waived his/their claim(s) and the Employer shall be discharged and released of all liabilities under the contract in respect of these claims.

20.3.8 Arbitration proceedings shall be held at Bangalore, India or at a place where GM(CIVIL)/K RIDE's (dealing the contract) office is located, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be in English.

20.3.9

The Arbitral Tribunal should record day to day proceedings. The proceedings shall normally be conducted on the basis of documents and written statements.

All arbitration awards shall be in writing and shall state item wise, the sum and detailed reasons upon which it is based.

20.3.10

Any ruling on award shall be made by a majority of members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.

A party may apply for correction of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award of a tribunal and interpretation of specific point of award to tribunal within 60 days of the receipt of award.

A party may apply to tribunal within 60 days of receipt of award to make an additional award as to claims presented in the arbitral proceedings but omitted from the arbitral award.

20.3.11

Where the Arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period till the date on which the award is made.

20.3.12

The fees and other charges of the conciliator/arbitrators shall be as per the fee structure fixed by the employer as amended from time to time irrespective of the fact whether the Arbitrator(s) is/are appointed by the parties or by the Court of law unless specifically directed by Hon'ble Court otherwise on the matter, and shall be shared equally by the Employer and the Contractor. However, the expenses incurred by each party in connection with the preparation, presentation will be borne by itself

21. Jurisdiction of courts

The Contract Agreement shall be subject to exclusive jurisdiction of Courts as indicated in the Contract Data.

**SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS
ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK**

(The laws as current on the date of bid opening will apply)

- a) **Workmen Compensation Act 1923:** The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- b) **Payment of Gratuity Act 1972:** Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more or on death the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- c) **Employees P.F. and Miscellaneous Provision Act 1952 (since amended):** The Act Provides for monthly contributions by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are :
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) payment of P.F. accumulation on retirement/death etc.
- d) **Maternity Benefit Act 1951:** The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- e) **Contract Labour (Regulation & Abolition) Act 1970:** The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.
- f) **Minimum Wages Act 1948:** The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.
- g) **Payment of Wages Act 1936:** It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- h) **Equal Remuneration Act 1979:** The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.

- i) **Payment of Bonus Act 1965:** The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs.3500/-per month or less. The bonus to be paid to employees getting Rs.2500/- per month or above upto Rs.3500/- per month shall be worked out by taking wages as Rs.2500/-per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.
- j) **Industrial Disputes Act 1947:** The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- k) **Industrial Employment (Standing Orders) Act 1946:** It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.
- l) **Trade Unions Act 1926:** The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
- m) **Child Labour (Prohibition & Regulation) Act 1986:** The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.
- n) **Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979:** The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home upto the establishment and back, etc.
- o) **The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996:** All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

As per Central Government's Notification No.S.O.2899 dated 26.09.1996 under this act, the cess shall be levied @1% of cost of construction works which shall be deducted from each bill of the payment due to the contractor.

- p) **Factories Act 1948:** The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.
- q) **The Employees State Insurance Act, 1948 (Act No. 34 of 1948) (Provisions as extended from time to time):**An Act to provide for certain benefits to employees in case of sickness, maternity and 'employment injury' and to make provision for certain other matters in relation thereto.

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Section 7	Special Conditions of Contract (SCC)
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Section 7**Contract Data****Common to all Packages**

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

Conditions	Reference to GCC	Data
Employer's name and address	1.1.2.2 & 1.3	Rail Infrastructure Development Company (Karnataka) Limited (A Joint venture of GoK and MoR) MSIL House, 7th Floor, #36, Cunningham Road Bangalore – 560052 Tele: 91-80-22370582 Fax: 91-80-22370581
Employer's Representative	1.1.2.6	General Manager (Civil), Rail Infrastructure Development Company (Karnataka) Limited MSIL House, 7th Floor, #36, Cunningham Road Bangalore – 560052 Tele: 91-80-22370582 Fax: 91-80-22370581 E – Mail: md@kride.in
Engineer's name and address	1.1.2.4 & 1.3 (b)	<i>Will be notified later</i>
Defects Notification Period	1.1.3.7	180 days.
Electronic transmission systems	1.3 (a)	Not permitted
Address for Communication to Employer	1.3 (b)	General Manager (Civil), Rail Infrastructure Development Company (Karnataka) Limited MSIL House, 7th Floor, #36, Cunningham Road Bangalore – 560052 Tele: 91-80-22370582 Fax: 91-80-22370581 E – Mail: md@kride.in
Governing Law	1.4	The Laws of Republic of India
Ruling language	1.4	English
Language for communications	1.4	English

Conditions	Reference to GCC	Data
Time for access to Site (after the date of commencement)	2.1	Starting from the Date of Commencement, the section will be progressively handed over in 90 days.
Performance Security	4.2 & 11.9	<p>(a) The Performance Security shall be for an amount of 10% (Ten percent) of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract amount in the prescribed form for the stated amount valid for a period of 28 days beyond issue of performance certificate. The contractor shall have the following options;</p> <p>(i) to submit full performance security for an amount equal to 10% of the contract price; or</p> <p>(ii) to submit part performance security for an amount equal to 5% of the contract price and the balance performance security shall be recovered from interim payment certificates @ 10% of the bill amount starting from 1st bill till it reaches full Performance Security. The contractor shall not be entitled to any interest on the amounts so recovered. However, the contractor shall be entitled for release of recovered amount of performance security against submission of bank guarantee of an equivalent amount, maximum three times during the contract.</p> <p>(b) Additional Performance Security, if any, shall be for an amount as determined by Employer in terms of ITB 35.5 and informed through letter of award and in the same currency(ies) of the Accepted Contract amount in the prescribed form valid for a period of 28 days beyond issue of performance certificate.</p>
Normal working hours	6.5	Sunrise to Sunset (This may be modified to suit the work requirements).
Commencement of works	8.1	Within fifteen (15) days from the date Contractor receives Letter of acceptance.
Maximum amount of delay damages	8.7	10% (ten percent) of the Contract Price.

Conditions	Reference to GCC	Data					
Amount of bonus for early completion	8.13	1% of the Contract Price per month (part of the month to be excluded) for substantial completion of work.					
Maximum limit of bonus	8.13	5% of Contract Price.					
State Capital Applicable		Bangalore					
Mobilization advance payment	14.2.1	<div>Comprises of the percentage of Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable and in installments as mentioned below;</div> <table><tr><th>Mobilisation Advance</th><th>Installments</th></tr><tr><td>As per request of the Contractor subject to a maximum of 5%</td><td>Two Equal</td></tr></table>		Mobilisation Advance	Installments	As per request of the Contractor subject to a maximum of 5%	Two Equal
Mobilisation Advance	Installments						
As per request of the Contractor subject to a maximum of 5%	Two Equal						
Timing of Mobilization Advance Payment	14.2.1	<div>First Installment within 21 (Twenty one) days from the date of receipt of guarantee acceptable to Employer.</div> <div>Second Installment shall be released only when the contractor submits statement of having utilized the First Installment of mobilization Advance and the Employer is satisfied that the utilization has been done in purposeful manner. This shall be released within 21 days from the date of receipt of guarantee acceptable to the Employer.</div>					
Advance Payment against Plant and Machinery	14.2.2	The total advance for Plant and Machinery shall be limited to 5% of the Contract price. Each time advance shall be paid within 21 days from the date of receipt of guarantee acceptable to the Employer subject to the fulfillment of other conditions of the sub-clause.					
Interest on Advance Payment	14.2.1 & 14.2.2	At the rate of 8.95% simple interest per annum on reducing balances.					

Conditions	Reference to GCC	Data
Repayment rate of Advance payment	14.2.4	<p>13.5% (Thirteen and half percent) of the amount of each payment if the advance taken is 10% of the contract price.</p> <p>20% (Twenty percent) of the amount of each payment if the advance taken is 15% of the contract price.</p> <p>If the total advance taken is less, the rate of recovery shall be proportionate.</p> <p>In case further advance is taken under sub-clause 14.2.1 and/or 14.2.2, after repayment has already been started, the Repayment Rate (R%) shall be revised in the next payment certificate as per following formula;</p> <p>$R = A \times 100 / (80 - \% \text{ financial progress till previous payment certificate})$</p> <p>Where 'A' is total outstanding Advance as a percentage of Contract Price.</p> <p>If the Contractor returns part of the advance amount on his own or on the instructions of the Employer or in the event that the Contractor has failed to deposit the advance amount as per demand of the Employer and the Employer has subsequently encashed the Bank Guarantee(s), then the rate of recovery shall be suitably reworked considering the balance amount of advance due to be recovered and to ensure that the complete recovery of advance and accrued interest is made within 80% of the financial progress.</p>
Percentage of Retention Money	14.3	<p>Retention money shall be deducted @ 2% of the total value of 'exclusive supply items' of BOQ</p> <ol style="list-style-type: none"> against which last installment of stage payment is included in the interim payment certificate for items having stage payment condition; full payment against items (not having any stage payment condition) included in the interim payment certificate. <p>It is clarified that retention money is not applicable to advance payment under clause 14.5(c).</p>
Limit of Retention Money	14.3	2% of the Contract Price
Plant and Materials	14.5 (b)	Not applicable

7.6	Accepted Co
18.1	a) 14 day b) 28 day

Section 7 - Particular Conditions of Contract
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Section 8

Contract Forms

Section 8

Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

All italicized text is for guidance how to prepare the various forms and shall be deleted from the final documents.

Table of Forms

Title	Form No	Page No
Form of Contract Performance Security	Form No. COF/3	292-293
Form of additional Performance Security	--	294-296
Advance Payment Security	--	297-300
Indemnity bond for the safe custody of the plant and materials supplied by the contractor	--	301-304
Form of Bank Guarantee For Release of Balance Retention Money	--	305-307

COF/3

**FORM OF CONTRACT PERFORMANCE
SECURITY (BANK GUARANTEE)**
[Refer Clause 41 of Instructions to Bidders]

(On non-judicial stamp paper of the appropriate value in accordance with stamp Act. The stamp paper to be in the name of Executing Bank).

From:

Name and Address of the Bank.....

To:

The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
MSIL House, 7th Floor,
#36, Cunningham Road,
Bangalore – 560052

WHEREAS, Rail Infrastructure Development Company (Karnataka) Limited, hereinafter called the **Employer**, acting through **[Insert Designation and address of the Employer's Representative]**, has accepted the bid of **[Insert Name and address of the Contractor]**, hereinafter called the **Contractor**, for the work of **[Insert Name of Work]**, vide Notification of Award No. **[Insert Notification of Award No.]**.

AND

WHEREAS, the contractor is required to furnish Performance Security for the sum of **[Insert Value of Performance Security required]**, in the form of bank guarantee, being a condition precedent to the signing of the contract agreement.

WHEREAS, **[Insert Name of the Bank]**, with its Branch **[Address]** having its Headquarters office at **[Address]**, hereinafter called the **Bank**, acting through **[Designation(s) of the authorised person of the Bank]**, have, at the request of the **[Insert name of the JV partner]**, a JV partner on behalf of the contractor, agreed to give guarantee for performance security and additional performance security as hereinafter contained:

- 1 KNOW ALL MEN by these present that I/We the undersigned **[Insert name(s) of authorized representatives of the Bank]**, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee to pay the Employer the full amount in the sum of **[Insert Value of Performance Security required]** as above stated.
- 2 The Bank undertakes to immediately pay on presentation of demand by the Employer any amount up to and including aforementioned full amount

- without any demur, reservation or recourse. Any such demand made by the Employer on the Bank shall be final, conclusive and binding, absolute and unequivocal notwithstanding any disputes raised/ pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Employer of Bank..
- 3 On payment of any amount less than aforementioned full amount, as per demand of the Employer, the guarantee shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the Employer.
 - 4 The Bank shall pay the amount as demanded immediately on presentation of the demand by Employer without any reference to the contractor and without the Employer being required to show grounds or give reasons for its demand or the amount demanded.
 - 5 The Bank Guarantee shall be unconditional and irrevocable.
 - 6 The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Contractor.
 - 7 The Bank agrees that no change, addition, modifications to the terms of the Contract Agreement or to any documents, which have been or may be made between the Employer and the Contractor, will in any way release us from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification to the Bank.
 - 8 This guarantee is valid and effective from the date of its issue, which is ***[insert date of issue]***. The guarantee and our obligations under it will expire on ***[Insert the date twenty eight days after the expected end of defect liability period]***. All demands for payment under the guarantee must be received by us on or before that date.
 - 9 The Bank agrees that the Employers right to demand payment of aforementioned full amount in one instance or demand payments in parts totaling up to the aforementioned full amount in several instances will be valid until either the aforementioned full amount is paid to the Employer or the guarantee is released by Employer before the Expiry date.
 - 10 The Bank agrees that its obligation to pay any amount demanded by the Employer before the expiry of this guarantee will continue until the amount demanded has been paid in full.
 - 11 The expressions Bank and Employer herein before used shall include their respective successors and assigns.
 - 12 The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the employer. This guarantee

is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.

- 13 The Guarantee shall be in addition to and without prejudice to any other security Guarantee (s) of the contractor in favour of the Employer available with the Employer. The Bank, under this Guarantee, shall be deemed as Principal Debtor of the Employer.

Date

Place.....

.....
[Signature of Authorised person of Bank]

.....
[Name in Block letters]

.....
[Designation]

.....
[P/Attorney] No.

.....
Bank's Seal

[P/Attorney] No.

Witness:

1. Signature
Name & Address & Seal
2. Signature
Name & address & Seal

Note :

1. All italicized text is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.
2. In case the guarantee is issued by a foreign Bank, which does not have operations in India, the said bank shall have to provide a counter-guarantee by State Bank of India.
3. In case the Contractor is a JV, the Performance Security is required to be furnished on behalf of the JV in favour of the Employer by the JV Partners in proportion of their respective percentage share specified in the JV Agreement. The percentage share of M/s **[Insert Name of the JV Partner]** in the JV is **[Fill share % in the JV]** percent. All the Bank Guarantee of JV Partners are liable to be encashed cumulatively.

**FORM OF ADDITIONAL PERFORMANCE SECURITY
(BANK GUARANTEE)**

[Refer Clause 35.5 of Instructions to Bidders]

*(On non-judicial stamp paper of the appropriate value in accordance with stamp Act.
The stamp paper to be in the name of Executing Bank)*

From:

Name and Address of the Bank.....
.....

To:

The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
MSIL House, 7th Floor,
#36, Cunningham Road
Bangalore – 560052

WHEREAS, Rail Infrastructure Development Company (Karnataka) Limited, hereinafter called the **Employer**, acting through **[Insert Designation and address of the Employer's Representative]**, has accepted the bid of **[Insert Name and address of the Contractor]**, hereinafter called the **Contractor**, for the work of **[Insert Name of Work]**, vide Notification of Award No. **[Insert Notification of Award No.]**.

AND

WHEREAS, the contractor is required to furnish additional Performance Security for the sum of **[Insert Value of additional Performance Security required]**, in the form of bank guarantee, being a condition precedent to the signing of the contract agreement.

WHEREAS, **[Insert Name of the Bank]**, with its Branch **[Address]** having its Headquarters office at **[Address]**, hereinafter called the **Bank**, acting through **[Designation(s) of the authorised person of the Bank]**, have, at the request of the [Insert name of the JV partner], a JV partner on behalf of the contractor, agreed to give guarantee for additional performance security as hereinafter contained:

- 1 KNOW ALL MEN by these present that I/We the undersigned **[Insert name(s) of authorized representatives of the Bank]**, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee to pay the Employer the full amount in the sum of **[Insert Value of additional Performance Security required]** as above stated.
- 2 The Bank undertakes to immediately pay on presentation of demand by the Employer any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Employer on the Bank shall be final, conclusive and binding, absolute and unequivocal notwithstanding any disputes raised/ pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Employer of Bank.

- 3 On payment of any amount less than aforementioned full amount, as per demand of the Employer, the guarantee shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the Employer.
- 4 The Bank shall pay the amount as demanded immediately on presentation of the demand by Employer without any reference to the contractor and without the Employer being required to show grounds or give reasons for its demand or the amount demanded.
- 5 The Bank Guarantee shall be unconditional and irrevocable.
- 6 The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Contractor.
- 7 The Bank agrees that no change, addition, modifications to the terms of the Contract Agreement or to any documents, which have been or may be made between the Employer and the Contractor, will in any way release us from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification to the Bank.
- 8 This guarantee is valid and effective from the date of its issue, which is ***[insert date of issue]***. The guarantee and our obligations under it will expire on ***[Insert the date twenty eight days after the expected end of defect liability period]***. All demands for payment under the guarantee must be received by us on or before that date.
- 9 The Bank agrees that the Employers right to demand payment of aforementioned full amount in one instance or demand payments in parts totaling up to the aforementioned full amount in several instances will be valid until either the aforementioned full amount is paid to the Employer or the guarantee is released by Employer before the Expiry date.
- 10 The Bank agrees that its obligation to pay any amount demanded by the Employer before the expiry of this guarantee will continue until the amount demanded has been paid in full.
- 11 The expressions Bank and Employer herein before used shall include their respective successors and assigns.

- 12 The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the employer. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.
- 13 The Guarantee shall be in addition to and without prejudice to any other security Guarantee(s) of the contractor in favour of the Employer available with the Employer. The Bank, under this Guarantee, shall be deemed as Principal Debtor of the Employer.

Date

Place.....

.....
[Signature of Authorised person of Bank]

.....
[Name in Block letters]

.....
[Designation]

.....
[P/Attorney] No.

.....
Bank's Seal

.....
[P/Attorney] No.....

Witness:

1. Signature
Name & Address & Seal
2. Signature
Name & address & Seal

Note :

- 1 All italicized text is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.
- 2 In case the guarantee is issued by a foreign Bank, which does not have operations in India, the said bank shall have to provide a counter-guarantee by State Bank of India.
- 3 The Bank Guarantee should be duly attested by Notary public with notarial stamp of appropriate value affixed thereon.
- 4 In case the Contractor is a JV, the additional Performance Security is required to be furnished on behalf of the JV in favour of the Employer by the JV Partner(s) who is responsible for execution of schedule(s) (as per JV agreement) against which additional Performance Security is required to be submitted in terms of ITB 35.5. All the Bank Guarantee of JV Partners are liable to be encashed cumulatively.

Advance Payment Security

[Refer Clause 14.2 of GCC]

***(On non-judicial stamp paper of appropriate value in accordance with stamp Act.
The stamp paper to be in the name of Executing Bank)***

From

[Name and Address of the Bank]

To

The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
MSIL House, 7th Floor,
#36, Cunningham Road
Bangalore – 560052

Beneficiary: Rail Infrastructure Development Company (Karnataka) Limited.

Guarantee No.: *[.....reference number of the guarantee.....]* **Dated:** *[.....]*

WHEREAS, Rail Infrastructure Development Company (Karnataka) Limited **(hereinafter called the Employer)** has entered into Contract No. *[....reference number of the Contract....]* dated *[.....]* for the execution of *[name of the contract]* **(hereinafter called the Contract)** with *[....name of the Contractor....]* **(hereinafter called the Contractor)**.

WHEREAS, according to the Conditions of the Contract, an advance payment is admissible to the contractor against submission of bank guarantee(s).

At the request of the Contractor, we *[....name of the Bank....]* with our branch at *[....address....]*, having our Head Office at *[....address....]* **(hereinafter called the Bank)** have, at the request of *[.....Insert name of the JV partner.....]*, a JV partner on behalf of the Contractor, agreed to give the said guarantee as hereinafter contained:

1. KNOW ALL MEN by these present that I/We the undersigned *[....Insert name(s) of authorized representative(s) of the Bank....]*, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantees to pay the Employer the sum of Rs.*[....value in figure....]* (Rupees *[....value in words....]* only) **(hereinafter called the Full Amount)**.

2. The Bank undertakes to immediately pay to the Employer, without any demur, reservation or recourse, any amount up to and including aforementioned full amount upon first written demand/demands from the Employer.
3. On payment of any amount less than aforementioned full amount, as per demand of the Employer, the guarantee shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the Employer.
4. The Bank shall pay the amount so demanded without any reference to the contractor and without the Employer being required to show grounds or give reasons for its demand or the amount demanded.
5. The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank, the Contractor or the Employer.
6. The Bank agrees that no change, addition, modification to the terms of the Contract Agreement or to any document, which have been or may be made between the Employer and the Contractor, will in any way release us from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification to the Bank.
7. This guarantee is valid and effective from the date of it's issue, which is [*....date of issue....*]. The guarantee and our obligations under it will expire on dated[*....Please refer note 4 & 5....*]. All demands for payment under the guarantee must be received by us on or before that date.
8. The Bank agrees that the Employer's right to demand payment of aforementioned full amount in one instance or demand payments in parts totaling up to the aforementioned full amount in several instances will continue until either the aforementioned full amount is paid to the Employer or the guarantee validity period expires.
9. The Bank agrees that it's obligation to pay any amount demanded by the Employer before the expiry of this guarantee will continue until the amount demanded has been paid in full.
10. The expressions Bank and Employer herein before used shall include their respective successors and assigns.

11. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the employer. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.

Dated[.....]

Place[.....]

.....
(Signature of the Authorized Person of the Bank)

.....
(Name in Block Letters)

.....
(Designation)

.....
(Bank's Seal)

.....
(Authorization No.)

Witness:

1.
Signature, Name & Address

2.
Signature, Name & Address

Note:

1. All italicized text in brackets [....text....] is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.
2. In case the guarantee is issued by a foreign Bank, the said bank shall have operations in India and should be issued by Indian operations branch of the said bank.
3. The Bank Guarantee should be duly attested by Notary Public with notarial stamps of appropriate value affixed thereon.
4. **Mobilization Advance under GCC 14.2.1:**

(a) For Single Entity

For each Installment of Advance, two Bank Guarantees of equal amounts (each equal to half of the first installment of advance plus 10%) shall be furnished. Each Bank Guarantee shall be valid for the stipulated completion period of the contract.

OR

(b) For JV

For each Installment of Advance, individual JV partner shall furnish Bank Guarantee equal to his share in the installment of Advance plus 10%. Each Bank Guarantee shall be valid for the stipulated completion period of the contract.

5. Advance against Plant and Machinery under GCC 14.2.2:

(a) For Single Entity

For each Installment of Advance, a Bank Guarantee equal to the installment of advance plus 10% shall be furnished. The Bank Guarantee shall be valid for the stipulated completion period of the contract.

OR

(b) For JV

For each Installment of Advance, individual JV partner shall furnish a Bank Guarantee equal to his share in the installment of advance plus 10%. Each Bank Guarantee shall be valid for the stipulated completion period of the contract.

**INDEMNITY BOND FOR THE SAFE CUSTODY OF THE PLANT
AND MATERIALS SUPPLIED BY THE CONTRACTOR**

[Refer Clause 14.5 of GCC]

(To be executed on Non-Judicial Stamp Paper of Appropriate Value and notarised)

THIS INDEMNITY BOND made on this _____ day of _____ 20____
by _____ (*insert the name of the Contractor and its registered address*) (hereinafter
called “the Contractor”) which expression shall where the context do admits or implies be
deemed to include its executors, administrators and assigns, in favour of the Rail
Infrastructure Development Company (Karnataka) Limited, MSIL House, 7th Floor, #36,
Cunningham Road, Bangalore – 560052 (hereinafter called “K RIDE”) on the other part.

WHEREAS by an Agreement/Letter of Acceptance No. _____ dated _____
(hereinafter called “the said agreement”), the Contractor has agreed to execute the
_____ (*Name of Work*) (hereinafter called “the Works”).

AND WHEREAS the Contractor has submitted to K RIDE/ the Engineer for payment on
plants & materials procured by him and brought to the site of the Works or his workshop
for use in the Works.

AND WHEREAS K RIDE/ the Engineer has agreed to make advance/stage payment to
the Contractor the total sum of Rs. _____ (*in Figures*) [Rupees
_____ (*in Words*) in Interim Payment Certificate (IPC)
No. _____, the quantities and other particulars of which are detailed in this IPC
for the said works signed by the Contractor on _____ for the Plant and Materials
brought by the Contractor to site of the works or his workshop. Brief details are also
mentioned in schedule 1 appended hereto.

NOW THIS INDEMNITY BOND WITNESS that in pursuance of the said agreement and
in consideration of the sum of Rs. _____ (*in Figures*)
_____ (*in Words*) on or before the execution of these presents to be
paid to the Contractor by K RIDE so aforesaid, the Contractor doth hereby covenant and
agree with K RIDE and declare as follows: -

1. That the said sum of Rs. _____ (In Figures) _____ (in Words) to be paid by K RIDE to the Contractor as aforesaid shall be utilized by the Contractor in or towards the execution of the said works and for no other purpose whatsoever.
2. That the Plant and Materials detailed in the said IPC which have been offered to and accepted by K RIDE/ the Engineer, are absolutely the Contractor's own property and free from encumbrances of any kind and the Contractor will not make any application for or receive any further payment on the Plant and Materials which are not absolutely his own property and free from encumbrances of any kind, the Contractor indemnifies the K RIDE against all claims on any Plant and Materials in respect of which payment is to be made to him as aforesaid.
3. That the Contractor undertakes that the Plant and Materials shall be used exclusively for the performance / execution of the Contract strictly in accordance with the terms and conditions of the Contract and no part of the Plant and Materials shall be utilized for any other work or purpose whatsoever.
4. That the Contractor is obliged and shall remain absolutely responsible for the safe transit / protection and custody of the Plant and Materials against all risks whatsoever including acts of the God till the Plant and Materials are duly incorporated in the works, commissioned and are taken over by K RIDE/Railway (including surplus Plant and Materials, if required as instructed by K RIDE/ the Engineer) in accordance with the terms of the Contract. The Contractor undertakes to keep K RIDE harmless against any loss or damage that may be caused to the Plant and Materials.
5. That the said Plant and Materials shall not on any account be removed from the site of the works except with the written permission of K RIDE/ the Engineer. Further, K RIDE/ the Engineer shall always be free at all times to take possession of the materials in whatever form the materials may be in, if in its opinion, the Plant and Materials are likely to be endangered, mis-utilized or converted to uses other than those specified in the Contract, by any acts or omission or commission on the part of the Contractor or any other person or on account of any reason whatsoever and the Contractor binds himself

and undertakes to comply with the directions of demand of K RIDE to return the Plant and Materials without any demur or reservation.

6. That the said plant and materials shall, at all times, be open to inspection by K RIDE/ the Engineer or any authorized representative. In the event of the said material or any part thereof at any time being found to be in lesser quantity than for which payment has been released or the same has been stolen, destroyed or damaged or becoming deteriorated, the Contractor will forthwith replace the same or repair and make good the same as required by K RIDE/ the Engineer.
7. That making payment does not mean that Plant and Materials are of required specifications and quality or that whole of the quantity brought to site by Contractor will be used in the work. The Contractor is fully responsible for the materials to conform to required quality and specification and if at any time K RIDE/ the Engineer do not find the material satisfactory, the Contractor at his own cost would replace these. K RIDE/ the Engineer would be at liberty to recover cost of these from any dues of the Contractor. Also any Plant and Materials which are in excess of what is finally required under the contract would be the Contractor's property without any liability on K RIDE/ the Engineer who would recover the cost of this from the Contractor.
8. That this Indemnity Bond is irrevocable. If at any time, any loss or damage occurs to the Plant and Materials or the same or any part thereof is mis-utilized in any manner whatsoever, then the Contractor hereby agrees that the decision of K RIDE/ the Engineer as to assessment of loss or damage to the Plant and Materials shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and/or damaged Plant and Materials at its own cost and/or shall pay the amount of loss to K RIDE without any demur, reservation or protest. This is without prejudice to any other right or remedy that may be available to K RIDE/ the Engineer against the Contractor under the Contract or under this Indemnity Bond.
9. That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of those presents, the total amount of the payment shall immediately on the happening of such default be recovered by K RIDE/ the Engineer from any dues of Contractor. It is also clearly understood by the Contractor that non-observance of the obligations under this Indemnity Bond by the Contractor shall inter-alia constitute a criminal breach of trust on the

part of the Contractor for all intents and purpose including legal / penal consequences.

10. IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorized representative, the day, month and year first above mentioned.

11. SCHEDULE 1

Particulars of the Plant and Materials	Quantity	Value of the Plant and Materials

Signed, Sealed and Delivered by the said Contractor

(Contractor's Name)

Dated:

(AUTHORISED SIGNATORY)

Place:

SEAL OF COMPANY

IN THE PRESENCE OF:

WITNESS: SIGNATURE _____

NAME: _____

ADDRESS : _____

Note:

The contractor has the option to submit the Indemnity Bond to cover all the items and quantities of Plant and Materials of stage payment or to submit indemnity bond each time the stage payment is to be taken or Plant and Materials advance is to be taken.

**FORM OF BANK GUARANTEE FOR RELEASE
OF BALANCE RETENTION MONEY**

*(On non-judicial stamp paper of the appropriate value in accordance with stamp Act.
The stamp paper to be in the name of Executing Bank).*

From:

.....
.....*Name and Address of the Bank*.....
.....

To:

The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
MSIL House, 7th Floor,
#36, Cunningham Road
Bangalore – 560052.

- a) WHEREAS, Rail Infrastructure Development Company (Karnataka) Limited, (hereinafter called the **Employer**), acting through **[Insert Designation and address of the Employer's Representative]**, has entered into a contract with **[Insert Name and address of the Contractor's Representative]**, (hereinafter called the **Contractor**), for the work of **[Insert Name of Work]**, vide Notification of Award No. **[Insert Notification of Award No.]**.
- b) WHEREAS as per conditions of contract Employer has deducted an amount of RS **[Insert Amount deducted as retention money]** towards retention money till date, and WHEREAS now the contractor has requested the Employer for releasing the said amount on submission of a bank guarantee of equivalent amount which has been accepted by the Employer. ****

OR

WHEREAS as per conditions of contract Employer has deducted an amount of RS **[Insert Amount deducted as retention money]** towards retention money till date, out of a total amount of Rs **[Insert total Amount of retention money deductible as specified in the contract]** which is due to be deducted as retention money as per Contract agreement and WHEREAS now the Contractor has requested the Employer to accept a bank guarantee of the equivalent amount of the total retention money due as per contract agreement so that the amount already deducted may be released in favour of the contractor and that no further deduction towards retention money will be made in future which has been accepted by the Employer. ****

- c) WHEREAS, **[Insert Name of the Bank]**, with its Branch **[Address]** having its Headquarters office at **[Address]**, hereinafter called the **Bank**, acting through **[Designation(s) of the authorised person of the Bank]**, have, at the request of the contractor, agreed to give guarantee as hereinafter contained:
1. KNOW ALL MEN by these present that I/We the undersigned **[Insert name(s) of authorized representatives of the Bank]**, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee the Employer to pay the full amount in the sum of **[Insert Value of the Bank Guarantee being submitted]** as above stated.
 2. The Bank undertakes to immediately pay to the Employer any amount up to and including aforementioned full amount upon written order/orders from the Employer without any demur, reservation or recourse.
 3. On payment of any amount less than aforementioned full amount, as per demand of the Employer, the guarantee shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the Employer.
 4. The Bank shall pay the amount so demanded without any reference to the contractor and without the Employer being required to show grounds or give reasons for its demand or the amount demanded.
 5. The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Contractor.
 6. The Bank agrees that no change, addition, modifications to the terms of the Contract Agreement or to any documents, which have been or may be made between the Employer and the Contractor, will in any way release us from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification to the Bank.
 7. This guarantee is valid and effective from the date of its issue, which is **[insert date of issue]**. The guarantee and our obligations under it will expire on **[Insert the date twenty eight days after the expected end of defect liability period.]**. All demands for payment under the guarantee must be received by us on or before that date.
 8. The Bank agrees that the Employers right to demand payment of aforementioned full amount in one instance or demand payments in parts totaling up to the aforementioned full amount in several instances will continue

until either the aforementioned full amount is paid to the Employer or the guarantee expires.

9. The Bank agrees that its obligation to pay any amount demanded by the Employer before the expiry of this guarantee will continue until the amount demanded has been paid in full.
10. The expressions Bank and Employer herein before used shall include their respective successors and assigns.
11. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the employer. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.

Date

Place.....

.....
[Signature of Authorised person of Bank]

.....
[Name in Block letters]

.....
[Designation]

.....
.....[Address].....
.....

Witness :

1. *Signature*
Name & Address & Seal
2. *Signature*
Name & address & Seal

Bank's Seal
Authorisation No.....

Note :

- 1) *All italicized text is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.*
- 2) *In case the guarantee is issued by a foreign Bank, the said bank shall have operations in India and should be countersigned by Indian operations branch of the said bank.*
- 3) *The Bank Guarantee should be duly attested by Notary public with notarial stamps of appropriate value affixed thereon.*
- 4) ***** strike out whichever is not applicable.*

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**Rail Infrastructure Development Company (Karnataka) Limited
(A Joint Venture of Govt. of Karnataka & Ministry of Railways)**

**MSIL House, 7th Floor, #36, Cunningham Road, Bangalore – 560052
Tele – 080 22370581, Fax : + 91-80-22370581, web : www.kride.in**

Technical Proposal

BAIYYAPPANAHALLI - HOSUR DOUBLING PROJECT

Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations in Bangalore Division of South Western Railway.

Single Package

Section 9	Bill of Quantities
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Section 9	Bill of Quantities
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I N D E X

SI. NO	Description	Page No
1.	BOQ	308-341

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

SUMMARY OF BILLS OF QUANTITIES

Particulars	Department Value (Rs.)
SCHEDULE - A	18535044
SCHEDULE - B	3760173
SCHEDULE - C	22197000
SCHEDULE - D	25434200
SCHEDULE - E	26412900
SCHEDULE - F	7055000
SCHEDULE - G	319000
SCHEDULE - J	56463500
SCHEDULE - K	15203272
Total	175380089

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule A-USSOR ITEMS - Items of works that are covered by Unified schedule of rates 2011 of South Western Railway

SL. NO	USSOR CODE	Description of Item	Unit	Qty	Rate	Amount
1	181021	Demolishing plain cement concrete including disposal of material within 50m lead : 1:2:4 or richer mix with max. 20 mm coarse aggregate	CUM	200	555.62	111124
2	181022	Demolishing plain cement concrete including disposal of material within 50m lead : Mix leaner than 1:2:4 with coarse aggregate larger than 20mm	CUM	200	342.76	68552
3	181030	Demolishing R.C.C. work including cutting and stacking of steel bars and disposal of unserviceable material within 50m lead. (Extra payment for scraping, cleaning and straightening of bars to be made separately)	CUM	100	810.58	81058
4	181040	Extra over Item Nos. 181021 if pavement breaker is used on orders of Engineer	CUM	300	243.17	72951
5	182013	Demolishing brick work including stacking of serviceable material and disposal of unserviceable material within 50m lead : In cement mortar	CUM	50	469.56	23478
6	186012	Dismantling steel work in single sections including dismembering & stacking within 50m lead in : Channels, angles, tees and flats/ rounds or any other rolled shape	KG	500	0.57	285
7	186020	Dismantling steel work and trusses upto 10m span and 5m height in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50m lead	KG	500	1.36	680
8	182033	Demolishing stone rubble masonry including stacking of serviceable material and disposal of unserviceable material within 50m lead : In cement mortar	CUM	500	560.34	280170
9	192011	Earth work in excavation for foundations and floors of the bridges, retaining walls etc., including setting out, dressing of sides, ramming of bottom, getting out the excavated material, back filling in layers with approved material and consolidation of the layers by ramming and watering etc. incl. all lift, disposal of surplus soil upto a lead of 300 M, all types of shoring and strutting with all labour and material complete as per drawing and technical specification as directed by Engineer in charge : All kinds of soils	CUM	5000	182.73	913650
10	192012	Earth work in excavation for foundations and floors of the bridges, retaining walls etc., including setting out, dressing of sides, ramming of bottom, getting out the excavated material, back filling in layers with approved material and consolidation of the layers by ramming and watering etc. incl. all lift, disposal of surplus soil upto a lead of 300 M, all types of shoring and strutting with all labour and material complete as per drawing and technical specification as directed by Engineer in charge : Ordinary Rock	CUM	1500	237.64	356460

SL. NO	USSOR CODE	Description of Item	Unit	Qty	Rate	Amount
11	192013	Earth work in excavation for foundations and floors of the bridges, retaining walls etc., including setting out, dressing of sides, ramming of bottom, getting out the excavated material, back filling in layers with approved material and consolidation of the layers by ramming and watering etc. incl. all lift, disposal of surplus soil upto a lead of 300 M, all types of shoring and strutting with all labour and material complete as per drawing and technical specification as directed by Engineer in charge : Hard rock (requiring blasting)	CUM	500	371.16	185580
12	192014	Earth work in excavation for foundations and floors of the bridges, retaining walls etc., including setting out, dressing of sides, ramming of bottom, getting out the excavated material, back filling in layers with approved material and consolidation of the layers by ramming and watering etc. incl. all lift, disposal of surplus soil upto a lead of 300 M, all types of shoring and strutting with all labour and material complete as per drawing and technical specification as directed by Engineer in charge : Hard rock (blasting prohibited)	CUM	500	451.19	225595
13	192020a	Extra for the quantity of works, executed in or underwater and/ or liquid mud including pumping out water as required : All kinds of soils (corresponding to item no.192011)	CUM	2000	36.55	73100
14	192020b	Extra for the quantity of works, executed in or underwater and/ or liquid mud including pumping out water as required : Ordinary rock (corresponding to item no 192012)	CUM	1000	47.53	47530
15	192073	Providing, Driving and installing Bored cast in situ Reinforced Cement Concrete piles of specified diameter and length below pile cap in M- 35 grade Design Mix Cement Concrete , using 20 mm graded crushed stone aggregate and coarse sand of approved quality, to carry a safe working load not less than specified, excluding the cost of casing pipe but including the cost of shoe and length of pile to be embedded in pile cap etc complete, concreting by machine batching, machine mixing, scaffolding, using Admixture in recommended proportion(as per IS 9103), if approved in design Mix, placing with tremie pipe, chipping off of pile top to remove laitance concrete above cut off level etc, pumping and bailing out water, with all labour material complete including crossing of tracks if required, as per approved drawing, specification and direction of the Engineer in charge. Length of the pile for payment shall be measured Up to the bottom of pile cap excluding the mud mat. Payment for cement, casing pipe & reinforcement shall be paid extra : 1000mm diameter	Meter	960	6617.05	6352368
16	192092	Extra for chieselling in addition to boring of piles if chieselling is resorted to in hard rock or big stone boulders larger than 30 cm depth by any means i.e. by chiesel or manual chiesel and hammer method : 1000mm Diameter pile	Meter	40	1302.32	52092.8

SL. NO	USSOR CODE	Description of Item	Unit	Qty	Rate	Amount
17	192080	Providing, fabricating and installing of casing pipe for bored piles for all diameters with specified thickness of steel plate including all labour, materials, pumping and bailing out water where ever required, complete as per technical specifications as directed by Engineer in charge. This will include the weight of plate only and no cognizance will be given for the fittings i.e. rivets and welding etc	MT	60	53634.82	3218089.2
18	192103	Conducting load testing of a single pile Up to following capacity in accordance with IS 2911(Part IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc with all labour, material, tool & plants, equipment, machinery, etc complete as per drawing and specification, as directed by the Engineer : Initial load test above 100 ton capacity Up to 250 T capacity pile	EACH	2	82495.54	164991.08
19	192104	Conducting load testing of a single pile Up to following capacity in accordance with IS 2911(Part IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc with all labour, material, tool & plants, equipment, machinery, etc complete as per drawing and specification, as directed by the Engineer : Extra for every increase of 50 T in pile capacity or part thereof over 250 T	EACH	5	12166.71	60833.55
20	061012	Random rubble masonry with hard stone in foundation and plinth including levelling up with concrete as per specifications, upto plinth level with : : Cement mortar 1:4 (1cement:4 fine sand)	CUM	300.00	1,961.12	588336
21	061020	Extra for random rubble masonry with hard stone in superstructure above plinth level up to floor two level, including levelling up with concrete as per specifications, at window sills, ceiling level and the like	CUM	150	502.71	75406.5
22	111011	12 mm cement plaster of mix - : 1:4 (1cement: 4 fine sand)	SQM	50	75.3	3765
23	114041	Pointing on stone work with cement mortar 1:3 (1cement: 3fine sand) : Flush/ Ruled pointing	SQM	200	84.82	16964
24	211141	Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or un reinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel / fabricated structural steel, metal and elastomer elements complete as per IS 2062, IS:1030, AISI:304, AISI:316, IS:6911, BS:3784, IS:3400, IS:226, BS-5400, Bridge code and as per drawing and approved Technical Specifications. The design of the bearings shall be submitted by the manufacturers/contractor and got approved from Railway before fixing. Test report of the bearings should be got approved before the materials are lifted from the manufacturer premises. Payment is based on 250 MT capacity of Bearing : POT-PTFE Bearing	1 MT BEARING C	1400	437.58	612612

SL. NO	USSOR CODE	Description of Item	Unit	Qty	Rate	Amount
25	211142	Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or un reinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel / fabricated structural steel, metal and elastomer elements complete as per IS 2062, IS:1030, AISI:304, AISI:316, IS:6911, BS:3784, IS:3400, IS:226, BS-5400, Bridge code and as per drawing and approved Technical Specifications. The design of the bearings shall be submitted by the manufacturers/contractor and got approved from Railway before fixing. Test report of the bearings should be got approved before the materials are lifted from the manufacturer premises. Payment is based on 250 MT capacity of Bearing : POT Bearing	1 MT BEARING C	1400	408.53	571942
26	222040	Supply and laying of coarse sand including consolidation, supply of all materials, labour, lead, lift, tools, plants, crossing of tracks as per drawing and technical specification as directed by the Engineer incharge in case loose slush is encountered at site of foundation before casting the foundation or before laying the filtering media	CUM	200	1369.48	273896
27	221050	Providing and laying Pitching with stone boulders weighing not less than 35 kg each with the voids filled with spalls on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications (Filter media to be paid separately under the relevant item)	CUM	300	950.84	285252
28	221060	Providing and laying Pitching with stone boulders weighing not less than 35 kg each with the voids filled with cement sand mortar 1:4 on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications (Filter media to be paid separately under the relevant item)	CUM	300	1667.43	500229
29	221070	Providing and laying Filter material As Per RDSO Specifications underneath pitching in slopes complete as per drawing and Technical specification	CUM	300	1648.61	494583
30	222180	Providing and laying of filter media consisting of granular materials of GW, GP, SW groups as per IS 1498-1970 in required profile behind boulder filling of abutments, wing walls / return walls etc above bed level with all labour and material complete job as per drawing and technical specification of RDSO Guidelines	CUM	500	1110.87	555435
31	252390	Stone Boulder Weighing minimum 35 Kg Each	CUM	800	455.4	364320
32	222290	Providing Boulder backing behind wing wall, return wall, retaining wall with hand packed boulders & cobbles with smaller size boulders toward the back including all lead, lift, labour & other incidental charges as complete work in all respect. Payment for boulder / cobbles will be done extra	CUM	400	178.76	71504

SL. NO	USSOR CODE	Description of Item	Unit	Qty	Rate	Amount
33	222250	Providing cast in situ plaques for bridge foundations details of size 45x45x5 cm in cement concrete 1:2:4 mix using 20mm hard stone aggregate embedded in 30mm deep notch over abutment & piers, engraving the letters & figures with CM 1:3 and finished smooth including painting letters and figures with 2 coats of black enamel and plaque with white enamel with all labour, tools, cement, paint, curing, etc. as a complete job	EACH	2	656.53	1313.06
34	222240	Providing cast in situ bridge number plaques as per Railway drawing in cement concrete 1:2:4 mix using 20mm hard stone aggregate embedded in 30mm notch in Bridge parapet coping duly engraving the letter and figures and an arrow indicating the direction of flow and finishing the top exposed surface with cement mortar 1:3, painting letters and figures with two coats of black enamel paint on two coats of white background with all labour, tools, cement, paint etc. with all lead and lifts	EACH	3	536.26	1608.78
35	191011	Exploratory drilling of Boreholes down to required depth, drilling of 150mm diameter boreholes in all type of soils except hard rock and large boulders (boulder core more than 30 cm), including refilling and reinstating surface, and disposing off surplus material including use of mechanical rigs with power operated winches as well as percussion / chiselling tool for advancing through occasional seams of hard strata to be employed, where necessary in Dry area 0m to 10m	Metre	30.00	1007.02	30210.6
36	191012	Extra for above item no. 191011 : 10m to 20m	Metre	60.00	1037.22	62233.2
37	191030	Extra for 150mm dia bore in hard Rock/ large Boulder at all levels	Metre	20.00	4878.30	97566
38	191041	Drilling of NX size borehole (75 mm dia) in all types of hard rock (fresh rock) and collection of rock core samples from boreholes and preserving in boxes 0m to 10m	Metre	15.00	3167.41	47511.15
39	191100	Taking out 100mm dia & 450mm long undisturbed samples of soil from bore holes, including provision of air tight containers for packing and, labelling incl. transporting the samples to laboratory. Piston sampler shall be used for extracting undisturbed samples where necessary. Samples shall be collected as per IS 2720	Each	5.00	348.45	1742.25
40	191110	Taking out 100mm dia & 450mm long disturbed samples of soil from bore holes, including provision of air tight containers for packing, labelling and transporting the samples to laboratory. Samples shall be collected as per IS 2720	Each	5.00	348.45	1742.25
41	191120	Conducting standard penetration test as per IS 2131 at approximate 1.5 m intervals in bore holes, as directed by the Engineer in charge	Each	5.00	209.07	1045.35

SL. NO	USSOR CODE	Description of Item	Unit	Qty	Rate	Amount
42	191130	Collection of water samples at required intervals	Each	3.00	139.38	418.14
43	191141	Conducting laboratory Tests on collected soil samples as per relevant IS code Moisture contents/ Dry density	Each	5.00	290.38	1451.9
44	191142	Atterberg Limit	Each	5.00	290.38	1451.9
45	191143	Specific Gravity	Each	5.00	232.30	1161.5
46	191144	Grain size analysis including Hydrometer analysis	Each	5.00	232.30	1161.5
47	191145	Direct Shear Test	Each	5.00	1742.25	8711.25
48	191146	Natural density	Each	5.00	290.38	1451.9
49	191147	Consolidation test	Each	5.00	290.38	1451.9
50	191148	Unconfined compression test	Each	5.00	290.38	1451.9
51	191149	Tri-axial test	Each	5.00	1742.25	8711.25
52	191151	Density test	Each	5.00	290.38	1451.9
53	191152	Water absorption & Porosity	Each	5.00	232.30	1161.5
54	191153	Hardness	Each	5.00	290.38	1451.9
55	191154	Unconfined compression test	Each	5.00	232.30	1161.5
56	191155	Point load test	Each	5.00	406.53	2032.65
57	191156	Modulus of elasticity	Each	5.00	406.53	2032.65
58	191160	Conducting chemical analysis of ground water samples to determine suitability for concreting and aggressiveness in relation to attack on concrete/ reinforcement including determination of pH value	Each	3.00	871.13	2613.39
59	191170	Conducting chemical analysis of soil samples to determine aggressiveness in relation to attack on concrete / reinforcement including determination of pH value	Each	3.00	871.13	2613.39
60	191180	Preparation and submission of Final report giving complete and comprehensive record of investigations, laboratory test reports and calculations in approved format	Each	3.00	2323.00	6969
61	192030	Providing and laying Plain Cement Concrete 1:3:6 with graded stone aggregate of 40 mm nominal size, in foundation and floors, retaining walls of bridges including mechanical mixing, vibrating, pumping and bailing out water where ever required with all materials and labour complete but excluding the cost of cement and shuttering as per drawings and technical specifications as directed by Engineer	cum	350.00	1538.08	538328
62		Any other USSOR other than above items	LumpSum	1.00	1000000.00	1000000
No. of Items SixtyTwo only			Schedule A: Departmental Value			18535044
			Tenderer's / Contractor's percentage			
			Total			

Seal & Signature of the Bidder

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule B - Items of works pertains to Earthwork.

SL. NO	Description of Item	Unit	Qty	Rate	Amount
1	<p>Earthwork in cutting in all soils: Earthwork for excavation in cuttings for all kinds of soils in connection with making formation/side drains/catch water drains/bridges/trolley refuges etc., as per required cross section, L- section & profile including removing all trees, bushes, debris, constructions, etc., from the site with contractor's equipment, machinery, labour, consumables etc., as per technical specifications & special conditions, including removing cut spoils and taking to embankment/outside railway land so as to clear the site with all leads & lifts, as directed by Engineer-in-charge.</p> <p>Note:</p> <p>i) Payment shall be based on cross section measurement only.</p> <p>ii) The term 'all soils' mentioned above include loose soil, ordinary soil (workable with spade), hard soil including stiff clay, moorum, shingle, soft laterite etc., requiring close application of picks to loosen and small boulders measuring not more than 300 mm in any direction.</p> <p>(iii) No extra payment for lead etc., is admissible.</p> <p>(iv) Only 75 percent payment for the quantity executed is payable in a particular bill initially. 15 percent of the balance amount shall be released after the L section and profile are perfectly reached and handed over to Railways. Remaining 10 percent shall be released only after the formation in the full block section or identified length is completed in all respects and handed over.</p>	cum	20000.00	61.20	1224000

SL. NO	Description of Item	Unit	Qty	Rate	Amount
2	<p>Earthwork in cutting in Soft Rock : Earthwork for excavation in cuttings in soft rock strata comprising disintegrated rocks of lime stone, sand stone, hard laterite etc., removable without blasting in connection with making formation/side drains/catch water drains/ bridges/trolley refuges etc., as per required cross section, L- section & profile including removing all trees, bushes, debris, constructions, etc., from the site with contractor's equipment, machinery, labour, consumables etc., as per technical specifications & special conditions, including removing cut spoils and taking to embankment/outside railway land so as to clear the site with all leads & lifts, as directed by Engineer-in-charge.</p> <p>Note:</p> <p>i) Payment shall be based on cross section measurement only.</p> <p>ii) Soft rock means rock which does not require blasting and which can be excavated by continuous operation of excavators/picks/bars etc.</p> <p>(iii) No extra payment for lead etc., is admissible.</p> <p>(iv) Only 75 percent payment for the quantity executed in a particular bill is payable initially. 15 percent of the balance amount shall be released after the L section and profile are perfectly reached and the formation is handed over to Railways. Remaining 10 percent shall be released only after the formation in the full block section or identified length is completed in all respects and handed over.</p>	cum	5000.00	78.00	390000

SL. NO	Description of Item	Unit	Qty	Rate	Amount
3	<p>Earthwork in cutting in Hard Rock requiring controlled blasting or other means Earthwork for excavation in cuttings in hard rock strata using explosives or chemicals, jack hammers or any other advance methods from authorised manufacturers/ license holders, in controlled manner, in connection with making formation/ side drains/catch water drains/bridges/trolley refuges etc., as per required cross section, L- section & profile including removing all trees, bushes, debris, constructions, etc., from the site with contractors equipment, machinery, labour, consumables etc., as per technical specifications & special conditions, including removing cut spoils and taking to embankment</p> <p>/ outside railway land so as to clear the the site with all leads & lifts, as directed by Engineer-in- charge. Note: i) Payment shall be based on cross section measurement only. ii) Hard rock requiring controlled blasting means rock which cannot be excavated by excavators/ picks/ bars etc. and which require controlled blasting duly providing protection measures for properties around or which require use of chemicals or other means to loosen the rock. (iii) No extra payment for lead etc., is admisible. (iv) Only 75% payment for the quantity executed in a particular bill is payable initially. 15% of the balance amount shall be released after the L section and profile are perfectly reached and the formation is handed over to Railways. Remaining 10% shall be released only after the formation in the full block section or identified length is completed in all respects and handed over . (v)This item shall be operated with specific prior approval of GM (Civil) for works requiring blasting near inhabited area/ residential houses within town/ village limits where open blasting is not permitted by the revenue / local authorities.</p>	cum	200.00	478.00	95600

SL. NO	Description of Item	Unit	Qty	Rate	Amount
4	Earth work in filling with cut spoils: Earthwork in embankments for making formation with Railways usable cut spoils excavated from cuttings in specified layers not exceeding 300 mm in thickness with lead and lifts including rehandling, transportation, unloading & spreading in layers, benching of slopes, sectioning to profile including removing all trees, bushes, debris, constructions, etc., from the site with contractor's vehicles, machinery, labour, consumables etc., complete as per technical specifications & special conditions and as directed by Engineer-in-charge. Note: i) Payment shall be based on cross section measurement only (ii) The rate includes testing of cut spoil for parameters to assess the suitability for use in embankments which shall be done for every 10000 cum and/or for every change of layer characteristics. (iii) No extra payment for lead etc., is admissible. (iv) Only 75 percent payment for the quantity executed in a particular bill is payable initially. 15 percent of the balance amount shall be released after the L section and profile are perfectly reached and the formation is handed over to Railways. Remaining 10 percent shall be released only after the formation in the full block section or identified length is completed in all respects and handed over. (v) Formation width at top shall be made with 500mm extra on either side initially and after compaction be cut to standard profile. No extra payment shall be made for this purpose. If the extra width as above is not made at any single location of less than 100 m length, payments due shall be reduced by 5 percent for that entire 100 m stretch. (vi) For leads upto 500m from the spot of release, accepted rates shall apply. For leads beyond 500 m and upto 1 km, 5 percent extra over the accepted rates shall be paid. For all leads beyond 1 km and irrespective of any extent further, another 5 percent over the accepted rates shall be paid and no their compensation will be eligible.	cum	25000.00	52.50	1312500
5	Mechanical compaction of earth work: Mechanical compaction of embankment, approaches to bridges etc., in specified layers using specified capacity vibratory power rollers as per type of soil, to achieve specified dry density of earth/other material using contractor's power rollers, tools and plants, consumables, labour, watering etc., all complete as per specification & special conditions and as directed by Engineer-in-charge. Note: If any other roller or other equipment is used for compaction, payment for the complete layer shall be reduced by 20 percent of the accepted rate for mechanical compaction.	cum	65000.00	10.50	682500

SL. NO	Description of Item	Unit	Qty	Rate	Amount
6	Turfing: Turfing the slopes of the bank/cutting with contractors sods of approved quality about 20x20x7.5cm size collected/ brought from outside railway limits, fixing the same over the slopes/ cess duly dressing the profile, loosening to required depth, gently ramming after laying, watering as required, making saucer drains 60cm wide from top to toe with necessary curvature for the free flow of water collected at the top at 25m intervals using contractors boulders with contractors vehicle, labour, consumables, all lead and lift etc., all complete and as per directions of Engineer-in-charge. Note : (i) 75 percent payment shall be made initially and balance 25 percent shall be released after 6 months or maintenance period whichever is more after satisfactory growth of turfing is certified by the Engineer-in-charge.	Sqm	3000.00	11.30	33900
7	Plotting initial levels: Computer Plotting of the theoretical cross section profile based on the initial levels of ground, recorded in the level books for cuttings/embankments at intervals of 25m or less including computation of theoretical profile/quantities duly deducting quantities for bridges and any other structure not requiring execution of earthwork in A4 size sheet with contractor's material, man power, consumables, tools and plants etc., and as directed by Engineer-in-charge. Note: i) Plottings and calculations are to be submitted to KRIDE in 3 sets. (ii) One cross section in one A4 size sheet is required.	Kilometre	0.50	4700.00	2350
8	Plotting final levels: Computer plotting of the theoretical & actual final finished cross section profile, duly indicating different type of strata available/ excavated in the x-section, based on the final levels recorded in the level books for banks/ cuttings at intervals of 25m or less, including computation of theoretical/actual quantities done as per classification of different types of soil/blanketing material as certified by Engineer-in-charge duly deducting quantities for bridges and any other structure not requiring execution of earthwork in A4 size sheet with contractor's material, man power, consumables, tools and plants etc., and as directed by Engineer-in-charge. Note: i) Plottings and calculations are to be submitted to KRIDE in 3 sets ii) One cross section in one A4 sheet is required. iii) For embankments, computation of different soils viz., cut spoils, contractor's own earth, blanketing material are to be shown separately as per measurement recorded.	Kilometre	0.50	4700.00	2350

SL. NO	Description of Item	Unit	Qty	Rate	Amount
9	Fixing reference pegs: Striking out of centre line of railway alignment using total station or any other latest survey equipment and fixing centre line pegs of adequate size with Railway's tie bars/cut rails at every 100m on straight and 25m in curves, at bridges etc., with contractors surveyor, equipment, all consumables, labour etc. Note : (i) The reference pegs shall be fixed along the alignment at appropriate locations to provide information for execution of formation, bridges, ballasting and linking of track throughout the period of construction. (ii) Contractor is responsible for maintaining the reference pegs including shifting in case of shifting of alignment or to facilitate construction. (iii) The reference pegs shall be usable as temporary bench marks wherever required.	Each	110.00	154.30	16973
No. of Items Nine only		Schedule B: Departmental Value			3760173
		Tenderer's / Contractor's percentage			
		Total			

Seal & Signature of the Bidder

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule C - Items of works pertains to Supply of Cement.

SL. NO	Description of Item	Unit	Qty	Rate	Amount
1	Supply of Ordinary Portland cement of 43 / 53 grade conforming to IS 8112 / IS 12269 (upto date)and/or Portland Pozzolana Cement conforming to IS/1489 (upto date), at site of work to the extent of the quantities required for various items of works in schedule items including all cost of loading, unloading,leading, transporting, stacking, storing including making proper storage arrangements and all consumables, machinery, vehicles, labour etc., complete and as directed by the Engineer-in-charge. (a) Ordinary Portland Cement (43/53 Grade) NOTE :1) Use of Portland Pozzolana cement shall be restricted strictly to the permitted construction items only. Pozzolana cement shall not be used in PSC construction.2) Admixtures such as super plasticizers will be permitted based on specific designs for permitted construction items with the approval of the AGM-in-charge. However, admixtures proposed shall be supplied free of cost by the Contractor and no compensation will be payable. 3. 33 Grade cement shall not be used in Railways/KRIDE construction works.	Tonne	3500.00	6342.00	22197000
No. of Item one only		Schedule C: Departmental Value			22197000
		Tenderer's / Contractor's percentage			
		Total			

Seal & Signature of the Bidder

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule D - Items of works pertains to Concrete works.

SI No.	Description of Item	Unit	Qty	Rate	Amount
1	Plain Cement Concrete (M15 to M30 design mix) Cast-in-situ work (cement will be paid separately) with Contractors all materials including 40mm or below graded hard crushed stone aggregate, sand, admixture, water, etc., of approved quality in foundations, abutments, piers, wing walls, return walls etc., of bridges and other structures as required, including fixing and removal of contractors shutter/ form work/ supports, vibrating/compacting, providing weep holes with contractors AC pipes 75 to 100mm dia wherever necessary, providing normal/approved expansion joints with necessary materials as per design/drawings, curing of concrete, pumping/bailing out of water wherever necessary with Contractors own pump, power, fuel etc., finishing the surfaces wherever required, etc., complete, with all lead, lift, transport, consumables, labour, tools and plant, materials, etc., as per approved drawings/specification /conditions and as directed by the Engineer-in-charge. NOTES: (1) Single rate will apply for all mixes (M15,M20,M25 and M30) irrespective of proportion of materials used (per cubic metre (cum) of concrete). (2) All concrete shall be weigh batched, machine mixed, compacted with mechanical vibrators and should conform to IRS Concrete Bridge Code and relevant IS Codes/Specifications and other relevant specifications as prescribed. Weigh batching is mandatory for all PCC, RCC and PSC works. (3) Rates shall include all materials, operations, etc., complete except for Cement, which will be paid for separately. Steels including fabrication, if used, and excavations for foundations will be paid under relevant SSR or other schedules separately. (4) Shuttering and supporting form work shall be of good quality materials only. For PSC/RCC girders/slabs/beams/columns, only rigid plate steel shutters shall be used. (5) Mix design with requirement of all tests shall be arranged by the Contractor at his cost. (6) Admixtures as required/ as per designs shall be arranged by the Contractor at his cost. (7) All material and concrete tests as required shall be arranged by the contractor at his cost. (8) Rate includes placing of concrete in position for all heights by manual/concrete pump/crane etc.,	cum	2000.00	2500.00	5000000

SI No.	Description of Item	Unit	Qty	Rate	Amount
2	<p>Plain Cement Concrete (M15 to M30 design mix) Cast-in-situ work (cement will be paid separately) with Contractors all materials including 20mm/12.5mm graded hard crushed stone aggregate, sand, admixture, water, etc., of approved quality in bed blocks, wearing coat, coping, ballast walls etc. of bridges and other structures as required, including fixing and removal of contractors shutter/form work/ supports, vibrating/compacting, providing weep holes with contractors AC pipes 75 to 100mm dia wherever necessary, providing normal/approved expansion joints with necessary materials as per design/drawings, curing of concrete, pumping/ bailing out of water wherever necessary with Contractors own pump, power, fuel etc., finishing the surfaces wherever required, etc., complete, with all lead, lift, transport, consumables, labour, tools and plant, materials, etc., as per approved drawings/specification / conditions and as directed by the Engineer-in-charge. NOTES: (1) Single rate will apply for all mixes (M15,M20,M25 and M30) irrespective of proportion of materials used (per cubic metre (cum) of concrete) (2) All concrete shall be weigh batched, machine mixed, compacted with mechanical vibrators and should conform to IRS Concrete Bridge Code and relevant IS Codes/Specifications and other relevant specifications as prescribed. Weigh batching is mandatory for all PCC, RCC and PSC works. (3) Rates shall include all materials, operations, etc., complete except for Cement, which will be paid for separately. Steels including fabrication, if used, and excavations for foundations will be paid under relevant SSR or other schedules separately. (4) Shuttering and supporting form work shall be of good quality materials only. For PSC/RCC irders/ slabs/ beams /columns, only rigid plate steel shutters shall be used. (5) Mix design with requirement of all tests shall be arranged by the Contractor at his cost. (6) Admixtures as required/ as per designs shall be arranged by the Contractor at his cost. (7) All material and concrete tests as required shall be arranged by the contractor at his cost. (8) Rate includes placing of concrete in position for all heights by manual/concrete pump/crane etc.,</p>	cum	100.00	2600.00	260000

SI No.	Description of Item	Unit	Qty	Rate	Amount
3	Reinforced Cement Concrete (M20 to M40 design mix) work (Cement & Steel will be paid separately),with Contractors all materials including 20mm graded hard crushed stone aggregate, sand, admixture, water etc., of approved quality in foundations including below ground level, abutments, piers, pile caps, bed blocks, trestle beams, girders, pedestals, retaining walls, boxes/slabs for flat top bridges, deck slabs, girders, kerb walls, diaphragms, cross frames etc., on girder bridges and other structures of any design/shape as required, above or below ground level of any size and shape, including fixing and removal of contractors shutters/form work/ supports, vibrating/compacting, and providing weep holes with AC pipes 75mm to 100mm dia and normal/approved expansion joints with necessary materials as per designs/drawings wherever necessary, curing of concrete, pumping/bailing out of water wherever necessary with Contractors own pump, power, fuel etc., finishing the surfaces wherever required etc., complete and including handling, uncoiling, cutting, bending, cranking, tying M.S./T or Rods/ wires /other steel to form reinforcement with Contractors galvanised binding wire of size 18/20 SWG(0.90mm) to IS280, etc., fixing in position reinforcement gauge complete as required with all lead, lift, transport, materials, consumables, labour, tools and plant, etc., and including 2 coats of cement painting as per approved drawings/specifications/ conditions and as directed by the Engineer-in-charge. Plant produced Ready-mix concrete shall be used only with the specific approval of the AGM/Civil.	cum	3622.00	3600.00	13039200

SI No.	Description of Item	Unit	Qty	Rate	Amount
	<p>NOTES:1. Single rate will apply for all mixes (M20,M25, M30, M35 and M40) irrespective of proportion of materials used (per cubic metre (cum) of concrete). Rate is for site mixed concrete. For plant produced Ready-mix concrete, an extra payment of Rs.500/- per cum will be applicable.</p> <p>2. All concrete shall be weigh batched, machine mixed, compacted with mechanical vibrators and should conform to IRS Concrete Bridge Code and relevant IS Codes/Specifications and other relevant specifications as prescribed. Weigh batching is mandatory for all PCC, RCC and PSC works.</p> <p>3. Rates shall include all materials, operations, etc., complete except for Cement and Steel and excavation for foundations and substructure, if required, which will be paid for separately under relevant SSR/other schedules. Similarly, neoprene bearing pads, expansion joints and steel ladders attached to the PSC girder/slab will also be paid for separately.</p> <p>4. Shuttering and supporting form work shall be of good quality materials only. For PSC/RCC girders/slabs/beams/columns, only rigid plate steel shutters shall be used.</p> <p>5. Mix design with requirement of all tests shall be arranged by the Contractor at his cost.</p> <p>6. Admixtures, binding wires, clamps/anchors etc., as required/ as per designs shall be arranged by the Contractor at his cost.</p> <p>7. 75% of the value of the work completed will be paid initially and remaining 25% will be paid after all tests connected with concrete including materials and 7 days cube tests are completed and results are accepted. Any concrete which is not passing the design/codal requirements shall be summarily rejected.</p> <p>8. Rates include cost of launching, lifting and placing of slabs/ girders on bearings if required.</p> <p>9. This item will apply for all standard/special designs required in the work where such design is not specially provided for in any other schedule/item.</p> <p>10. Rate includes placing of concrete in position for all heights by manual/concrete pump/crane etc.,</p>				

SI No.	Description of Item	Unit	Qty	Rate	Amount
4	Pre-stressed Cement Concrete (M35 to M50 design mix) post-tensioned work (cement, steel, HTS wire/strands will be paid separately) in girders/slab of any design/shape, with Contractor's all materials including 20mm graded hard crushed stone aggregate, sand, admixture, water, etc., of approved quality and all special materials for prestressed concrete including Flexible GI/Other sheathing, coupler, bearing plates, anchorages, wedges, grout, anticorrosive treatment etc., of special/approved quantity and quality as per designs/drawings, including post-tensioning with contractor's own jack, power and other equipment complete, fixing and removal of contractors shutter/form work/ supports vibrating/compacting, providing weep holes with contractor's AC pipes 75 to 100mm dia wherever necessary, providing normal expansion joints with necessary materials as per design/drawings, curing of concrete, pumping/bailing out of water wherever necessary with Contractors own pump, power, fuel etc., finishing the surfaces wherever required, etc., and including handling, uncoiling, cutting, bending, cranking, tying HTS/MS/TOR rods/other steel to form tendons and reinforcement gage with contractor's galvanised binding wire of 18/20 SWG(0.90mm) to IS 280, etc., fixing the tendons and reinforcement in position as required, complete, with all lead, lift, transport, consumables, labour, tools and plant, materials, etc., and including 2 coats of cement painting, as per approved drawings/ specification/ conditions and as directed by the Engineer-in-charge. Plant produced Ready-mix concrete shall be used only with the specific approval of the AGM/Civil. (a) For PSC slabs	cum	500.00	11000.00	5500000

SI No.	Description of Item	Unit	Qty	Rate	Amount
	<p>NOTES:</p> <p>1. Single rate will apply for all mixes (M35, M40, M45 and M50) irrespective of proportion of materials used (per cubic metre-cum-of concrete). Rate is for site mixed concrete. For plant produced Ready-mix concrete, an extra payment of Rs.500/- per cum will be applicable.</p> <p>2. All concrete shall be weigh batched, machine mixed, compacted with mechanical vibrators and should conform to IRS Concrete Bridge Code and relevant IS Codes/Specifications and other relevant specifications as prescribed. Weigh batching is mandatory for all PCC, RCC and PSC works.</p> <p>3. Rates shall include all materials, operations, etc., complete except for Cement, Reinforcement steel, and HTS pre-stressing wire/strands, which will be paid for separately under relevant items of other schedules. Similarly, neoprene bearing pads, expansion joints and steel ladders attached to the PSC girder/slab will also be paid for separately.</p> <p>4. Shuttering and supporting form work shall be of good quality materials only. For PSC/RCC girders/slabs/beams/columns, only rigid plate steel shutters shall be used.</p> <p>5. Mix design with requirement of all tests shall be arranged by the Contractor at his cost.</p> <p>6. Admixtures, binding wires, clamps/anchors, sheathing, bearing plates, anchorages, wedges, couplers, grout, anticorrosive treatment and all other materials required for pre-stressed concrete construction, as required/ as per designs shall be arranged by the Contractor at his cost.</p> <p>7. 75% of the value of the work completed will be paid after casting/initial stressing and remaining 25% will be paid after all tests connected with concrete including materials and necessary cube tests and load tests specified, if any, are completed and results are accepted. Any concrete which is not passing the design / codal requirements shall be summarily rejected.</p> <p>8. Rates include cost of launching, lifting and placing of slabs/girders on bearings as required.</p> <p>9. This item will apply for all standard/special designs required in the work where such design is not specially provided for in any other schedule/item.</p> <p>10. Rate includes placing of concrete in position for all heights by manual/concrete pump/crane etc.,</p>				
5	<p>Supply and laying of RCC Hume pipes of dia 900mm/1200mm of NP4/RDSO designs suitable for all types of Railway loading standards including providing levelling course, jointing, compaction as per approved drawings with contractor's fixing materials, collars, aggregates and all other materials as required with all lead, lift, transport, consumables, labour, tools and plant, etc., complete as directed by the Engineer-in-charge. (per running metre length of pipe to be quoted). (a) Laying with 900mm pipe NOTES: (1) Rates include all materials, operations etc., complete except cement used which will be paid for separately. (2) Contractor shall produce design/ test reports to prove the suitability of the Hume Pipe. Decision regarding standard of pipe to be used by the Engineer-in-charge is final and binding on the contractor. (3) Rates include local transport within the section only. Transport from factory upto the section/office of the Engineer-in-charge will be paid under relevant SSR items.</p>	RM	60.00	5000.00	300000

SI No.	Description of Item	Unit	Qty	Rate	Amount
6	Supply and laying of RCC Hume pipes of dia 900mm/1200mm of NP4/RDSO designs suitable for all types of Railway loading standards including providing levelling course, jointing, compaction as per approved drawings with contractor's fixing materials, collars, aggregates and all other materials as required with all lead, lift, transport, consumables, labour, tools and plant, etc., complete as directed by the Engineer-in-charge. (per running metre length of pipe to be quoted). (b) Laying with 1200mm pipe NOTES: (1) Rates include all materials, operations etc., complete except cement used which will be paid for separately. (2) Contractor shall produce design/ test reports to prove the suitability of the Hume Pipe. Decision regarding standard of pipe to be used by the Engineer-in-charge is final and binding on the contractor.(3) Rates include local transport within the section only. Transport from factory upto the section/office of the Engineer-in-charge will be paid under relevant SSR items.	RM	50.00	5800.00	290000
7	Drilling of 25mm/40mm dia holes in concrete/stone masonry/hard rock underground/over ground, to a depth of 400mm for dowelling/ anchoring including fixing of steel dowels/angles/flats and grouting with cement mortar (1:3) with Contractors all materials, drilling equipment, lead, lift, labour, transport, tools & plant, consumables, etc., complete (excluding cement & steel) as per specifications and as directed by the Engineer-in-charge. NOTES:- (1) Rate includes all materials, operations etc., excluding cement and steel, which will be paid under other relevant schedules.	Numbers	300.00	150.00	45000
8	Supplying, providing and removing heavy duty shoring for excavation in foundation trenches for bridges and buildings only near existing bridge/track/building to a depth not less than 3.0m as per specific shoring plans issued by the AGM/Civil-in-charge based on Railways Sketch No:ST/CN/BNC/06-2009, with Contractor's all materials (excluding rails to be supplied by the Railways free of cost but to be returned by the Contractor), with all lead, lift, labour, transport, tools & plant, consumables, etc., complete and as directed by the Engineer-in-charge. NOTES:- (1) Rate is per square metre (sqm) of elevational area of the shoring. (2) The item shall be operated with the specific approval and drawing issued by the AGM/Civil and shall be used only in unsafe/instability conditions involving depth of excavations to more than 3.0m below the ground level/existing foundations/to slope of existing formation sleeper than 1:1. (3) Total payment under this item shall be restricted to a maximum of 10% of the payment for earthwork and/or concreting done upto 3.0m below ground level/existing foundation level only.as specified	SQM	1000.00	1000.00	1000000
No. of Items Eight only		Schedule D: Departmental Value			25434200
		Tenderer's / Contractor's percentage			
		Total			

Seal & Signature of the Bidder

MAJOR BRIDGE

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule E - Items of works pertains to Supply of Steel

SL No.	Description of Item	Unit	Qty	Rate	Amount
1	Supply of High Yield Strength Deformed reinforcement steel bars / Fe 415 / Fe 415D / Fe 415S / Fe 500D / Fe 500S / Fe 550 / Fe 550D / Fe 600 conforming to IS 1786:2008 (with latest amendment) at site of work to the extent actually required for the work including all cost of loading, unloading, leading, transporting, stacking, storing, labour, consumables, machinery, vehicles etc., complete and as directed by the Engineer-in-charge. NOTE: (1) The rate quoted for this item is applicable for Fe500, Fe550 and Fe 600 and their variants viz. Fe 500D, Fe 500S and Fe 550D. If Fe 415 grade or its variants Fe 415D or Fe 415S are used, they will be paid at a reduction of Rs.2000/- per MT from agreed rates. (2) Stage payment for supply of steel shall be limited to 75% of the agreed rates subject to production of Bank Guarantee/ Indemnity Bond as specified, Test certificates, Insurance, limitation in quantity supplied at a time, conditions for stacking/ storing/ preserving at site. However, this payment will be restricted to a maximum of 30% of the Schedule quantity at any point of time. (3) Payment for reinforcement rods will be made as per actual used including over laps, cranks, bends, etc., if any, as per approved drawing and as per Special Conditions for use of steel. However, no payment will be made for any wastage. Quantity will be calculated for nominal diameter of the bars using standard weights per running metre or as per actual weights whichever is less. (4) Binding wire, clamping materials etc., used in construction shall not be treated as supply items under this schedule and shall be governed by the Schedule and Special Conditions under the relevant items of concreting etc., and no extra payment shall be made. (5) Reinforcement steel shall be supplied and used as per approved drawings and as per instructions of the Engineer-in-charge.	Tonne	510.00	51790.00	26412900
No. of Item one only		Schedule E: Departmental Value			26412900
		Tenderer's / Contractor's percentage			
		Total			

Seal & Signature of the Bidder

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule F- Items of Blanketting of formation, Contractors own earth & Bridge approaches

S No.	Description of Item	Unit	Qty	Rate	Amount
1	Earth work in filling with COE: Earthwork in embankment in making formation with contractors own earth of approved quality in specified layers not exceeding 300mm thickness from approved earth quarries outside railway limits in all soils with loading, unloading, all lead and lifts, rehandling, transportation, spreading in layers, benching of slopes, sectioning to profile, clearing of debris/garbage/vegetation/shrubs etc., in the railway alignment using contractor's vehicles, machinery, labour, consumables etc., as per technical specification & special conditions and as directed by Engineer-in-charge. Note: (i) Payment shall be made based on cross section measurement only. (ii) The rate includes all charges, taxes, royalty, seignorage etc., and for pretesting of soil quality at quarry for every 20000 cum or change of layer and testing at site for every 5000 cum or change of layer for assessing the suitability of the soil for use in embankments and all other tests as specified in the specifications. (iii) No extra payment for lead etc., is admissible. (iv) Only 75 percent payment for the quantity executed in a particular bill is payable initially. 15 percent of the balance amount shall be released after the L section and profile are perfectly reached and the formation is handed over to Railways/KRIDE. Remaining 10 percent shall be released only after the formation in the full block section or identified length is completed in all respects and handed over. (v) Only soils of category I or II or III or IV as per clause 15 of Technical Specifications is permitted. Payment for category III will be reduced by 5 percent and for category IV will be reduced by 10 percent of the accepted rates. Accepted rates apply to soil with PI upto 7. For PI beyond 7 and upto 20, a further reduction of 10 percent in accepted rates shall apply. Use of category V soil as per clause 15 of Technical Specifications is banned. (vi) Formation width at top shall be made with 500mm extra on either side initially and after compaction be cut to standard profile. No extra payment shall be made for this purpose. If the extra width is not made at any single location of less than 100 m length, payments due shall be reduced by 5% for that entire 100 m stretch.	cum	40000.00	126.60	5064000.00

S No.	Description of Item	Unit	Qty	Rate	Amount
2	Earth work at bridge approaches: Earthwork in embankment in filling up approaches of major bridge for 50m either side with soil of GW clasification only including mechanical or special type of compaction such as water compaction in specified layers from approved earth quarries outside railway limits with loading, unloading, all lead and lifts, rehandling, transportation, spreading in layers, benching of slopes, sectioning to profile, clearing of debris/garbage/ vegetation/shrubs etc., using contractors vehicles, machinery, labour, consumables etc., as per technical specification & special conditions and as directed by Engineer-in-charge. Note: (i) Payment shall be made based on cross section measurement only. (ii) The rate includes all charges, taxes, royalty, seignorage etc., and for pretesting of soil quality at quarry for every 20000 cum or change of layer and testing at site for every 1000 cum or change of layer for assessing the suitability of the soil for use in embankments and all other tests as specified in the specifications. (iii) No extra payment for lead etc., is admisible. (iv) Only 75% payment for the quantity executed in a particular bill is payable initially. 15% of the balance amount shall be released after the L section and profile are perfectly reached and the formation is handed over to Railways. Remaining 10% shall be released only after the formation in the full block section or identified length is completed in all respects and handed over. (v) No payment will be made for the complete layer if soil other than GW classification is used and/or if mechanical compaction or special compaction is not used.	cum	1000.00	191.00	191000.00
3	Blanketing of formation: Manufacturing, supplying, transporting to site, spreading in layers, compacting the blanketing material and dressing/finishing the formation to profile as per RDSO specification No.GE:G-1 with upto date correction slips conforming to upper blanket layer guiding enveloping curves as per sketch B RDSO's Drawing No.GT/SD/0011/ Rev.2/2001 of the said specification including spreading and compacting with vibratory rollers of adequate capacity, duly sprinkling water/ allowing to dry to achieve optimum moisture content as specified, complete in all respects and as directed by Engineer-in-charge. Rate includes all materials, transporting/leading/unloading, spreading, labour, manufacturing, mixing & blending by any means, all tests on materials, to obtain the specified gradation, leads, lifts, assent, dissent, crossing of nalla /stream and all other obstructions, all machinery, tools and plants, handling and re-handling of the materials, fuel, royalty, octroi, licensing charges, incidentals, etc, complete.	cum	5000.00	360.00	1800000.00
No. of Items three only		Schedule F: Departmental Value			7055000.00
		Tenderer's / Contractor's percentage			
		Total			

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule - G- Item pertaining of supply of HTS WIRES

S No.	Description of Item	Unit	Qty	Rate	Amount
1	Supplying of High Tensile Steel wires/strands to IS 14268 (upto date) of suitable dia as approved in designs/ drawings/ conditions from approved manufacturer at the site of work to the extent of quantity required for various items of works in schedule of items including all cost of loading, leading, transporting, storing, unloading, handling, rehandling, stacking, protecting etc., in the contractor's store godowns as per IS specifications with all lead, lift, transport, consumables, labour, tools & plant and all other incidental charges etc., complete and as directed by the Engineer-in-charge. NOTE:- (1) Payment will be made only for HTS wire/strands used in the structure for lengths measured from bearing plate to bearing plate or face to face of the structure and no extra for wastage etc., will be allowed. (2) 50% of the agreement rate will be paid for the HTS wire/strand brought to the site on production of Indemnity Bond/Bank Guarantee as per Special Conditions and other necessary certificates and the balance will be paid only after completion of all works connected to prestressing and certification of the quality of the slab/girder/etc., where the HTS materials are used.	Tonne	5.00	63800.00	319000
No. of Item one only		Schedule "G": Departmental Value			319000
		Tenderer's / Contractor's percentage			
		Total			

Seal & Signature of the Bidder

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule J - Items of Supply & Fabrication of Structural Steel.

SI No.	Description of Item	Unit	Qty	Rate	Amount
1	<p>Supply & Fabrication of through type steel bridge girders for 45.72M as per RDSO Drg. Nos B-17181-17181/19 (with upto date alterations) for indian Railway 25-T axel loading standard as per drawing IRS/IS specification including fabrication of steel bridge girders as per IRS B-1/2001 & B-2/1979 (corrected up to date) and using contractors supply of steel IS 2062 quality & B0 Grade E250 from SAIL/TISCO/RINL/IISCO/JSW only complete but excluding the roller & Rocker bearings. The rate includes supply of steel, fillet or butt welding post weld treatment, steel drifts, shop welding, shop riveting, bolting with HSFG bolts, jigs fixtures, testing of weld by NDT/radiography or any specified method.</p> <p>NOTES 1. Members connected by rivet shall be made of mild steel confirming to IS 2062 quality & A grade semi skilled minimum material for web, flange plates and end plate should be as per IS2062 quality & B0 grade E250. 2. Payment under this item shall be made for the net quantity as measured under fabrication of steel girder excluding cutting/ wastages etc. no extra payment will be made for welding / cutting & wastages. 3. Rate includes, preparation, submission and getting approval of fabrication (shop) drawings/schemes from Railways/KRIDE by contractor cutting , shaping, drilling holes, welding consumables, all inspection and testing of raw materials, fabrication process and fabrication material, connections of all the types of ties , stiffeners , packing, diaphragm, HSFG bolts , steel drifts , shop welding shop rivets, templates , jigs, fixtures back up supports , accessories etc. and marking each member for site identification and transporting various component from contractors fabrication yard/work shop to bridge site in packages bundles and other means with due care and safeguards, as described in the contract conditions and specifications and as directed / approved by engineer-in-charge including loading, unloading , sorting , member-wise systematic matching etc. complete with contractors own labour , material, tools & plants including all lead , lift and taxes complete. 4. All works shall be carried out as per approved drawings , relevant code provisions , technical specifications and as directed by the engineer in charge. 5. The girder components transported to the site shall be stacked at site properly as directed by engineer in charge and no extra payment will be made for the same. 6. The rate shall also include trial assembling in the shop yard or at site as directed by the engineer in charge and contractor has to arrange for laboratory testing of steel and submission of the results to the KRIDE. no extra payment will be made for this. Mode of payment i) 40% of rate quoted will be paid on supply of girder components to the contractor's work shop against submission of BG with a validity upto the completion date of this agreement. The BG so submitted will be returned to the contractor on receipt of fabricated material at site. ii) 30% of quoted rate will be made on fabrication and transportation of girder components to the site on submission of indemnity bond. iii) 20% of quoted rate will be made on completion of assembling at site. iv) 10% of quoted rate on completion, launching and complete erection with including testing of rivets/HSFG bolts, placing the girders on bearings , grouting of anchor bolts, greasing of bearing, painting including ensuring proper camber etc. complete in all respects as directed by Engineer-in-charge.</p>	MT	450	85500	38475000

SI No.	Description of Item	Unit	Qty	Rate	Amount
2	Fabricating , supplying & erecting in position bearing as per railways approved drawing for 45.7m OWG span complete in all respect including transportation , loading unloading with own labours, material , fuels,equipments etc.testing of bearings for relevant tests to be arranged by the contractor and result to be submitted to railways. Note: a) One set means all 4 bearings of span i.e two roller and two rocker bearing.b) work is to be done strictly in the presence of railway authorized representative. c)50% payment will be released after supply of bearing s to site (this 50% payment will be made after submission of indemnity bond if required and acceptable from) and 50% will be released after fixing the bearings to engineer's satisfaction. d) the rate is inclusive of anchor bolts, pins,drilling and grouting complete in all respect to correct specifications. e)the rate is inclusive of lead from manufacture to the bridge site . f) the rate also includes greasing of knuckle and roller of free bearing and knuckle of fixed bearing with approved grease graphite as per IS :508-1987 and painting the bearings as per the schedule of painting girder	SET	4	350000	1400000
3	Fabrication, supply and erection of minor structural steel components for span of 45.7 steel through girder including trolley refuges, safety ladder,chequered plate and fixing the same through type steel girder with contractors materials to steel confirming IS 2062 grade-A with one coat of red-oxide zinc chromite primer, loading unloading leading etc., labour, tools plants materials including transportation of the fabricated steel sections to bridge site etc., as directed by the engineer-in-charge 1)57% of rate accepted will be considered towards supply of steel for PVC calculation purpose	MT	5	70000	350000
4	Supply and fabrication of PLATE GIRDER-WELDED TYPE as per RDSO drg. (with upto date alterations) as per Indian Railway 25-t 2008 axle loading standard, as per drawing, IRS/IS specification for fabrication of steel bridge girders.e., IRS B-1/2001, IRS Welded bridge code (as corrected upto date), using contractors supply of steel confirming to IS:2062 quality 'BO', grade E 250 from SAIL/TISCO/RINL/JSW complete. The work includes supply of steel, fillet or butt welding, post weld treatment, steel drifts, shop welding, shop riveting, HSFG Bolts, jigs, fixtures, testing of weld by NDT/radiography or any specified method. The work includes transpotation of fabricated girder components from contractor's workshop to bridge site including loading and unloading with contractor's own labour, materials, tools, plants, machinery, scaffolding etc., with all lead, lift, ascent, descent, crossing obstruction etc., including all taxes, royalties etc., complete in all respects and as directed by the Engineer. NOTE: 1. Rolled sections would be confirming to IS:2062 quality 'BO' E 250, Fully killed and normalized. 2. Payment under this item shall be made for the net quantity as measured under Fabrication of steel Girder excluding cutting/wastage's etc., No extra payment will be made for welding/cutting & wastage. 3. Rate includes, preparation, submission and getting approval of fabrication (shop) drawings/schemes from railways by contractor, cutting, shaping, drilling holes, welding of components, welding consumables, all inspection and testing of raw materials, fabrication process and fabrication material, connections of all the types o ties, stiffeners, packing, diaphragm, HSFG. bolts, steel drifts, welding shop, rivets, templates, gigs, fixtures back up supports, accessories etc., and marking each member for site identification and transporting various components from contractor's fabrications yard/workshop to bridge site in packages bundles and other means with due care and safeguards, as described in the contract conditions and specifications and as directed/approved by engineer-in-charge including loading, unloading, sorting, member-wise systematic matching etc., complete with contractor's own labour, material, tools & plants including all lead, lift and taxes complete. 4. All works shall be carried out as per approved drawings, relevant codal provisions, technical specifications (corrected up to date) and as directed by the engineer-in-charge. 5. The girder components transported to the site shall be stacked at site properly as directed by engineer-in-charge and no extra payment will be made for the same. 6. The rate shall also include trial assembling in the shop yard or at site as directed by the engineer-in-charge, contractor has to arrange for laboratory testing of steel and submission of the results to the Railways. no extra payment will be made for this. 7. The contractor has to engage 3rd party as a consultant/inspection (approved by BHEL/TPJ or BARC or any other approved agency) for testing of the weld of the fabricated welded type girders, as required. 8. The rate is inclusive of conducting of welding procedure specification sheet (WPSS) and procedure for qualification record (PQR) to qualify welder and welding procedures. 9. The rate is inclusive of conducting laboratory tests on samples of steel materials and welds like physical and chemical tests as per IS respectively, as and when required. 10. The rate is inclusive of conducting test on welds like Dye penetration test (DP), Magnetic particle test (MP) Ultrasonic test (UT) and Radiography test (RT) as required. 11. In case of Rolled steel section confirming to IS:2062 quality B or C are not available in market, KRIDE may permit use to steel confirming to IS-2062 quality 'BR' on case to case basis by satifiying about non availibility of quality B or C.	MT	30	82000.00	2460000

SI No.	Description of Item	Unit	Qty	Rate	Amount
	Mode of payment i)40% of rate quoted will be paid on supply of girder components to the contractor's work shop against submission of BG with a validity upto the completion date of this aggrement. The BG so submitted will be returned to the contractor on receipt of fabricated material at site. ii) 30% of quoted rate wii be made on fabrication and transportation of girder components to the site on submission of indemnity bond.iii)20% of quoted rate will be made on completion of assembling at site .iv) 10% of quoted rate on completion, launching and complete erection with including testing of rivets/HSFG bolts, placing the girders on bearings , grouting of anchor bolts,greasing of bearing, painting including ensuring proper camber etc. complete in all respects asdirected by Engineer-in-charge.				
5	Fabricating, supplying and erecting in position BEARING as per Railways approved drawing no.RDSO/B-17182/3 for 15.27m OWG span complete in all respect including transportation, loading, unloading with own labours, materials, fuels, equipment etc., testing of bearings for relevant tests to be arranged by the contractor and results to be submitted to KRIDE. Note - One set means all 4 bearings of one span i.e., two roller and two rockers bearing. work is to be done strictly in the presence of Railways authorized representative. 50% payment will be released after supply of bearings to site (this50% payment will be made after submission of indemnity bond if required in acceptable form) and balance 50% will be released after fixing the bearings to engineer's satisfaction. the rate is inclusive of anchor bolts, pins, drilling and grouting complete in all respects to correct specifications. the rate is inclusive of lead from manufacturer to the bridge site. the rate also includes greasing of knuckle and roller of free bearing and knuckle of fixed bearing by approved grease graphite as per IS:508-1987 and painting the bearings as per the schedule of painting girder	SET	1	650000.00	650000
6	Assembling and launching of steel open web girders & Plate girders bolting with contractors HSFG bolts , welding wherever required with contractors welding material (bolting, riveting & welding paid in item 1 above) this item includes preparation and the approval of erection / assembly / launching scheme (contractors has to submit the same to KRIDE for approval). it includes contractors own cranes of sufficient capacity and boom length , steel trestles as per site conditions or floating barge of safe and adequate capacity or other manual / mechanical methods of erection and launching of truss members / girders . it also includes the work of battens , lacings, ties, stiffeners,packing, diaphragms, T& F bolts , steel drift , field rivets/HSFG bolts, templates,jigs,textures ,back up support accessories , temporary staging of CC Cribs of sufficient quantity for flooring and camber jacks mechanical and hydraulic jacks steel wire ropes and which crabs , launching nose of steel for cantilever launching (if any), dead anchorages and any other suitable material such as small cranes for field assembly, shifting of leaves of steel girders from horizontal position to vertical position and vice versa , scaffolding and air compressors welding plants , pneumatic tools and mini workshop facilities etc. this also includes cost of material , fabrication , erection and dismantling of all temporary components like gap structure , tower , high tensile cables (including anchorages), truss stregthening member away restraining devices such as sway ropes , restraining cables , counter weights, dead anchorages and other preliminary arrangements used for launching of truss members etc. to suit requirement as required for the work for which no extra payment shall be made. the item also includes lowering and placing of girder on bearing and its centering / alignment. All additional steel (over and above approved payable weight as per approved structural drawings) required for permanent / temporary stregthening for proper launching /erection of the girders shall be arranged by contractor at his own cost. mode of payment :(a) 80% of rate on completion of assembling , bolting of the joints, launching and complete erection with drifts and service bolts in position with lowering and placing of girder in position .(b) 15% of rate on testing and replacing of loose rivets/bolts , placing of girder on bearing painting etc.complete in all respect . (c)5% of rate after carrying out camber test	MT	480	20400	9792000
7	Riveting of new rivets for the girder including assembling, bolting the holes of the girder with contractors MS bolts of required size with contractor supply of 20/22 mm diameter of suitable length as per the site requirements with contractors scaffolding, tools and plants, holes, furnace, air compressor riveting equipment, drilling machine, welding machine etc., along with required length of hose pipe duly remaining 20mm bolts.	NOS	500	225.00	112500

SI No.	Description of Item	Unit	Qty	Rate	Amount
8	Metalising of full fabricated components of through type steel girder of 45.7Mtr & 15.27Mtr span girders duly preparing the surface by sand/grit blasting as per the specification of metalising and sand/grit blasting (metalising thickness of minimum 115 microns with avg. thk. of 150 microns) and painting with one coat of primer to IS 5666 (1970) followed by one coat of zinc chromite primer to IS (104 microns) and two finishing coat of aluminum paint to IS 2339 (each of 35 microns) with contractors materials, labour, tools and plants scaffolding etc. complete and as directed by the engineer in-charge. detailed procedure shall be followed as per additional special conditions and as per IRS B-1/2001	SQM	6200	520	3224000
No. of Items Eight only		Schedule "J" : Departmental Value			56463500
		Tenderer's / Contractor's percentage			
		Total			

Seal & Signature of the Bidder

Name of Work : - Baiyyappanahalli - Hosur Doubling Project - Proposed Construction of 2X45.7m Open Web Girder for Bridge No.533, 1X15.27m Plate Girder for Bridge No.531 and 2X30m PSC Box Girder for RUB No.519A (only Superstructure) for new doubling line, 1X6.1m PSC Slab & 1X45.7m open web Girder for Bridge No.533 of existing line between Baiyyappanahalli "A" panel and Belandur Road Stations.

Schedule K - Items of miscellaneous works

SI No.	Description of Item	Unit	Qty	Rate	Amount
1	Fabrication and supply of H-Beam sleepers with all fittings including Guard Rails and running rails and fixtures as per RDSOs drg. no.B-1636/8 (with upto date correction). Fabrication as per RDSO specification no.BS45, Hot dip galvanizing as per IS4759, spring washer as per Railway suitable for 25t axle loading standard and specifications there to complete as corrected up to date including supply and riveting of canted bearing plates. The rate shall be including of all cost of preparing and supplying H-beam (ISHB) from standard rolled section conforming to IS2062 Gr.B including supplying and fixing of all required fittings and fixtures duly galvanized as per specification and transporting the sleepers from contractor's workshop to bridge site/Railways depot including loading, unloading and stacking with all lead, lift, descent, ascent, crossing of obstruction, nallah, track etc., handling/re-handling and other incidental works etc., as may be required and including all taxes, duties, octroi, royalty and inspection charges as may be leviable complete in all respect as per special/standard condition. Note; 1. 40% of payment will be released after supply of material for H-beam sleepers to the contractors work shop against submission of BG. 2. 30% of payment will be released on supply of fabricated H-Beam sleepers to the site on submission of BG of equivalent amount. 3.Quantity for PVC for steel supply purpose to be taken as 110kg per sleeper. The general PVC clause (other than steel and cement will be applicable for 60% of the rate.) 4.75% of rate accepted for item no.1 of Schedule J will be taken for assessment of PVC for the element supply of steel.	EACH	270	25000	6750000
2	Performing load test on OW girder of 45.7m span for 25T axle loading standard , including loading unloading the span s, taking observations and all other activities and submission of result to engineer .the complete load test will be carried out as per scheme approved by railways (train locomotive/wagon require for railway loading will be supplied by railways and complete arrangements for loading to be arranged by contractors.this test shall be conducted at the stage of commissioning of the bridge)	SPAN	3	75000	225000
3	Providing caution watchmen at workspot where caution order is imposed at a rate of one caution watchmen per 12 hours shift round the clock with necessary electric torch, banner flags, hand flags etc., who will be on continuous vigil and exhibit necessary hand signals to the trains for their safe passage over the caution spot as directed by the Engineer-in-charge. NOTE : Rate to be quoted as per day (24 hours basis).	Day	180.00	742.00	133560
4	Fixing of reference pillars at the edge of formation with railways rails 41.1/4,60R/90R of 1.5m long fixed in cement concrete foundations of .3 x .3 x .75 m size with 1m length projected above ground level and duly marking proposed formation level and proposed rail level in red enamel paint over white enamel paint background of 10cm band including cutting of rails, loading, unloading, transportation, excavation , erection and painting with contractors supply of paint, labour , tools and plants, all lead and lift etc. complete (cement concrete and cement will be payed separately under relevant item). Rails will be supplied at nominated depot	Each	10.00	50.00	500

Schedule K - Items of miscellaneous works					
SI No.	Description of Item	Unit	Qty	Rate	Amount
5	Design of sub structure including foundation for bridges (ROR/RUB including major bridge) as per latest loading standards for a single line BG track based on soil investigation report, preparation of detailed structural and working drawings with bar bending schedule. Design to be done by recognised/reputed consultants and proof checked by another recognised consultant like IIT, IISC or other university as per approved by KRIDE etc. Submitting approved drawings on a tracing film/ latest tracing material and in Soft Copy along with 6 copies of final working drawings, structural drawings and design calculations with contractor's labour tools plant etc and as directed by Engineer in charge	Each	3.00	90000.00	270000
6	Design of super-structure for bridges (ROR/RUB including major bridge) as per latest loading standards for a single line BG track preparation of detailed structural and working drawings with bar bending schedule. Design to be done by recognised/reputed consultant and proof checked by another recognised consultant like IIT, IISC or other university as per approved by KRIDE etc., submitting approved drawings on a tracing film/latest tracing material and in Soft Copy along with 6 copies of final working drawings, structural drawings, fabrication drawings and designs calculations with contractors labour, tools, plants, etc., and as directed by Engineer-in-charge	Each	3.00	140000.00	420000
7	Providing safety barricading as per drg. No. SWR/CN/BNC/SK/165-2018/R with contractor's materials and labour including all leads and lifts complete as directed by Engineer in charge.(Size 100 mm x 1650 mm Rcc pole) Note: 1. Casting of RCC pillars shall be carried out in nominated depot and submerged water curing. 2. The precast RCC posts shall be transported to date duly handling carefully without causing any damage and erect it at nominated locations as per deg duly ensuring safety of running trains. 3. Maintenance of the rope, RCC pillars etc shall be at the cost of contractor. 4. 90% of the payment shall be released after erecting fencing to the satisfaction of Engineer in charge.	RM	1000.00	327.60	327600
8	Providing and laying of sand bags layer by layer filled with sand in each bag of standard cement bag size with all contractor's own bags, sand, labour, tools and plants including transportation to the site of work complete as directed by the Engineer - in - charge	Each	5000.00	20.00	100000
9	Transportation of steel cribs of size 6' X 2' X 2' made of MS angles of 75mm X 75mm X 10mm/8mm or 65mm X 65mm X 8mm from PWI/stores at Yeswantpur /Midsection wherever available to the bridge spot including leading, loading, transportation and unloading and stacking using contractors own vehicle, labour, tools & plants, consumables etc without damaging any Railway property and as directed by Engineer in-charge. (Approx. Qty. 200 Nos, approx. lead 225 km) UNIT: PER NO. PER KM	Per No. Per KM	45000.00	2.00	90000
10	Supply, fabrication, painting and erection of road traffic warning boards of suitable height for various purposes such as NO PARKING, NO ENTRY, HTV PROHIBITED, etc., as per IRC standards made of 50x50x5 mm MS Angles and 3mm thick MS plate for the board of appropriate size, painting 2 coats with appropriate enamel paint and pasted with reflective stickers/reflective paint on the board erected into the ground with cement concrete 1:3:6 for 0.30x0.30x0.60 metre including earthwork excavation, etc., as directed by the Engineer-in-Charge	Each	10.00	1400.00	14000
11	Excavation along the alignment of signalling cable / OFC / Power cable carefully and exposing the same without any damage and excavating the new trench along the railway alignment or along the alignment as specified by the railway engineer - in - charge, laying or removed cable, filling up all complete with sand and laying a layer of brick with contractor's own materials, tool and plants etc., as directed by the engineer - in - charge. Note: In case the cable is damaged cost of restoration and the cost of cable will be recovered from the contractor. The decision of the railway with regard the cost to be recovered will be final.	RM	494	200	98800

Schedule K - Items of miscellaneous works					
SI No.	Description of Item	Unit	Qty	Rate	Amount
12	<p>Providing site office and office equipments for employer with contractor's material, Labour, Tools and Plant, Equipment etc. including provision of Water Supply, Drainage, Power arrangements, office maintenance as per the details mentioned in Chapter 3 (Site Facilities & office equipment for the Employer and the Engineer) of Section 5 (Works Requirement) of Tender Documents.</p> <p>Note 1: This item is provided with the contention that new site offices will be constructed for this pupose and 75% payment of the accepted rates will be made after making available functional office balance 15% paymane shall be made at the end of the completion period and the remaining 10% will be paid after clearance of site by the contractor</p> <p>Note:2 Alternatively if suitable accommodation is available on hire basis at suitable location acceptable to the employer, the cintractor cab arrange same under he item but in such a case the payment shall be regulated as below</p> <p>(a) 10% payment shall be made on completion of one month from the date of making available the office fit for functionng.</p> <p>(b) Remaining 90% payment shall be paid in equal monthly instalments that is (0.9xquoted rate)/(stipulated Completion period in months + defect liability period in months)</p> <p>Note 3 : In case stipulated period gets extended, payment on monthly basis will be made prorated basis.</p>	per Sq. M of Plinth area	62	13788.00	854856
13	<p>Providing Furniture as given underchapter 3 (Site Facilities & office equipment for the Employer and the Engineer) of Section 5 (Works Requirement) of Tender Documents.</p> <p>Note: Payment shall be made @ 75% of the accepted rate after making available furniture items functional in office, balance 15% paymane shall be made at the end of the completion period and the remaining 10% will be paid after clearance of site by the contractor</p>	LS per site office	1	200000.00	200000
14	Non destructive integrity testing of cast in-situ piles of 1000mm dia as per specifications and submitting reports in the approval format.	EACH	2	1746.22	3492.43
15	Conducting Dynamic load testing on selected piles of routine pile load test, all as per specifications.	EACH	2	75442.74	150885.48
16	Driving "Z" section MS sheet piles , upto 10MM thickness, side by side in all kinds of soil mechanically or manually as per directions of Engineer-in-charge and removing after the work. The rate shall include all labour , materials, tools and plants , lead and lifts as per site conditions including "Z" section sheet pile Note : Measurement will be based on area covered i.e depth of pile actually driven in the earth along the trench multiplied by length of such protection along the trench.	SQM	600	1529.63	917778
17	Performing load test on PLATE GIRDER of 15.27m span for 25T axle loading standard, including loading unloading the spans taking observation and all other activities and submission of results to engineer. The complete load test will be carried out as per scheme approved by Railways (Train locomotive/wagon required for railway loading will be supplied by railways and complete arrangement for loading to be arranged by contractor. This test shall be conducted at the stage of commissioning of the bridge)	SPAN	1	45000.00	45000
18	Painting of crash barrier / kerb stones of CC/ RCC slabs,stone with approved quality reflective type of enamel paint, including one coat of primer with contractors own labour & material etc complete as directed by the Engineer in-charge	10SQM	6000	1400.00	840000
19	Supplying, providing 150mm dia UPVC rainwater downtake pipe of 6 Kg/sqm pressure pipe with accessories like bends, collers etc., as required including providing suitable MS clamps with Bolts & Nuts 3 Nos per stanchion with stanchion with contractor's materials like clamps, Bolts & nuts etc., labours, tools & plants, with all lead, lifts complete as directed by the Engineer-in-charge	Meter	300	410.00	123000

Schedule K - Items of miscellaneous works					
SI No.	Description of Item	Unit	Qty	Rate	Amount
20	a. Providing Toyota Innova Crysta / Toyota Corolla Altis / Honda Civic or similar approved road vehicle(s) as per relevant special conditions	per month	18	54000.00	972000.00
	b. Providing Toyota Yaris G CVT / Honda City 2020 / Hyundai Verna 1.6 CRDI SX(O) / Skoda Rapid 1.5 TDI CR Ambition AT or similar approved road vehicle(s)	per month	18	48000.00	864000.00
	c. Providing Maruti Swift DZIRE / Toyota Etios or similar approved road vehicle(s)	per month	18	40000.00	720000.00
21	Extra payment for providing any of the vehicles mentioned in item no. 20(a) /20(b)/20(c) as per the criteria/ stipulations/specifications/conditions mentioned therein including the notes and in the ASC, with Driver(s) cum Attendant(s) beyond 12 hours a day	Vehicle Hours	432	150.00	64800.00
22	Extra payment for extra distance run, over and above 3000 km per month on certification by the user official				
	a. For the class/type of the vehicle mentioned in item no. 20(a)	Vehicle KM	720	15.00	10800.00
	b. For the class/type of the vehicle mentioned in item no. 20(b)	Vehicle KM	720	13.00	9360.00
	c. For the class/type of the vehicle mentioned in item no. 20(c)	Vehicle KM	720	12.00	8640.00
23	Extra payment for extra days of run, over and above 26 days per month on certification by the user official				
	a. For the class of the vehicle mentioned in item no. 20 (a) with all conditions therein	Vehicle day	72	2100	151200.00
	b. For the class of the vehicle mentioned in item no. 20 (b) with all conditions therein	Vehicle day	72	1900	136800.00
	c. For the class of the vehicle mentioned in item no. 20 (c) with all conditions therein	Vehicle day	72	1600	115200.00
24	Supply of Motor Bike 150CC or more as per relevant special conditions	Per month	72	8000	576000.00
25	Extra payment for extra distance run, over and above 3000 km per month on certification by the user official	Vehicle KM	4000	2.5	10000.00
No. of Items Twenty Five only		Schedule "K" : Departmental Value			15203272
		Tenderer's / Contractor's percentage			
		Total			

Seal & Signature of the Bidder

Milestone

BRIDGE NO	NEW DOUBLING LINE / EXG. LINE	DESCRIPTION	TARGET DATE OF COMPLETION
533	New Double Line	Supply , fabrication & Transportation of 2 X 45.7m Open Web Girder to the site.	10 Months from issue of Letter of awarding of works.
513	New Double Line	Supply , fabrication & Transportation of 1 X 15.27m Plate Girder to the site.	10 Months from issue of Letter of awarding of works.
533	Exg. Line	Supply , fabrication & Transportation of 1 X 45.7m Open Web Girder to the site.	14 Months from issue of Letter of awarding of works.

NOTE : A penalty of Rs 2.50 Lakhs will be imposed per week per span for failure to adhere the above targets.

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