ರೈಲು ಮೂಲಸೌಲಭ್ಯಅಭಿವೃದ್ಧಿ ಕಂಪನಿ (ಕರ್ನಾಟಕ) ನಿಯಮಿತ

रेल इन्फ्रास्ट्रक्चर डेवलपमेंटकंपनी (कर्नाटक) लिमिटेड

Rail Infrastructure Development Company (Karnataka) Limited

BID DOCUMENT

Project:

Yesvantpur - Channasandra Section Doubling

Signaling works at one IBS and 7(seven) LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division

(SINGLE PACKAGE)

Date :02.02 .2021

RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED

"SamparkaSoudha" , 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road,
Rajajinagar 1st Block,
Bangalore - 560 010
Tel +91-63648 90817,
Email: md@kride.in

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B I D D I N G D O C U M E N T S

For Provision of

Yesvantpur - Channasandra Doubling Project

Signaling works at one IBS and 7(seven) LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division.(single package)

IFB No: K-RIDE/DL/05/2021 **Date: 02.02.2021**

K RIDE (**Rail Infrastructure Development Company (Karnataka) Limited)**

"Samparka Soudha" ,
1st Floor, B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road,
Rajajinagar 1st Block,
Bangalore - 560 010
Tel +91-63648 90817,
Email: md@kride.in

K RIDE

NOTICE

FOR

INVITATION FOR BIDS

(IFB)

K-RIDE

Rail Infrastructure Development Company (Karnataka) Limited

INVITATION FOR BIDS

Bid Notice No. ***K-RIDE/DL/05/2021*** ***Date : 02.02.2021***

RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED (K RIDE), having its Corporate office having its Corporate office at **"**Samparka Soudha" , 1st Floor, B.E.P Premises (Opp. Orion Mall), Dr. Rajkumar Road, Rajajinagar 1st Block, Bangalore - 560 010, 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 single packet system for the work of Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division.(single package)

***THE CONTRACT* PACKAGE ARE AS UNDER**

Sl. No.	Name of work	Estimated Cost of Project in Rs.	Bid Security	Period of Completion
Package	Signaling works at one IBS and 7(seven) LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division.(single package)	***7,37,86,084.00***	**Bid Security Declaration form should be filled by the Bidders (Section 4)**	***30 months***

K RIDE

Note : The Bid Security Declaration form should be filled only by the non MSMEs.

1. 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.

2. Bids must be accompanied by a bid security declaration form as mentioned above in the bidding documents

3. Bidding Documents can be downloaded free of cost from K RIDE website **www.kride.in** from 02.02.2021 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. The Tenderer can also have a copy of the same on payment of non-refundable cost of Rs. 11,350/- (Rupees Eleven Thousand Three Hundred and fifty only) for each package by a crossed Demand Draft on any Scheduled bank payable at Bangalore drawn in favour of **Rail Infrastructure Development Company (Karnataka) Limited,** Bangalore.

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 "Samparka Soudha" , 1st Floor, B.E.P Premises (Opp. Orion Mall), Dr. Rajkumar Road, Rajajinagar 1st Block, Bangalore - 560 010**.

4. **Purchase Preference:** Shall not apply to Central Public Sector Enterprises, as per extant rules in force.

5. **Special Provisions for Micro, Small & Medium Enterprises (MSMEs):** MSMEs registered with District Industries Centers / Kadhi and Village Industries Commission/ Khadi and Village Industries Board/Coir Board/ National Small Industries Corporation/ Directorate of Handicraft and Handloom/ 'Udyog Aadhaar' – The Online Portal of MSMEs/ Any other body specified by Ministry of MSME are exempted from the payment of Bid document fee and proposal security for this tender.

6. The provisions of revised 'Public Procurement (Preference to Make in India) Order 2017' issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry vide letter no. P-45021/2/2017-PP (BE-II) dated 28.05.2018 shall be applicable to the bidding process and award of the contract shall be done accordingly. In this connection, the minimum local content shall be 50% and the margin of purchase preference shall be 20%. For award of contract, para 3.c. of the revised 'Public Procurement (Preference to Make in India) Order 2017' (Annexure I of IFB) shall be applicable in addition to the other provisions in the bidding documents in this regard.

K RIDE

7. **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- **25.02.2021** 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.

8. **Address for Communication:** Interested eligible Bidders may obtain further information from the following address:

General Manager (S&T),
Rail Infrastructure Development Company (Karnataka) Limited,
Samparka Soudha", 1st Floor, B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road, Rajajinagar 1st Block,
Bangalore – 560010

Tel +91-63648 90817,
Email: md@kride.in

Annexure I

No. P-45021/2/2017-PP (BE-II)
Government of India
Ministry of Commerce and Industry
Department of Industrial Policy and Promotion
(Public Procurement Section)
****

Dated 28th May, 2018
Udyog Bhawan, New Delhi

To
All Central Ministries/Departments/CPSUs/All concerned

ORDER

Subject: Public Procurement (Preference to Make in India), Order 2017 – Revision; regarding.

Department of Industrial Policy and Promotion, in partial modification of Order No.P-45021/2/2017-B.E.-II dated 15.6.2017, hereby issues the revised 'Public Procurement (Preference to Make in India), Order 2017'' with immediate effect:-

Whereas it is the policy of the Government of India to encourage 'Make in India' and promote manufacturing and production of goods and services in India with a view to enhancing income and employment, and

Whereas procurement by the Government is substantial in amount and can contribute towards this policy objective, and

Whereas local content can be increased through partnerships, cooperation with local companies, establishing production units in India or Joint Ventures (JV) with Indian suppliers, increasing the participation of local employees in services and training them,

Now therefore the following Order is issued :

1. This Order is issued pursuant to Rule 153 (iii) of the General Financial Rules 2017.
2. **Definitions**: For the purposes of this Order:

   'Local *content*' means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

   'Local *supplier*' means a supplier or service provider whose product or service offered for procurement meets the minimum local content as prescribed under this Order or by the competent Ministries / Departments in pursuance of this order.

   'L1' means the lowest tender or lowest bid or the lowest quotation received in a tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation.

   'margin *of purchase preference*' means the maximum extent to which the price quoted by a local supplier may be above the L1 for the purpose of purchase preference.

...Contd. p/2

'Nodal Ministry' means the Ministry or Department identified pursuant to this order in respect of a particular item of goods or services or works.

'Procuring entity' means a Ministry or department or attached or subordinate office of, or autonomous body controlled by, the Government of India and includes Government companies as defined in the Companies Act.

'Works' means all works as per Rule 130 of GFR- 2017, and will also include 'turnkey works'.

3. **Requirement of Purchase Preference :** Subject to the provisions of this Order and to any specific instructions issued by the Nodal Ministry or in pursuance of this Order, purchase preference shall be given to local suppliers in all procurements undertaken by procuring entities in the manner specified hereunder:

a. "In procurement of goods, services or works in respect of which the Nodal Ministry has communicated that there is sufficient local capacity and local competition, and where the estimated value of procurement is Rs. 50 lakhs or less, only local suppliers shall be eligible. If the estimated value of procurement of such goods or services or works is more than Rs. 50 lakhs, the provisions of sub-paragraph b or c, as the case may be, shall apply".

b. "In the procurements of goods or works which are not covered by paragraph 3a and which are divisible in nature, the following procedure shall be followed";

i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract for full quantity will be awarded to L1.

ii. If L1 bid is not from a local supplier, 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the local suppliers, will be invited to match the L1 price for the remaining 50% quantity subject to the local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such local supplier subject to matching the L1 price. In case such lowest eligible local supplier fails to match the L1 price or accepts less than the offered quantity, the next higher local supplier within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on local suppliers, then such balance quantity may also be ordered on the L1 bidder.

c. "In procurements of goods or works not covered by sub-paragraph 3a and which are not divisible, and in procurement of services where the bid is evaluated on price alone, the following procedure shall be followed":-

i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract will be awarded to L1.

...Contd. p/3

i. If L1 is not from a local supplier the lowest bidder among the local suppliers, will be invited to match the L1 price subject to local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such local supplier subject to matching the L1 price.

ii. In case such lowest eligible local supplier fails to match the L1 price, the local supplier with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the local suppliers within the margin of purchase preference matches the L1 price, then the contract may be awarded to the L1 bidder.

4. **Exemption of small purchases**: Notwithstanding anything contained in paragraph 3, procurements where the estimated value to be procured is less than Rs. 5 lakhs shall be exempt from this Order. However, it shall be ensured by procuring entities that procurement is not split for the purpose of avoiding the provisions of this Order.

5. **Minimum local content**: The minimum local content shall, ordinarily be 50%. The Nodal Ministry may prescribe a higher or lower percentage in respect of any particular item and may also prescribe the manner of calculation of local content.

6. **Margin of Purchase Preference**: The margin of purchase preference shall be 20%.

7. **Requirement for specification in advance**: The minimum local content, the margin of purchase preference and the procedure for preference to Make in India shall be specified in the notice inviting tenders or other form of procurement solicitation and shall not be varied during a particular procurement transaction.

8. **Government E-marketplace**: In respect of procurement through the Government E-marketplace (GeM) shall, as far as possible, specifically mark the items which meet the minimum local content while registering the item for display, and shall, wherever feasible, make provision for automated comparison with purchase preference and without purchase preference and for obtaining consent of the local supplier in those cases where purchase preference is to be exercised.

9. **Verification of local content**:

a. The local supplier at the time of tender, bidding or solicitation shall be required to provide self-certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.

b. In cases of procurement for a value in excess of Rs. 10 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

c. Decisions on complaints relating to implementation of this Order shall be taken by the competent authority which is empowered to look into procurement-related complaints relating to the procuring entity.

...Contd. p/4

e. Nodal Ministries may constitute committees with internal and external experts for independent verification of self-declarations and auditors/ accountants certificates on random basis and in the case of complaints.

f. Nodal Ministries and procuring entities may prescribe fees for such complaints.

f. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

g. A supplier who has been debarred by any procuring entity for violation of this Order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities, in the manner prescribed under paragraph 9h below.

h. The Department of Expenditure shall issue suitable instructions for the effective and smooth operation of this process, so that:

   i. The fact and duration of debarment for violation of this Order by any procuring entity are promptly brought to the notice of the Member-Convenor of the Standing Committee and the Department of Expenditure through the concerned Ministry /Department or in some other manner.

   ii. on a periodical basis such cases are consolidated and a centralized list or decentralized lists of such suppliers with the period of debarment is maintained and displayed on website(s);

   iii. in respect of procuring entities other than the one which has carried out the debarment, the debarment takes effect prospectively from the date of uploading on the website(s) in the such a manner that ongoing procurements are not disrupted.

10. **Specifications in Tenders and other procurement solicitations**

a. Every procuring entity shall ensure that the eligibility conditions in respect of previous experience fixed in any tender or solicitation do not require proof of supply in other countries or proof of exports.

b. Procuring entities shall endeavour to see that eligibility conditions, including on matters like turnover, production capability and financial strength do not result in unreasonable exclusion of local suppliers who would otherwise be eligible, beyond what is essential for ensuring quality or creditworthiness of the supplier.

c. Procuring entities shall, within 2 months of the issue of this Order review all existing eligibility norms and conditions with reference to sub-paragraphs 'a' and 'b' above.

d. If a Nodal Ministry is satisfied that Indian suppliers of an item are not allowed to participate and/ or compete in procurement by any foreign government, it may, if it deems appropriate, restrict or exclude bidders from that country from eligibility for procurement of that item and/ or other items relating to that Nodal Ministry. A copy of every instruction or decision taken in this regard shall be sent to the Chairman of the Standing Committee.

.....Contd. p/5

e. For the purpose of sub-paragraph 10 c above, a supplier or bidder shall be considered to be from a country if (i) the entity is incorporated in that country, or ii) a majority of its shareholding or effective control of the entity is exercised from that country, or (iii) more that 50% of the value of the item being supplied has been added in that country. Indian suppliers shall mean those entities which meet any of these tests with respect to India."

11. **Assessment of supply base by Nodal Ministries:** The Nodal Ministry shall keep in view the domestic manufacturing / supply base and assess the available capacity and the extent of local competition while identifying items and prescribing minimum local content or the manner of its calculation, with a view to avoiding cost increase from the operation of this Order.

12. **Increase in minimum local content:** The Nodal Ministry may annually review the local content requirements with a view to increasing them, subject to availability of sufficient local competition with adequate quality.

13. **Manufacture under license/ technology collaboration agreements with phased indigenization:** While notifying the minimum local content Nodal Ministries may make special provisions for exempting suppliers from meeting the stipulated local content if the product is being manufactured in India under a license from a foreign manufacturer who holds intellectual property rights and where there is a technology collaboration agreement / transfer of technology agreement for indigenous manufacture of a product developed abroad with clear phasing of increase in local content.

14. **Powers to grant exemption and to reduce minimum local content:** Ministries /Departments of Government of India and the Boards of Directors of Government companies or autonomous bodies may, by written order,

    a. reduce the minimum local content below the prescribed level;

    b. reduce the margin of purchase preference below 20%;

    c. exempt any particular item or procuring or supplying entities or class or classes of items or procuring or supplying entities from the operation of this Order or any part of the Order.

    A copy of every such order shall be marked to the Member-Convenor of the Standing Committee constituted under this Order.

15. **Directions to Government companies:** In respect of Government companies and other procuring entities not governed by the General Financial Rules, the administrative Ministry or Department shall issue policy directions requiring compliance with this Order.

16. **Standing Committee:** A standing committee is hereby constituted with the following membership

    Secretary, Department of Industrial Policy and Promotion—Chairman
    Secretary, Commerce—Member
    Secretary, Ministry of Electronics and Information Technology—Member
    Joint Secretary (Public Procurement), Department of Expenditure—Member
    Joint Secretary (DIPP)—Member-Convenor

....Contd. p/6

The Secretary of the Department concerned with a particular item shall be a member in respect of issues relating to such item. The Chairman of the Committee may co-opt technical experts as relevant to any issue or class of issues under its consideration.

17. **Functions of the Standing Committee.** The Standing Committee shall meet as often as necessary but not less than once in six months. The Committee

   a. shall oversee the implementation of this order and issues arising therefrom, and make recommendations to Nodal Ministries and procuring entities

   b. shall annually assess and periodically monitor compliance with this Order

   c. shall identify Nodal Ministries and the allocation of items among them for issue of notifications on minimum local content

   d. may require furnishing of details or returns regarding compliance with this Order and related matters

   e. may, during the annual review or otherwise, assess issues, if any, where it is felt that the manner of implementation of the order results in any restrictive practices, cartelization or increase in public expenditure and suggest remedial measures

   f. may examine cases covered by paragraph 13 above relating to manufacture under license/ technology transfer agreements with a view to satisfying itself that adequate mechanisms exist for enforcement of such agreements and for attaining the underlying objective of progressive indigenization

   g. may consider any other issue relating to this Order which may arise.

18. **Removal of difficulties:** Ministries /Departments and the Boards of Directors of Government companies may issue such clarifications and instructions as may be necessary for the removal of any difficulties arising in the implementation of this Order.

19. **Ministries having existing policies:** Where any Ministry or Department has its own policy for preference to local content approved by the Cabinet after 1st January 2015, such policies will prevail over the provisions of this Order. All other existing orders on preference to local content shall be reviewed by the Nodal Ministries and revised as needed to conform to this Order, within two months of the issue of this Order.

20. **Transitional provision:** This Order shall not apply to any tender or procurement for which notice inviting tender or other form of procurement solicitation has been issued before the issue of this Order.

(B. S. Nayak)
Under Secretary to Government of India
Ph. 23061257

PART I	Bidding Procedure

Section 1	Instructions to Bidders (ITB)

Section 1 Instructions to Bidders (ITB)

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 a single percentage for any schedule
14.9	Non-submission of the Letter of Bid (LB) and/or BOQ
19.0	Bid not accompanied with bid security declaration form duly sealed and signed

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 means any person or firm or company, including any member of a consortium or joint venture (that is an association of several person, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders started hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process. 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/ Consortium:

(i) The number of partners in the JV/ Consortium 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/ Consortium 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/ Consortium during the bidding process and, in the event the JV/ Consortium 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/ Consortium is the successful bidder, the Joint Venture/ Consortium Agreement should be entered by the Joint Venture/ Consortium partners. The duly signed Joint Venture/ Consortium Agreement should be submitted along with the Performance Security to the employer after notification of the award of contract within 28 days.

(c) Only firms that are registered or incorporated in India are eligible to compete. Any bidder from a country which shares a land with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.

(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)/ Consortium, submits more than one offer irrespective of whether the firm is quoting against this bid. The bids submitted by two different bidders, having any common participant in JV/ Consortium formation or any common partner in partnership firms, or an individual will be treated as having conflict of interest or

(f) a Bidder participated as a consultant in the preparation of the design or 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.

4.3.1 Conflict of Interest:

K RIDE requires that Consultants provide professional, objective and impartial advice and at all times hold the Client's interests paramount, avoid conflicts with other assignments or their own corporate interests and act without any consideration for future work. Consultants shall not be recruited for any assignment that would be in conflict with their prior or current obligations to other clients, or that may place them in a position of not being able to carry out the assignment in the best interest of the Client. Without limitation on the generality of the foregoing, Consultants, and any of their associates shall be considered to have a conflict of interest and shall not be recruited under any of the circumstances set forth below:

i) If a consultant combines the function of consulting with those of contracting and/or supply of equipment and/or supply of services other than consulting; or

ii) If a consultant is associated with or affiliated to a contractor or manufacturer for this project; or

iii) If a Consultant is owned by a contractor or a manufacturing firm with departments or design offices offering services as Consultants. The Consultant should include relevant information on such relationships along with a statement in the Proposal cover letter to the effect that the Consultant will limit its role to that of a Consultant and disqualify itself and its associates from work, in any other capacity or any future project within the next five years, that may emerge from this assignment (including bidding for any part of the future project). The Consultant selected to undertake this assignment will give an appropriate undertaking to such effect, while signing the agreement; or

iv) If there is a conflict among consulting assignments, the Consultant (including its personnel and sub-consultants) and any subsidiaries or entities controlled by such consultant shall not be recruited for the relevant assignment.

A Consultant cannot be recruited to carry out an assignment that, by its nature, will result in conflict with another assignment of such Consultant. For example, a Consultant engaged to prepare engineering design for an infrastructure project shall not be recruited to prepare an independent environmental assessment or to proof check the designs for the same project. Similarly, a Consultant assisting a client in privatization of public assets shall neither purchase nor advise purchasers of such assets or a Consultant hired to prepare Terms of Reference for an assignment shall not be recruited for the assignment in question.

There are generally 3 types of consultancy services in K RIDE i.e.

(i) Pre-Investment studies (PETS & Bankability Studies),

(ii) Detailed Engineering & Design (FLS & DDE) and

(iii) Project Implementation (PMC).

If a consultancy firm has carried out pre-investment studies mentioned in (i) above, there may be advantage for appointing the same firm to carry out the consultancy mentioned in (ii) and (iii) above. Hence there is no conflict of interest involved for a firm doing the consultancy for (i) and/or (ii) and/or (iii).

4.3.2. *If a Consultant submits or participates in more than one Proposal, such a Consultant shall be disqualified.*

4.3.3 Proposal Validity

4.3.3.1 The Data Sheet indicates how long the Consultants' Proposals must remain valid after the submission date.

4.3.3.2 The Employer will make its best effort to finalise the Contract within this period. In exceptional circumstances, the Employer may request Consultants to extend the validity period of their Proposals. The request and the responses shall be made in writing. In case Consultant extends validity of their proposal, the bid security as furnished in accordance with ITB Clause 19, shall also be extended upto the date mentioned in the letter of request for extension. Consultants have the right to refuse to extend the validity period of their Proposals.

4.3.3.3 ***Participation of Government Employees:***

The Government employees are not permitted to undertake any assignment without the approval of the Government as per extant Government rules. In addition to this, no close relatives of K RIDE staff should be proposed for participation in the assignment.

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/ Consortium 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

Part A: Particular Conditions of Contract Data (PCC)

Part B: Specific Conditions of Contract (SCC)

Section 8: Contract Forms (COF)

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.

6.4The 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

7.1A 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 This provision shall not apply

11.2 This provision shall not apply

11.3 This provision shall not apply

11.4 The Bid shall contain the following :

(a) Letter of Bid in accordance with ITB 16;

(b) Bid Security, in accordance with ITB Clause 19;

(c) Alternative 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 This provision shall not apply

12. Bid Letters and Price Schedules

12.1 TheBidder shall submit Technical proposal and Separate Price Proposal 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 letter of 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 Bid (LB)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 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 contract has to be quoted separately 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 This provision shall not apply

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 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 Bid

16.1 The Bidder shall furnish a commitment in Letter of Bid (LB) for deployment of equipment and personnel as stipulated in Section 5: Work's Requirement.

16.2 The bidder shall furnish commitment in LB 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 Bid (LB) for adhering to mobilization as stipulated in Section 5: Work's Requirement.

16.4 Bidder should note that non-submission of the Letter of 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 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 Security of a JV/ Consortium shall be in the name of the JV/ Consortium that submits the bid. If the JV/ Consortium 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/ of JV/ Consortium mentioned in ITB Clause 4.1.

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original of the Bid as described in ITB Clause 11 and clearly mark as "ORIGINAL". In addition, the Bidder shall submit copies of the Bid, in the number specified in the BDS and clearly mark them "COPY NO… - 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 Proposal and marked "ORIGINAL PROPOSAL".

21.2 This provision shall not apply

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

21.4 This provision shall not apply

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 This provision shall not apply

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 "WITHDRAWL, "SUBSTITUTION", "MODIFICATION", 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 Bids in the presence of Bidders' representatives who choose to attend, at the address, date and time specified in the BDS.

25.2 This provision shall not apply

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 of letter of Bid shall be exchanged, which are to be returned to the Bidder unopened. Only the Substitution letter of Bid, if any, shall be opened, read out, and recorded. 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 letter of 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 the Bid. Only the Bid, both Original as well as Modification, are to be opened, read out, and recorded at the opening.

25.6 All other envelopes holding the 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 declaration form, if required; and

(d) any other details as the Employer may consider appropriate.

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

25.7 The Employer shall prepare a record of the opening of 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 This provision shall not apply

25.9 This provision shall not apply

25.10 This provision shall not apply

25.11 This provision shall not apply

25.12 This provision shall not apply

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 Bid 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 Bid, 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, 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 Bid 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 This provision shall not apply

32. Correction of Arithmetical Errors and Omissions in 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 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 the Bid for which the experience in similar works as mentioned in Section 3 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 Bid, the Employer shall consider the following:

(a) the bid, 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 This provision shall not apply.

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 (0.9x engineer's estimated price – L1 price) or (0.95 x L2 price – 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 x engineer's estimated price – (1-17/100) x engineer's estimated price} = {0.07 x engineer's estimated price} = 7% of engineer's estimated price or {0.95 x (1-8/100) x engineer's estimated price – (1-17/100) x engineer's estimated price} = {0.044 x 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;

(Overall contract price – Overall estimated price) x 100 ÷ 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.

43. Special Provisions for Micro, Small& Medium Enterprises (MSMEs): MSEs registered with District Industries Centers/ Khadi and Village Industries Commission/ Khadi and Village Industries Board/Coir Board/ National Small Industries Corporation/ Directorate of Handicraft and Handloom/ 'Udyog Aadhaar' – The Online Portal of MSME/ Any other body specified by Ministry of MSME are exempted from the payment of RFP document fee and proposal security for this tender.

44. The provisions of revised 'Public Procurement (Preference to Make in India) Order 2017' issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry vide letter no. P-45021/2/2017-PP (BE-II) dated 28.05.2018 shall be applicable to the bidding process and award of the contract shall be done accordingly. In this connection, the minimum local content shall be 50% and the margin of purchase preference shall be 20%. For award of contract, para 3.c. of the revised 'Public Procurement (Preference to Make in India) Order 2017' shall be applicable in addition to the other provisions in the bidding documents in this regard.

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Section 2	Bid Data Sheet (BDS)

Section 2	Bid Data Sheet (BDS)

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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A. Introduction

ITB 1.1	The number of the Invitation for Bids is*:* ***K-RIDE/DL/05/2021*** ***Date : 02.02.2021***
ITB 1.1	The Employer is: K RIDE (**Rail Infrastructure Development Company (Karnataka) Limited), Bangalore**
ITB 1.1	Signaling works at one IBS and 7(seven) LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division.(single package)
ITB 4.1(b)(i)	No of partners :2

B. Bidding Documents

ITB 7.1	For clarification purposes only, the Employer's address is General Manager (S&T), K RIDE (Rail Infrastructure Development Company (Karnataka) Limited) #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, opposite Orion Mall, Rajajinagar 1st Block, Bengaluru– 560010 Mobile No : +91-63648 90817 E – Mail: md@kride.in
ITB 7.4	**A Pre-Bid meeting is schedule on the following date, time and venue:** No Pre bid Meeting Proposed.

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. In Section 7, Part B Special Conditions of Contract (SCC).**
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 declaration form as mentioned in the notice for invitation of bid
ITB 19.2 to 19.7	Not applicable
ITB 20.1	In addition to the original of the bid, the number of copies is: NIL
ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: (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 (b) In case of firms, Power of Attorney by the Proprietors. (c) In case of JV/Consortium, POA by the JV/ Consortium partners.

D. Submission and Opening of Bids

ITB 22.1	For bid submission purposes only, the Employer's address is: General Manager (S&T)/K RIDE, K RIDE (Rail Infrastructure Development Company (Karnataka) Limited) #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, opposite Orion Mall, Rajajinagar 1st Block, Bengaluru– 560010 Mobile No : +91-63648 90817 E – Mail: md@kride.in **The deadline for bid submission is:** **Date: 25.02.2021** ***Time: 15:00 hrs.***
ITB 22.2	Electronic bid submission **is not** permitted.
ITB 25.1	The bid opening shall take place at: Rail Infrastructure Development Company (Karnataka) Limited *Floor/Room No.* #8, 1st Floor, Samparka Soudha, *Street Address* Dr. Rajkumar Road, Opposite Orion Mall, Rajajinagar, *City* Bangalore *Pin Code* 560010 *Country* *Indian Republic* *Mobile No.* *6364890817* *Fax:* --- *E – Mail* md@kride.in **Bid Opening**: **Date: .25.02.2021** ***Time: 15:30 hrs.***
ITB 25.2	Electronic bid opening procedure is **Not permitted.**

E. Evaluation and Comparison of Bids

ITB 35.5 (a) & (b)	Not Applicable (as per Ministry of Finance Office Memorandum dated 12th November 2020)

ITB 42	Bangalore

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Section 3	Evaluation & Qualification Criteria (EQC)

Section 3	Evaluation & Qualification Criteria (EQC)

I N D E X

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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 and Bill of Quantities (BOQ) Section 9 regarding work methods, scheduling, and material sourcing.

1.2. DELETED (Multiple contract/package)

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 Perference to CPSEs shall not apply.

1.5.2. Domestic Preference

Domestic Preference is not applicable.

2. Eligibility Criteria:

2.1Technical 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 signaling works (EI/RRI/PI/Auto block signaling/ IBS/LC gate/BPAC) either indoor or outdoor or both

  Note: While bidding in the tender for MSDAC works, the bidder must take OEM/its RDSO approved Indian partner's authorized breakup of numbers of each cards/modules and other accessories. It includes spares card break up and shall submit the authorization of RDSO approved source (OEM or its RDSO approved source) from which the MSDAC is being taken. After the award of the contract, MOU with same RDSO approved source whose authorization is taken at the time of bidding covering supply of the equipment of MSDAC, installation, testing and commissioning of MSDAC by the same RDSO approved source including after sales-support required during the warranty period and beyond the warranty period, before supply of equipment is undertaken.

(b) 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 sub-contractor 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 KRIDE.

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 upto 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:

Available Bid Capacity = [A x N x 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 ongoing 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/Consortium, the tenderer(s) must furnish the details of existing commitments and balance amount of ongoing works with each member of JV/

Consortium 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 up to 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/Consortium shall be reckoned only to the extent of the concerned member's share in that JV/Consortium 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/ Consortium'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.

(g) Special Provision ***for*** ***Micro, Small & Medium Enterprises (MSMEs):***

i) Applicants registered with the agencies (as mentioned in para iii) below) as Micro, Small & Medium Enterprises (MSMEs) are exempted from the payment of BID/bidding document fee.

ii) Applicants registered with the agencies (as mentioned in para iii) below) as Micro, Small & Medium Enterprises (MSMEs) will be exempted from deposit of Proposal/Bid Security.

iii) Applicants who are interested in availing themselves of above benefits will enclose with their proposal;

a) The proof of their being micro or small or medium enterprise (MSME) registered with any of the following agencies;

1. District Industries Centers
2. Khadi and Village Industries Commission
3. Khadi and Village Industries Board
4. Coir Board
5. National Small Industries Corporation
6. Directorate of Handicraft and Handloom

7. 'Udyog Aadhaar' – The Online Portal of MSMEs

8. Any other body specified by Ministry of MSMEs.

b) Supporting document(s) indicating the terminal validity date of registration which should be a date after the deadline for submission of proposals, failing which, their proposals shall not be liable for consideration of benefits detailed in para (i) & (ii) above.

c) In case of Joint Venture/Consortium, the aforesaid MSME benefits will not be applicable

(h) ***Preference to Make in India:***

The provisions of revised 'Public Procurement (Preference to Make in India) Order 2017' issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry vide letter no. P-45021/2/2017-PP (BE-II) dated 28.05.2018 shall be applicable to the bidding process and award of the contract shall be done accordingly. In this connection, the minimum local content shall be 50 and the margin of purchase preference shall be 20%. For award of contract, para 3.c. of the revised 'Public Procurement (Preference to Make in India) Order 2017' shall be applicable in addition to the other provisions in the bidding documents in this regard.

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 propriety 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 propriety 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 propriety firm "P" or partner in some other partnership firm "AX", credentials of A in propriety 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.]

Table showing the eligibility criteria limits

Rs. In Crores

S.No	Description	Package
	Estimated Value of Work	7.38
	Minimum Value of qualifying criteria	
1	SW1 – 30%	2.21
	SW2 – 40%	2.95
	SW3 – 60%	4.43
2	F E. 150%	11.07
3	Bid Capacity	NA

Note:

1) Technical Eligibility Criteria: (Clause 2.1 of section 3)

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 as defined in clause 2,

or

SW2 : Two similar works as defined in clause 2,

or

SW3 : One similar work each as defined in clause 2.

2) Similar work is defined as below:

Execution of signaling works (EI/RRI/PI/Auto block signaling/ IBS/ LC gate/BPAC) either indoor or outdoor or both.

Note: While bidding in the tender for MSDAC works, the bidder must take OEM/its RDSO approved Indian partner's authorised breakup of numbers of each cards/modules and other accessories. It includes spares card break up and shall submit the authorization of RDSO approved source (OEM or its RDSO approved source) from which the MSDAC is being taken. After the award of the contract, MOU with same RDSO approved source whose authorization is taken at the time of bidding covering supply of the equipment of MSDAC, installation, testing and commissioning of MSDAC by the same RDSO approved source including after sales-support required during the warranty period and beyond the warranty period, before supply of equipment is undertaken.

3) F.E : Financial Eligibility Criteria as defined in Clause 2.2 of section 3

4) I. **Staffing Schedule:** The firm will be required to submit an undertaking that contractor shall deploy the personnel as per KRIDE.'s advice from the Staffing schedule which will be decided by KRIDE.

II. Approach and Methodology: The firm will be required to submit an undertaking that the Approach and Methodology for the project will be decided by the contractor in consultation with consultant and Employer as per stipulations in the construction contract agreement(s) for which the contractor's services are contemplated. It will be ensured that the approach and methodology prepared is in compliance to requirements in section 5 of the Bid document.

III. **Responsiveness:** Deleted

IV. **The Contractor shall be disqualified if**:

(a) The contractor has been blacklisted/ banned for business dealings for Government Departments, or by Ministry of Railways or by KRIDE at any time till finalization of proposals, except in cases where such blacklisting/banning has been withdrawn by Competent Authority or has ceased on the deadline for submission of the proposals, for which satisfactory evidence is to be produced.

(b) Any previous contract of the contractor had been terminated for Contractor's failure by Rail infrastructure Development company (Karnataka) Limited (KRIDE)/ Railway Organization at any time starting from 2 years before the deadline for submission of proposals and upto one day before the date of opening of financial proposals;

i. Provided, however, there is no stay order or declaration by any Court against such termination of the Contract by the Rail Infrastructure Development Company (Karnataka) Ltd./ Railway Organization or such termination of the Contract has not been revoked by Rail Infrastructure Development Company (Karnataka) Ltd/ Railway Organization.

(c) The contractor 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.

(d) The contractor is found ineligible by the Employee, In accordance with ITB3.

(e) The contractor has been declared by KRIDE to be a poor performer and the period of poor performance is still in force on the deadline for submission of proposals.

Or

(e) The contractor has been declared by KRIDE to be a poor performer at any time after the deadline for submission of proposals and upto one day before the date of opening of financial proposals.

(f) The contractor has 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 (available on website of Indian Railways), consequent to having been banned business dealings or suspended business dealings or having been declared a poor performer.

The Contractor 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 contractor shall result in summary rejection of his proposal.

V. Contractor shall immediately inform the Employer in case they cease to fulfill eligibility in terms of of ITB 4.4. In case the contractor fails to inform the Employer or submits a false affidavit his proposal shall be summarily rejected and proposal security shall be forfeited. The contractor shall also be liable for Banning of Business dealings for a period up to five years.

VI. The Bid Documents floated for the execution of the works of this Project, related drawings, and KRIDE Standard Specifications for Materials and Works are available in the Office of the Employer at the address specified in Data Sheet. The Contractor may examine these documents at any time during the working hours in this Office.

VII. **Examination of BID Documents**: In preparing their Proposals, Contractor are expected to examine in detail the documents comprising the BID. Material deficiencies in providing the information requested in the BID documents may result in rejection of Proposal.

--00--00--00--

K RIDE

Section 4 Bidding Forms

Section 4 Bidding Forms

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
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2	Format for Affidavit (along with Bid)	PS 2	57-59

S.No	Title	Form Number	Page No
3	Bid Security Form	BDF/1 (NA)	60-62
4	Letter of participation from Each partner of joint venture (JV)/ Consortium	JV/Consortium/1	63-64
5	Power of attorney for authorized signatory of joint venture (JV)/ Consortium partners	JV/Consortium/2	65
6	Power of attorney to Lead partner of joint venture (JV)/ Consortium	JV/Consortium/3	66-67
7	Draft MoU for JV/Consortium	JV/Consortium/4	68-72
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K RIDE

S No	Title	Form Number	Page No
	Bidder Qualification		**77-78**
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18	Checklist for clauses pertaining to Summary Rejection of bid	Form No 2	87
19	Format for certificate to be submitted by bidder along with the bid	Form 3 C1	88
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21	Bid Security Declaration Form	Form 4	90

Note: NA stands for Not applicable

K RIDE

Form : PS 1

Letter of Bid

(To be given on the Letter head of the Firm)

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 the bid for which we have submitted the bid security declaration form and we will be considered for award, subject to fulfilling the eligibility criteria as given in bidding document;

(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 .....

(SEAL AND SIGNATURE OF THE BIDDER)

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 the methodology of the discount(s) quoted, the bid shall be considered as incomplete and will be rejected.

Form: PS 2

FORMAT FOR AFFIDAVIT TO BE SUBMITTED BY BIDDER ALONG WITH 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/ Consortium 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/ Consortium) 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 fulfil 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 declaration form 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 declaration form. 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)

K RIDE

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, S&T
Rail Infrastructure Development Company (Karnataka) Limited,
"Samparka Soudha" , 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Rajajinagar 1st Block,
Bangalore - 560 010.

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 Bank's Seal
Name & address & 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.

K RIDE

Form: JV/Consortium/1

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

(On each Firm's Letter Head)

No…. Dated

From:
……..
……..

To

The General Manager, S&T
Rail Infrastructure Development Company (Karnataka) Limited,
"Samparka Soudha", 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Rajajinagar 1st Block,
Bangalore - 560 010.

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/ Consortium by name of …… with for the purposes associated with IFB referred to above.

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

2. 'The JV/ Consortium 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/ Consortium.'

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/ Consortium:

3. In the event of our group being awarded the contract, we agree to be jointly with …… (names of other members of our JV/ Consortium)…… and severally liable to the (K RIDE) 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/ Consortium.

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

Form: JV/Consortium/2

FORMAT FOR POWER OF ATTORNEY FOR AUTHORISED SIGNATORY OF JOINT VENTURE (JV)/ CONSORTIUM 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 of ……as 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:	Witness 2:
Name:	Name:
Address:	Address:
Occupation:	Occupation:

**Notes:*

i) To be executed by all the partners individually, in case of a Joint Venture/ Consortium.

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/Consortium/3

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

(***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 ATTORNEY[1]

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

Whereas, the members of the Joint Venture/ Consortium 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/ Consortium 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/ Consortium, all acts, deeds and things as may be necessary in connection with the Joint Venture's/ Consortium's bid for the project, as may be necessary in connection the Joint Venture's/ Consortium'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/ Consortium, as the lead partner of the Joint Venture/ Consortium, to do on behalf of the Joint Venture/ Consortium, all or any of the acts, deeds or things necessary or incidental to the Joint Venture's/ Consortium'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/ Consortium 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/ Consortium.

Dated this the ……..… Day of …….. 200..

…….
(Signature)

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

Witness 1:	Witness 2:
Name:	Name:
Address:	Address:
Occupation:	Occupation:

K RIDE

Notes:

1. To be executed by all the Partners of the JV/Consortium 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/ Consortium/4

DRAFT MEMORANDUM OF UNDERSTANDING (MOU[2])
For
JOINT VENTURE PARTICIPATION/ CONSORTIUM PARTICIPATION

BETWEEN

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

And

M/s ……..having 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_____.

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

3. M/s ……shall be the lead member of the JV/ Consortium for all intents and purpose and shall represent the Joint Venture/ Consortium 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/ Consortium partners **(Bidder shall ensure that the JV/ Consortium partner who is qualifying minimum 70% of the EQC requirement of the key activity under Clause 2.3.1, 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/ Consortium Partner Share.....%

Responsibilities

(I) Key Activities and %age execution assigned

(i) .....

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

(i) .....

(ii) .....

(iii) .....

K RIDE

(c) Joint Venture/ Consortium 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/Consortium partner then indicate the breakup of that Item/Bill no. for each JV/Consortium 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/Consortium.

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 and the Employer.

7. **EXECUTIVE AUTHORITY**

The said Joint Venture/Consortium 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 declaration form of a JV/ Consortium *shall be in the name of the* JV/ Consortium *that submits the bid. If the* JV/ Consortium *has not been legally constituted at the time of bidding, the Bid Security declaration form shall be in the names of all future partners through which* JV/ Consortium *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/ Consortium.

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/ Consortium 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/ Consortium 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/ Consortium 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)

*****

K RIDE

Form: JV/Consortium/5

DRAFT FORMAT OF JOINT VENTURE/CONSORTIUM AGREEMENT

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

and

M/s …….having 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/ Consortium as under and have agreed to participate.

3. M/s ……shall be the lead member of the JV/ Consortium for all intents and purpose and shall represent the Joint Venture/ Consortium 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/Consortium partners **(Bidder shall ensure that the JV/Consortium partner who is qualifying minimum 70% of the EQC requirement of the key activity under Clause 2.3.1 of this section, 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// Consortium 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// Consortium 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/ Consortium partner then indicate the breakup of that Item/Bill no. for each JV/ Consortium 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/Consortium.

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/ Consortium 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**

Performance Security and other Securities of a JV/ Consortium *shall be in the name of the JV/* Consortium *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/ Consortium.

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 Bangalore.

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/ CONSORTIUM 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)

K RIDE

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

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.

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)	

K RIDE

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/ Consortium named in above, in accordance with ITB 20.2.
3. In case of JV/ Consortium, MOU to form JV/ Consortium or JV/ Consortium agreement, in accordance with ITB 4.1.

SEAL AND SIGNATURE

Form ELI - 2: JV/ Consortium Information Sheet

Each member of a JV/ Consortium must fill in this form separately

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

K RIDE

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/Consortium must fill in this form separately)

NAME OF BIDDER/JV/CONSORTIUM 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)					

K RIDE

_____

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/ Consortium, 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.

KRIDE

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

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

NAME OF BIDDER/JV/CONSORTIUM 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 5 years			

K RIDE

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/Consortium 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	Des-crip-tion of work	Contrac t No. & date	Name & address of Employer, Tel./Fax/ Email	Value of Con-tract in INR	Stipulated Period of completio n	Value of Balanc e work	Anti-cipa-ted date of Com ple-tion
1							
2							
Total							

K RIDE

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	❑ **Contractor** ❑		❑ **Subcontractor**
Total Contract Amount	**INR**		
If partner in a JV/ Consortium 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			

K RIDE

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	❑ **Contractor**		❑ **Subcontractor**
Total Contract Amount	**INR**		
If partner in a JV/ Consortium 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

Important Note for special attention of Bidders:

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.
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 Execution of signaling works (EI/RRI/PI/Auto block signaling/ IBS/IBH) either indoor or outdoor or both	
2.4 Personnel: Undertaking submitted	
2.5 Equipment: **Undertaking submitted**	
2.6 Specialist sub-contractor undertaking: submitted 1) Foundation - if applicable	

Each bidder should submit detail/references as to how the eligibility criteria is being made by the bidder against each item of EQC. This should be prepared and submitted in the proforma EQC form No.1 enclosed in Section 4.

K RIDE

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 undermentioned 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 Summary sheet of BOQ
16.4	Non-submission of the Letter of Bid (LB)
19.0	Bid not accompanied with bid security declaration form duly sealed and signed

K RIDE

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: _____

K RIDE

(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: _____

K RIDE

(SEAL AND SIGNATURE OF THE BIDDER)

Form 4

Bid Security Declaration Form

Tender No. _____ Date:_____

To,
The General Manager, S&T,
Rail Infrastructure Development Company (Karnataka) Limited,
#8, 1st Floor, Samparka Soudha, Dr.Rajkumar Road,
Opposite Orion Mall Rajajinagar 1st Block, Bengaluru-560052

I/We, (Name of bidder) am/are aware that I/We have been exempted from submission of Bid Security/Earnest Money Deposit in lieu of this Bid Security Declaration. According to your conditions, bid must be supported by a Bid Security Declaration.

I/We accept that I/We may be disqualified from bidding for any contract of works/service with K RIDE/Government of India and its PSUs/ Government of Karnataka and its PSUs for **a period of one year** from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

a) have withdrawn/modified/amended, impaired or derogated from the tender, Bid during the period of bid validity specified in the form of Bid; or

b) if awarded the tender and on being called upon to submit the Performance Guarantee/Performance Security fail to submit the same within the stipulated time period mentioned in tender documents or on being called upon to sign the contract agreement fail to sign the same within stipulated period mentioned in tender documents, in accordance with the Instructions to Bidders.

I/We understand this Bid Security Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

(Signature)

(Name of Signatory)…….

(Capacity of Signatory)……

Seal

Duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)

Dated on _____ day of _____ (insert date of signing)

Corporate Seal (where appropriate)
(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid).

--00--00--00--

PART II	Work's Requirements

Section 5	Works/Employer's Requirements

Section 5 Works/Employers Requirements

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	92-103
2	General Information and Scope of work	104-114
3	Site Facilities for the Employer and the Engineer	115-116
4	Specifications	117
5	Personnel	118-119
6	Equipment	120-121

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 or 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 SSE/Sig or SSE/Tele or SSE/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 SSE/P.Way or SE/Works shall pass on the information to the concerned SSE/Sig ,SSE/Tele or SSE/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, SSE/Sig or SSE/Tele or SSE/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 SSE/P. Way/SSE/Works/SSE/Sig/SSE/Tele/SSE/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 SSE/Sig or SSE/Tele or SSE/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 SSE (Signal), SSE (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 contactor 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 : Deleted

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_____ supervisor Incharge of M/S_____ has been examined regarding S&T working on_____ work. His knowledge has been found satisfactory and he is capable of supervising the work safely.

_____

ASSISTANT ENGINEER"

1.5. The work of formation in banks and cuttings through out 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 through out 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.

1.8. 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

(c) such works. Approval by the Engineer of any such proposal shall not relieve the contractor of his responsibility for the sufficiency of such works.

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 authorities including Commissioner of Railway Safety through the Engineer in advance and well in time.

(f) Notwithstanding the above, the contractor shall not, however, be relieved of his responsibility and obligation as aforesaid.

(g)

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 wherever applicable.

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. 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.

2. Periodical formal counseling of all contractor's staff and PMC officials regarding safety instructions and review violations coming to light and taking appropriate action.

3. Counseling of drivers and operators of machinery regarding safety aspect during routine inspection of PMC officials contractors Engineers.

4. 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.

5. Necessary caution orders to Drivers of trains wherever required in terms of Railway Board's instructions/PCE circulars.

6. 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 Railway 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.

2. GENERAL INFORMATION AND SCOPE OF WORK

2.0 SCOPE OF WORK

The proposed work is in connection with the doubling of track between **Yesvantpur - Channasandra in single Package:**

Single Package: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division. (single package)

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

Introduction:

i) This is part of the project for doubling of railway line between **Yesvantpur - Channasandra *section of Bangalore Division***.

ii) The scope of work includes signalling and telecommunication works Outdoor activities to suit 25KV RE. The proposed work will be taken up in a phased manner and may involve 2 to 3 interim stage modifications.

2.1. Details of Work:

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(S&T) / K RIDE to carry out some specific works in order to strengthen/repair the road, GM(S&T) / K RIDE shall get such works executed through the existing contractor or any other agency and make payment for such work.

2.2 Salient features of the Station:-

A.

i)

Sl. No	Description	Provision of double line between Yesvantpur - Channasandra *section*
1	Type of Interlocking	Centralized EI
2	No of Routes	Less than 50
3	Type of track ckts	MSDAC/Conventional track circuiting

ii) Details of Level Crossings: There are 7 interlocked LCs in the entire section LC No. 144A, 144, 143, 142, 141, 140, 137

iii) ELECTRIFICATION: The work shall be executed as per 25KV RE standards.

iv) SIGNALING & TELECOMMUNICATION WORKS

Signaling & telecommunication works in connection with the provision of doubling between **Yesvantpur - Channasandra *section of Bangalore Division on South Western Railway***

2.3 **The Nature of work:**

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

A. Other Activities:

1. 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.
2. Making and supply of 'As Built' drawings for the new assets created.

2.3.2 SIGNALING & TELECOMMUNICATION WORKS

1. Provision of Signaling works at 1 IBS and 7 LC Gates in Yesvantpur - Channasandra section of Bangalore Division on South Western Railway.
2. Provision of interlocking of level crossing gates located in station section
3. Interlocking of mid section LC gates as per requirement and approved Signal Interlocking Plans.
4. Provision of motor operated points, MSDAC, HASSDAC and MACLS, Outdoor Modifications related with conversion from Single line to double line & phase works.
5. Designing and documentation including completion documents of signalling drawings for outdoor work.

	6. Removal of S&T infringements or shifting of signalling gears like LC gates, location boxes, signals, cables etc. and telecom gears like cables, EC post etc. to facilitate the progress of earth work and bridge work for double line. 7. Supply and installation of signaling equipments viz. signal units and accessories, Block Working with axle counter, location boxes and accessories, track circuit equipments, point machines with ground connection, electric lifting barrier , data logger with networking etc. 8. Erection of Relay rack, CT rack, wiring of relays, testing and alterations in circuits, painting and lettering of all indoor gears, releasing of all indoor gears etc. 9. Outdoor work of trenching and laying of cables, foundation for signals, location boxes, etc. wiring of location boxes, signal units, points machines, track circuits, axle counter jointing of signaling cables, earthing, RE protection, erection of electrical lifting barrier, painting and lettering of all out door gears, releasing of all outdoor gears. 10. Testing of all indoor equipments for functional/operational requirements and all outdoor equipments of signals, points, track circuits, LC gates etc and carrying out necessary adjustments and modifications in consultation with Engineer. Preparation of all documents related with testing and test reports. ***Note :*** The above is not an exhaustive list covering all the works to be done under this Tender. Major works only have been listed for guidance.
2.4	**Special stipulations/features:** **Inspection of S & T Work** 2.4.6 S &T work is required to be carried out in accordance with conforming to RDSO Specifications No. RDSO/SPN/192/2019 for EI with latest amendments issued. The installation practices of all signaling gears should be as per the Signal Engg Manual Part I &II issued in September 2001 and to suit latest relevant correction slips. The work is required to be carried out in accordance with the RE manual for stations falling under 25 KV electrified traction. The execution is required to be carried as per standard specifications of K-RIDE. However, specifications, drawings and other details mentioned in BOQ or in special conditions, wherever applicable will prevail over the standard specifications. 2.4.7 The Signal & Telecom material to be supplied by the contractor as per RDSO Specifications/ Drawings will have to be procured from approved Vendors appearing in Vendor Directories of RDSO and to be supplied duly inspected by RDSO. In case where no manufacturers are available in approved vendors list issued by RDSO, procurement may be done through the firms included in RDSO Vendors for Developmental order as per

Railway Board's letter No. 99/RS(G)709/1 dated 18.11.2016 and 2001/RS(G)/779/7 PT 1 dated 29.06.2017.

In case of signalling relays, 20% of requirement of each type of relay can be procured from RDSO approved vendors for developmental order as per Railway Board's letter no. 2001/RS(G)/779/7 Pt 2 dated 25.06.2018.

For procurement through RDSO Vendors for Developmental order, prior approval of K-RIDE's Engineer shall be obtained.

2.4.8 The Signal & Telecom material to be supplied by the contractor as per TEC/DOT/BSNL specification will have to be procured form DOT/TEC approved firms. The inspection of such items will however be carried out by RDSO provided the value is more than value stipulated in inspection policy of RDSO.

2.4.9 In case the contractor is supplying imported equipments from approved manufacturer, then in addition to manufacture's test certificate, such equipments shall be inspected by RDSO.

2.4.10 Signal & Telecom items not inspected by RDSO/ RITES for any reason will be inspected by the Engineer / Authorized Representatives of K-RIDE. In case of any difficulty in inspection, K-RIDE may decide the authority of inspection, either by any other Govt. agency or by consignee. Whenever materials are inspected by Authorised Representatives of the K-RIDE/Engineer, the contractor will be required to furnish his or manufacturer's Guarantee Certificate.

2.4.11 The K-RIDE shall have full power to reject any material that it may consider defective or inferior in quality, workmanship, or otherwise not in accordance with the Specification and the K-RIDE's decision shall be final, even though they might have been inspected by RDSO/RITES. The contractor shall remove forthwith any such material rejected and replace them promptly at his own cost. Inspected and accepted material, if damaged during transit shall be replaced by the contractor free of cost prior to installation.

2.4.12 Inspection Charges of RDSO and RITES will be borne by the Contractor. *In case of Change of Inspection from RDSO/RITES to K-RIDE/Consignee,1% of cost of material to be deducted by K-RIDE ,as Inspection Charges.*

2.4.13 Items included in the list of items to be inspected by RDSO & RITES and are not inspected by RDSO/RITES for any reason whatsoever and will be inspected by the Authorized Representatives of K-RIDE. The following conditions will apply:

i) Material conforming to RDSO spec/drg is procured from RDSO approved source.

ii) Contractor shall submit Manufacturer's Guarantee Certificate for the material.

iii) All such cases where change in agency of inspection other than mentioned in the schedule is required will be processed for specific approval of competent authority.

Procurement and storage of materials

2.4.14 Procurement of Track, S&T and Electrical Items has to be planned by the contractor in consultation with the Engineer and procurement plan shall be got approved from the Employer before placing any orders for such materials.

Procurement Plan should be prepared in such a manner that those materials which have a shelf life like rubber pads etc may be procured in a staggered manner so that the materials are used before its properties get modified with age. The procurement of materials shall be planned as per the milestone/key activities specified in pursuance to GCC clause 8.3. If the material/product does not remain of required specifications at the time of its actual use, the same will be replaced by the contractor with materials conforming to Specifications at his own cost.

The procurement of materials for the works by the contractor shall also be subject to the following:

(i) **Procurement Schedule:**

SN	Items	Schedule
1	Supply of items under S&T BOQ	The procurement process should commence after GM/AGM/Sr.DGM in-charge of S&T portion of the work, approves the programme of procurement proposed by the contractor such that materials proposed for procurement are expected to be installed within a year of receipt. However, to facilitate formation work, Cables, Wires Location Boxes, Terminals, Level Crossings and other associated items required for replacement/shifting of existing cables/location box/level crossing etc to the extent of 20% of BOQ quantity or higher quantity may be procured at the beginning with the approval of GM of the department.
2	The contractor would make out a list of items for which procurement process to start indicating the expected time of arrival at site and installation as per the period indicated above. The concerned GM/S&T would approve the programme.	

(ii) Based on the above schedule, the contractor shall prepare BOQ

Schedule/Bill-wise procurement plan and submit a statement in the following format:

Procurement Plan- Installment No.1				
BOQ Bill No:				
Item No.	Description	BOQ Quantity	Quantity planned for procurement	Justification for placing order for procurement (lead, likely month of execution/installation)

Certified that all efforts have been taken to ensure that the quantity of materials being planned for procurement is as per the BOQ and as per the requirement at the site based on approved drawing.

Contractor

The requirement planned is commensurate with the progress of work and as per approved drawing/ design.

Engineer/PMC

Approved

GM/S&T

While submitting the 1st stage payment of the materials, a copy of the above approval certificate should accompany the bill/IPC."

(iii) **Reconciliation of materials after each milestone is reached:** For procurement of materials in subsequent instalment(s), the contractor shall enclose along with his proposal, a review statement of consumption already made or likely to be made in respect of materials already procured in the following format:

Review of the materials procured up to Previous Installment					
BOQ Bill No:					
Item No.	Description	Quantity procured upto previous Installment	Quantity Consumed/ installed	Balance Quantity	Remarks

Considering the consumption and further targets, second installment of materials may approved for procurement.

Contractor

The requirement planned is commensurate with the progress of work and as per approved drawing/ design.

Engineer/PMC

Approved
GM(S&T)

2.4.15 If the Contractor is required to purchase certain material(s) from firms in the approved list of RDSO/Zonal Railways /K-RIDE, as per terms and conditions of the contract, then the Contractor shall place orders accordingly on firms appearing in the approved list, as specified, on the date of placing the order and provide details of such orders placed to K-RIDE.

In case the contractor places an order on an approved firm, but the firm is subsequently de-listed before the supply is completed, then in such cases, if there are any outstanding orders on the de-listed firm, then wherever the balance delivery period is available , the extent of supply made by the firm within the original delivery period, shall be accepted provided it passes the inspection of RITES/RDSO/inspecting authority specified in the contract. If the de-listed firm fails to deliver the material within the original delivery period, no extension shall be granted by the Contractor to such firms after date of issue of de-listing order. In case where delivery period has expired, no extension shall be granted and all such orders shall be cancelled and a fresh purchase action should be taken.

2.4.16 The plant and materials etc. so procured for the works shall be properly stored on Site and protected against loss, damage or deterioration. For this purpose, the contractor shall make necessary arrangements of store godown/fenced area at site in Railway land as per directions of Engineer. In case the contract is terminated, the Employer shall have the right to take possession of the godown/store and reasonable cost of such store/godown shall be determined by the Engineer and included in the Final Payment Certificate

2.5	**CODES & SPECIFICATIONS**
	The works shall be carried out as per Standard Specifications of 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 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:** This Provision shall not apply
2.7	**Bench marks:** This Provision shall not apply
2.8	**Alignment:** This Provision shall not apply
2.9	**Responsibility for establishing and maintaining working bench**

	marks and alignment markers : This Provision shall not apply
2.10	**Issue of materials by Employer:** This Provision shall not apply
2.11	**INTERFACING AND INTEGRATION OF WORKS :-**
2.11.1	As a part of double line between **Yesvantpur - Channasandra *section*** Section, Outdoor S&T works will be done in this bid. Hence interfacing for the purpose of integration of works between different Contractors of **Civil and Electrical** is of very much importance so that progress of work is not hampered. Coordination between all agencies has to be ensured. Such interfacing for the purpose of integration of works will arise between the partners of JV, in case the work is awarded to a JV or between the Contractor and his sub-contractors will arise or among different contractors. This has to be kept in view.
2.11.2	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.
2.11.3	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.
2.11.4	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.
2.11.5	It is the intention of the Employer that the overall interfacing, planning, scheduling, logistic administration inclusive of necessary logistic planning and all tasks that are necessary to guarantee proper co-ordination and

	proper interfacing of all activities during the complete execution of the works, is clearly understood and agreed to. Integrated programme shall set out in detail how the different contractors will work together in execution of the works. It shall also spell out the overall interfacing, planning, scheduling, logistic administration inclusive of necessary logistic planning and all tasks that are necessary to guarantee proper co-ordination and proper interfacing of the different activities by various agencies during the execution of the works. A master schedule incorporating the milestone of works completion by each contractor shall be included in the integrated programme to demonstrate the capability of all parties involved in the completion of the works wherever applicable. The essence of the integrated programme shall be that the contractors have both overall responsibility for the completeness and the timeliness of all the works and quality of the contractual works within the agreed time frame. Allowance need to be made by the contractors in their resources and pricing to ensure that proper co-ordination of the various items is incorporated in their contract.
2.11.6	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.
2.11.7	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.
2.11.8	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.
2.11.9	**Damages 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.

2.12	**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.
2.13	**Power Line Crossings: DELETED**
2.14	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.

2.15 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.

3. SITE FACILITIES FOR THE EMPLOYER AND THE ENGINEER

SINGLE PACKAGE- Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division.(single package) The Contractor shall provide for the use of the Employer / Engineer, 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 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 take away all the materials & 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 : DELETED

3.3 FURNITURE AND OTHER OFFICE EQUIPMENT : DELETED

3.4 TRANSPORT : DELETED

3.5 OFFICE MAINTENANCE : DELETED

3.6 EQUIPMENT FOR USE OF THE ENGINEER.

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 **One nos.**	With minimum specification of Intel Core i7, 3.4 GHz, 3 MB Cache, 4 GB DDR3 RAM, 500 GB Hard Disk Drive, DVD Writer, 18.5” colour TFT monitor, 10/100 LAN Card, Modem Card, Operating System - Windows 8 Professional or higher preloaded with media and documentation and certificate of authenticity and Microsoft Security Essentials preloaded antivirus software.
(b)	Laptop rugged –	With minimum specification of Intel Core i5, 4 GB RAM, 500 GB Hard Disk Drive, 11.6” color display,

	One Nos.	2xUSB-2.0, standard keyboard Weight - not more than 2.5 kg, 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 printer shall be all in one office jet having features of Fax, Scanner and Printer, A3 size printer shall be Colour Office jet with a print speed of up to 8 pages at 800 dpi or More.
(d)	Application software	(i) Microsoft office latest release. (ii) AUTOCAD 3D 2015 (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)	2 MBPS internet connection with Wi-Fi facility so that multiple devices can be connected.	

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

SINGLE PACKAGE – Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division.(single package)

Standard Specifications for Materials and Works of K-RIDE

Separate priced booklet containing Indian Railway/South Western Railway Standard Specifications for Materials and Works Civil, Electrical and Signaling 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 K-RIDE's Standard Specifications for Materials and works (Civil, Electrical and Signaling and Telecommunication) including latest correction slips issued up to the date 28 days prior to the deadline for submission of bids before quoting the rates.

Works are to be executed as per above referred specifications except for Methodology of Mechanised Laying and Packing of Track, which is specified below-

METHODLOGY OF MECHANISED LAYING AND PACKING OF TRACK: DELETED

4.1 TECHNICAL SPECIFICATION FOR CONSTRUCTION OF SERVICE & RESIDENTIAL BUILDINGS : This provision shall not apply.

5. PERSONNEL

SINGLE PACKAGE - Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division.(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 here under:-

S. No.	Position	Minimum No. of Personnel	Qualification	Minimum Experience In Similar Work [years]
1	Sr. Engineers	2	Preferably Graduate in Electronics/Elect. But must be minimum Diploma in Electronics/Elect.	3years(for Graduate) 5 years for Diploma ; Experience in construction of EI/RRI/PI
2	Supervisors/S &T	1	Diploma in Electronics/Elect.	Minimum 3 years experience in construction of EI/RRI/PI
3	Draftsman with knowledge of AUTOCAD S&T	1	Minimum Diploma in Electrical/Electronics/ Communication Engineering OR a combination of basic streams of Electrical/Electronics/ Communication Engg.	3 years
4	Wire man	6 WireMen + 6 Asst. WireMen per station during Pre NI & NI	Wireman	Minimum Experience of 5 years

Note:

(1) The programme for deployment of 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 unde

a) Rs.1000 per person per day for Sr. Engineers, Supervisors / S&T and Draftsman with knowledge of AUTOCAD S&T;

b) Rs 500 per person per day for Wire man and 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 (S&T)/K RIDE on recommendation of the concerned AGM/Sr.DGM(S&T) in case of ex-Railwayman who has worked in Signalling and Telecommunication Engineering department of Railway in a position of Gazetted officer for Sr Engineer (S&T) / Junior Engineer or above for Supervisor (S&T) and has relevant experience not less than that prescribed for minimum professional qualification.

(4) The experience requirement can be relaxed by the concerned GM (S&T)/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.

6. EQUIPMENT

SINGLE PACKAGE- Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channasandra section of Bangalore Division.(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 S&T work		
1	Portable Generators of all capacities as per site requirement	2 Nos.
2	Drilling machines of all type as per site requirement	2 Nos
3	Track Drilling machines of all type (mechanical cycle chain type and electrical type) as per site requirement	2 Nos
4	Grinders of all types as per site requirement	2 Nos.
5	Jacks for cable Laying	4 Sets
6	Concrete Shutters for Apparatus case full	4 Sets
7	Concrete Shutters for Apparatus case half	2 Sets
8	Concrete Shutters for Signal Post	4 Sets
9	Concrete Shutters for Shunt Signal	2 Sets
10	Tool Kits for fitters – Mechanical Installation gang (Location Box / Apparatus cases, Signals, etc.)	02 Sets
11	Tool kit for fitters – Electro-mechanical gang (Track circuiting, Point machines, Axle counters, Circuits controllers, Level locks & relay Rack equipment.)	02 Sets
12	Tool kit for locking fitters cum LC gate interlocking. Key lock point interlocking & ground level frame interlocking.	1 Sets
13	Wireman's tool kit consisting of Multimeter, Meggar, Box spanner, Nose Plier, Holding Plier, buzzer, wooden hammer, Clamp type ampere meter etc.	04 Sets
14	Carpenter tool kit	1 Sets
15	Earth tester	2 Set
16	Torches	8 Nos.
17	Material loaders / Mini trucks /Matadors / Bolero's	2 Sets
18	VHF – Walkie Talkies Sets	6 Sets
19	Hand Phones – Cell Phones	15 Sets

Note:

1. 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.

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(S&T)/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.

PART III	Conditions of Contract and Contract Forms

Section 6	General Conditions of Contract (GCC)

Section 6	General Conditions of Contract (GCC)

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General Conditions

1.	General Provisions

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-paras (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.

1.16 Bidder's Credentials:

The bidder shall submit an affidavit on a stamp paper to the effect that all the documents submitted by her along with her bid are true. This shall be mandatory all bids. The bid shall be summarily rejected if the bidder fails to submit this undertaking along with the bid. After opening the financial bid, the tender committee shall verify the credentials of the bidder who is declared as the lowest bidder(L1)for their authenticity. In case the credentials of L1 are not found to be in order, her bid shall be treated as technically unresponsive and thus invalid. The process shall be repeated for the next higher bidder till the valid L1 is established. If any document (or copy thereof) submitted by a bidder is found to be false/forged:

(a) The bidder/each partner/member of the bidding firm shall be liable to legal actions apart from punitive actions, as decided by competent authority of K-RIDE. In such an eventuality. The bid shall also be summarily rejected.

(b) If the contract has already been awarded, or Letter of Acceptance (LoA) has been issued and in the event of any failure to comply with the above, the contract shall be terminated, irrespective of the stage of progress in execution of the work. In such an eventuality, Security Deposit (SD), performance Guarantee (PG) and partial/full payments otherwise due to the contractor, in respect of the partial/full work executed by the contractor, shall be forfeited by the K-RIDE.

(c) Other punitive actions, like banning the bidder and partners/members of the biding firm for future dealings with K-RIDE/Government of India/ Government of Karnataka may also be taken.

2	The Employer

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 assistanceto 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	The Engineer

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].

4 The Contractor

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.

Without limitation to the provisions of the rest of this Sub-Clause, whenever the Engineer 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 x B)÷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 sub-contract 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 woks 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 meansas 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 accountal 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.

5 Nominated Subcontractors

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.

6	Staff and Labour

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 Appendex – 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."

7 Plant, Materials and Workmanship

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

8.1 Commencement of Works

The Engineer shall give the Contractor not less than 7 days' notice of the Commencement of work. Unless otherwise stated in the Special Conditions of Contract, the Commencement of work 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 @ $1/10^{th}$ 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 Tests on Completion

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 sub-paragraph (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 Employer's Taking Over

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.

11 Defects Liability

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 Measurement and Evaluation

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.

13 Variations and Adjustments

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 Adjustmentsfor 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.

13.8Adjustment 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) $$L = W \times (LQ - LB) \times \frac{LC}{LB} \times \frac{}{100}$$

(ii) $$M = W \times (MQ - MB) \times \frac{MC}{MB} \times \frac{}{100}$$

(iii) $$F = W \times (FQ - FB) \times FC$$

$$\frac{FB}{100}$$

(iv) $E = W \times \frac{(EQ - EB) \times EC}{EB \quad 100}$

(v) $PM = W \times \frac{(PMQ-PMB) \times PMC}{PMB \quad 100}$

(vi) $S = SW \times \frac{(SQ - SB)}{SB}$

(vii) $C = CV \times (CQ - CB) / CB$

For Railway Electrification Works:

(viii) $T = [(CS - CO) / CO \times 0.4136] \times TC$
(ix) $R = [(RT - RO) / RO + (ZT - ZO) / ZO \times 0.06] \times RC$
(x) $N = [(PT - PO) / PO] \times NC$
(xi) $Z = [(ZT - ZO) / ZO] \times ZC$
(xii) $I = [(IT - IO) / IT] \times 85$

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 The Contract Price

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 theContractor 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	Termination by Employer

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 x B) ÷ 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.*

16	Deleted

17	Risk and Responsibility

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.

18 Insurance

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

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 of 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

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; ora 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.

APPENDIX 1

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 Providesfor 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 Part A	Particular Conditions of Contract (PCC) Contract Data

Section 7 Particular Conditions of Contract

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.

Part A – Contract Data

Conditions	Reference to GCC	Data
Employer's name and address	1.1.2.2 & 1.3	K RIDE (Rail Infrastructure Development Company (Karnataka) Limited) (A Joint venture of GoK and MoR) #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, opposite Orion Mall, Bengaluru – 560010 Mobile No 6364890817
Employer's Representative	1.1.2.6	General Manager (S&T)/K RIDE, K RIDE (Rail Infrastructure Development Company (Karnataka) Limited) #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, opposite Orion Mall, Bengaluru – 560010 Mobile No 6364890817 E – Mail: md@kride.in
Engineer's name and address	1.1.2.4 & 1.3 (b)	*Will be notified later*
Defects Notification Period	1.1.3.7	180 days.
Address for Communication to Employer	1.3 (b)	General Manager (S&T)/K RIDE, K RIDE (Rail Infrastructure Development Company (Karnataka) Limited) #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, opposite Orion Mall, Bengaluru – 560010 Mobile No 6364890817 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
Time for access to Site (after the date of	2.1	Starting from the Date of Commencement, the section will be progressively handed over within 90 days.

Conditions	Reference to GCC	Data
commencement)		
Performance Security	4.2	(a) The Performance Security shall be for an amount of 3% (Three 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; (i) to submit full performance security for an amount equal to 3% of the contract price; or (ii) to submit part performance security for an amount equal to 1.5% 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.
Normal working hours	6.5	Sunrise to Sunset (This will 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.
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		Bengaluru
Percentage of Retention Money	14.3	Retention money shall be deducted @ 2% of the total value of 'exclusive supply items' of BOQ i. against which last installment of stage payment is included in the interim payment certificate for items having stage payment condition; ii. full payment against items (not having any stage payment condition) included in the interim payment certificate.

Conditions	Reference to GCC	Data
Limit of Retention Money	14.3	2% of the Contract Price Refer 7B
Employers' Bank details for Letter of Credit **(a) Nodal Branch** **(b) Issuance/ reimbursing branch for LC**	14.7.1	(a) IDBI Bank, 11, First Cross, Gandhinagar, P B No. 9931, Bangalore 560009 IFSC Code – IBKL0000551 A/c No - 0551104000143226 (b) Should be indicated later
Maximum Total Liability of the Contractor	17.6	Accepted Contract Amount
Periods for submission of insurance: **a) evidence of insurance** **b) relevant policies**	18.1	a) 14 days b) 28 days
Maximum amount of deductibles for insurance of Employer's risks.	18.2 (d)	NIL
Minimum amount of insurance by the Contractor for Works and Contractor's Plant and Materials including loss or damage to equipment.	18.2	100 (hundred) percent of Contract price

Conditions	Reference to GCC	Data
Minimum amount of insurance by the Contractor for Third party insurance including damage to Other Property and personal injury or death insurance for: a) for other people, and b) for Contractor's Employees.	18.3	Rs.2 (two) crores per occurrence without any limit for number of occurrences.
Jurisdiction of Courts	21	*Bengaluru*

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Section 7 Part B	Special Conditions of Contract (SCC) Specific Provisions

Section 7	Special condition of contract

Part B -Special condition of contract

Whenever there is a conflict or in consistency between the provisions of the Special Conditions of Contract–Section 7 PART B and the General Conditions of Contract–Section 6, the provisions stipulated in Special Conditions of Contract–Section 7 PART B shall prevail and supersede those appearing in the General Conditions of Contract–Section 6.

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SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

(i) The Special Conditions of Contract contained herein shall be supplemented to the "General Conditions of Contract 2014 updated with latest correction slips". In the event of any conflict or inconsistency between them, the Special Conditions of contract contained herein shall prevail.

(ii) The Contract labour (Regulation and Abolition) Act-1970 (CLRA) as amended upto date will form part of the contract Agreement. Further it is obligatory on the part of every contractor to obtain a valid license from the licensing officer before under taking /executing the work.

(iii) Latest RDSO specifications shall be considered wherever applicable as per the organization requirement.

(iv) In case of any conflicts and deficiencies in the tender documents and schedules, K-RIDE will have rights to take final decisions.

2. SCOPE OF WORK

2.1 The scope of this work broadly includes,

3 Execution of outdoor signaling works, it includes trenching, cable laying, casting foundations for Location boxes, signal and erection, wiring, MSDAC, HASSDAC installation, provision of earthing arrangements, etc….

3.1.1 Supervision and Maintenance of the signaling system provided as part of this contract for 12 months after the date of commissioning without any extra payment.

3.2 The work shall be carried out according to the technical specifications referred; drawings approved by the KRIDE and shall conform to the provision of Signal Engineering Manual and schedule of dimensions. The contractor shall be solely responsible for the proper execution of the work as per specification.

3. COMPLETION PERIOD OF WORK: 30 Months

4. MAINTENANCE:

4.1 The contractor shall maintain the executed work in all respect including material & works for any defect & fault for a **period of 12 months** from the date of issue of Provisional Acceptance Certificate entirely free of cost including repairing of cards and equipments without any additional cost of spares and repairs etc. This 12 month period shall be referred as Maintenance Period.

4.2 Provisional Acceptance Certificate shall be issued only, when work is completed at site in all respect, station is commissioned for FIRST phase, and items recorded in the Note of Joint Inspection with Open line after commissioning of first phase work are complied.

4.3 The services of Maintenance Technician/ Supervisor/ Engineer shall be made available throughout day and night for the period of **12** months and as and when required by the KRIDE Engineer/ Representative. The contractor shall ensure the Railway personnel are fully acquainted and familiar with the detailed procedure to follow for proper testing and satisfactory maintenance of equipments. Necessary disconnection of working signaling Equipments and systems shall be arranged by the K RIDE Engineer.

5. WARRANTY:

5.1 The contractor shall warranty that all materials and equipment to be supplied and installed as per this tender shall be free from defects and faults in design, material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standard for materials of the type ordered and in full conformity with the contract specification.

5.2 This warranty shall be for a period of 12 Months from the date of completion of the work, i.e. date of issue of the Provisional Acceptance certificate as defined in Para 4.2 above.

5.3 During the period of Warranty, the Contractor shall remain responsible to arrange replacement and for setting right at his own cost any equipment supplied by him which is of defective manufacture or defective design or defective material/ component becomes unworkable due to any cause whatsoever. The decision of K RIDE to attend to any damage or defect in work shall be final and binding on the contractor.

5.4 If it becomes necessary for the contractor to replace or renew any defective portions of the system under this clause, the provision of this clause shall apply to the expiry of six months from the date of which replacement or renewal or until the end of the warranty period whichever may be later. If any defect is not remedied within reasonable time, the K RIDE may proceed to do the work at contractor's risk and expense, but without prejudice to any other rights, which the K RIDE may have against the contractor in respect of such defects.

5.5 All inspections, replacements or renewals carried out by the contractor during the warranty period shall be subject to the same conditions of the contract.

5.6 All replacement and repairs and design change that the K RIDE shall call upon the contractor to deliver or perform under this warranty shall be delivered and performed by the contractor within one month, promptly and satisfactorily.

5.7 The decision of the **K-RIDE** in regard to contractor's liability and the amount, if any, payable under this warranty shall be final and conclusive.

5.8 Due to analysis of failures, if any design deficiency is pointed out by the K RIDE, the contractor shall rectify it at his own cost.

6. VARIATION IN QUANTITIES:

6.1 The drawings referred to in the list of plans, if any, are intended only to give a rough and general idea of the location and approximate details of work to be done. No claim whatsoever will be admissible in respect of any alteration/ addition/ deletion/ change in the type of works/ change in locations.

6.2 The quantities of various items given in the Schedule for the works to be executed are only approximate and are only for the guidance of the tenderer/ contractor. As far as possible, they have been assessed correctly but are likely to vary during the execution of the work. The contractor's attention is drawn to clause 42 of the General Conditions of Contract dealing with variation in quantities.

6.3 The Procedure detailed below shall be adopted for dealing with variations in quantities during execution of works contracts:

6.3.1 Individual NS items in contracts shall be operated with variation of plus or minus 25% and payment would be made as per the agreement rate. For this, no finance concurrence would be required.

6.3.2 In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, the same shall be got executed by floating a fresh tender. If floating a fresh tender for operating that item is considered not practicable, quantity of that item may be operated in excess of 125% of the agreement quantity subject to the following conditions:

(a) Operation of an item by more than 125% of the agreement quantity needs the approval of an officer of the rank not less than GM Grade:

(i) Quantities operated in excess of 125% but up to 140% of the agreement quantity of the concerned item, shall be paid at 98% of the rate awarded for that item in that particular tender:

(ii) Quantities operated in excess of 140% but up to 150% of the agreement quantity of the concerned item shall be paid at 96% of the rate awarded for that item in that particular tender:

(iii) Variation in quantities of individual items beyond 150% will be prohibited and would be permitted only in exceptional unavoidable circumstances with the concurrence of associate finance and shall be paid at 96% of the rate awarded for that item in that particular tender.

(b) The variation in quantities as per the above formula will apply only to the Individual items of the contract and not on the overall contract value.

(c) Execution of quantities beyond 150% of the overall agreement value should not be permitted and, if found necessary, should be only through fresh tenders or by negotiating with existing contractor, with prior personal concurrence of GM (Finance) and approval of Managing Director.

6.3.3 In cases where decrease is involved during execution of contract:

(a) The contract signing authority can decrease the items up to 25% of individual item without finance concurrence.

(b) For decrease beyond 25% for individual items or 25% of contract agreement value, the approval of an officer not less than rank of GM/ may be taken, after

obtaining `No Claim Certificate' from the contractor and with finance concurrence, giving detailed reasons for each such decrease in the quantities.

(c) It should be certified that the work proposed to be reduced will not be required in the same work.

6.3.4 The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1% of the total original agreement value.

6.3.5 No such quantity variation limit shall apply for foundation items.

6.3.6 As far as SOR items are concerned, the limit of 25% would apply to the value of SOR schedule as a whole and not on individual SOR items. However, in case of NS items, the limit of 25% would apply on the individual item irrespective of the manner of quoting the rate (Single percentage rate or individual item rate).

6.3.7 The aspect of vitiation of tender with respect to variation in quantities should be checked and avoided. In case of vitiation of the tender (both for increase as well as decrease of value of contract agreement), sanction of the competent authority as per single tender should be obtained.

7. VITIATION CLAUSE:

K RIDE will exercise control over the aspect of vitiation of tender with respect to variation in quantities and take action as under:

(a) In the event of vitiation occurring due to increase or decrease in quantities among the first, second and third lowest valid tenderers, the vitiation shall be to Contractors account. The total value of the work done shall be calculated at the rate offered by those tenderers and the amount payable shall be limited to the lowest aggregate value as worked out.

(b) Vitiation amount shall be worked out for each and every on-account bill when the value of the work executed reaches 50% of the agreement value and the vitiated amount shall be adjusted at every stage.

8. PERFORMANCE GUARANTEE:

8.1 The Procedure of **Performance Guarantee** is outlined below:

The Performance Security shall be for an amount of 3% (Three 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;

(i) to submit full performance security for an amount equal to 3% of the contract price;

or

(ii) to submit part performance security for an amount equal to 1.5% 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.

The successful bidder shall submit a Performance Guarantee (PG) within 30 (thirty) days from the date of issue of Letter Of Acceptance (LOA). Extension of time for submission of PG beyond 30 (thirty) days and up to 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 15% per annum shall be charged for the delay beyond 30 (thirty) days, i.e. from 31st day after the date of issue of LOA. In case the contract fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract shall be terminated duly forfeiting EMD and other dues, if any payable against that contract. The failed contractor shall be debarred from participating in re-tender for that work.

(i) A Irrevocable Bank Guarantee

Note: The instruments as listed above will also be acceptable for Guarantees in case of Mobilization Advance.

(a) The Performance Guarantee shall be submitted by the successful bidder after the Letter of Acceptance (LOA) has been issued, but before signing of the contract agreement. This P.G. shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case, the time for completion of work gets extended, the contractor shall get the validity of P.G. extended to cover such extended time for completion of work plus 60 days.

(b) The value of PG to be submitted by the contractor will not change for variation up to 25% (either increase or decrease). In case during the course of execution, value of the contract increases by more than 25% of the original contract value.

(c) The Performance Guarantee (PG) against all Schedules of the contract shall be released after physical completion of the work based on `Acceptance Certificate' issued by the competent authority stating that the contractor has completed the work in all respects satisfactorily. The Security Deposit shall, however, be released only after expiry of the maintenance period and after passing the final bill based on `No Claim Certificate' from the contractor.

(d) Whenever the contract is rescinded, the Security Deposit shall be forfeited and the Performance Guarantee shall be enchased. The balance work shall be got done independently without risk & cost of the failed contractor. The failed contractor shall be debarred from participating the tender for executing the balance work.

(e) The engineer shall not make a claim under the Performance Guarantee except for amounts to which K RIDE is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

(f) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee.

(g) Failure by the contractor to pay K RIDE any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the Agreement, within 30 days of the service of notice to this effect by Engineer.

(h) The Contract being determined or rescinded under provision of the GCC, the Performance Guarantee shall be forfeited in full and shall be absolutely at the disposal of the K RIDE.

(i) The Performance Bank Guarantee shall be submitted in the Prescribed format as mentioned in Section 4

(j) If any of the certificates regarding eligibility criteria including the affidavit submitted by the tenderer along with tender document are found to be false/forged or incorrect at any time after the award of the contract, it will lead to termination of the contract along with forfeiture of Bid Security and Performance Guarantee besides any other action provided in the contract.

9. INCOME TAX:

Income tax will be deducted at 2% (two percent) and also surcharge if any at source from each bill unless otherwise authorized by the Income- Tax department.

10. GST:

10.1 All the tenderers should ensure that they are GST compliant and their quoted tax structure/rates are as per GST Law.

10.2 The rate quoted by the tenderer should take into account the above taxes/Cess and any other taxes, levies, tolls, fees, octroi, payable to State Government or any other department/local bodies/statutory bodies including the surcharge etc. K-RIDE will not pay any such charges levied upon tenderer and tenderer will only be paid at the rate accepted by the Railway administration under the Contract.

10.3 Tenderer should quote his/their rates taking into consideration the above complete and no claims whatsoever made by the contractor shall be entertained. This clause is an Excepted Matter as per Para 63 of General Conditions of Contract and in case the Contractor resorts to claims and demands arbitration, the same shall be excluded from arbitration at all stages.

11. EXECUTIVE INCHARGE OF WORKS will be indicated at the time of Issue of Letter of Acceptance.

12. CONSIGNEE'S RIGHT OF REJECTION:

12.1 Notwithstanding any approval which the inspecting officer may have given in respect of the stores or any materials or the work or workmanship involved in the performance of the contract (Whether with or without any test carried out by the contractor or the Inspecting officer or under the direction of the

Inspecting officer) and notwithstanding delivery of the stores where so provided to the interim

12.2 consignee, it shall be lawful for the consignee, on behalf of the purchaser, to reject the stores or any part, portion of consignment thereof within a reasonable time after actual delivery thereof to him at the place or destination specified in the contract. If such stores or part, portion of consignment thereof is not in all respects in conformity with the terms and conditions of the contract whether on account of any loss, deterioration or damage before dispatch or delivery or during transit or otherwise whatsoever.

12.3 When any stores delivered to K-RIDE are rejected, this shall be removed by the contractor within 15 days from the date of rejection. Such rejected stores shall lie at the contractor's risk from the date of rejection. If the stores are not removed by the contractor within this period, the purchaser or his nominee shall have the right to dispose of such stores, as deemed fit, at the contractor's risk and account.

12.4 The purchaser shall also be entitled to recover from the contractor, handling and ground rent/demurrage and any other charges for the period the rejected stores are not removed after the aforementioned period.

12.5 Stores that have been dispatched by rail and rejected after arrival at destination may be taken back by the contractor either at the station where they were rejected or at the station where they were dispatched. If the contract is placed for delivery F.O.R. station of dispatch, the contractor shall pay the carriage charges on the rejected consignment at Public Tariff Rates from the station of dispatch to station where they were rejected. If the contractor prefers to take back the goods at the station from which they were dispatched, the goods shall, in addition, be booked back to him, freight to pay at Public Tariff Rates and at owner's risk.

13. INSPECTION AND MAINTENANCE OF SITE:

13.1 The Contractor before tendering shall inspect the site of work, examine the nature of soil to be excavated, nature of work to be executed, checkup the availability of working space and other constraints if any and also acquaint himself of the available access to the site of work and make due provision in the rate for all such contingencies.

13.2 The contractor shall make his own arrangement for site clearance, clearance of debris, jungle, bushes etc., without any extra payment. If any heavier materials like sleepers etc., are to be shifted from the site of work, the same should be carried out by the contractor for which separate payment will be made under relevant items of SOR 2011 (SWR), whichever is applicable. Contractor is also responsible to clear all construction debris, labour camps, surplus materials from site of work without any extra payment as and when these are not required for the progress of the work.

14. SERVICE ROADS:

The K RIDE does not undertake to provide any service roads for the movement of the contractor's vehicles. The contractor can however make

use of the service roads, where they exist free of charge. However, the railway shall not undertake to maintain them and the contractor shall maintain them at his own cost. In other places, the contractor should make his own arrangements for the movement of the vehicles and no extra rate shall be paid for this. The K RIDE reserves the right to make use of the roads formed and maintained by the contractor, as and when necessary, without any payment to the contractor. In the event of the contractor forming the service roads where land is not available or cannot be given by the K RIDE for this purpose, it shall be clearly noted that the contractor shall make his own arrangements for obtaining the required land and K RIDE shall not take any responsibility in this respect and shall not compensate the contractor in any way.

15. WATER AND ELECTRICITY FOR WORKS:

15.1 The contractor shall make his own arrangements within his quoted rates for necessary water and electricity required for the performance of the contract.

16. PROGRAMME OF WORK:

16.1 A tentative programme chart and/ or the list of milestones prepared by the K-RIDE for the contract to achieve the K-RIDE's Milestones needs as indicated above will be attached along with Acceptance Letter. The contractor shall accept and return a copy of the programme chart to K-RIDE within fifteen days of issue of LOA and before commencing of Kick of meeting. The contractor may modify the programme to suit his resources, however, without any change in milestones and submit a modified programme to the K-RIDE duly signed by him within fifteen days of issue of LOA and before commencing of kick off meeting. This is however subject to a condition that such shifting or change shall not affect the completion period of the contract in any manner whatsoever. The modified programme of the contractor shall not be conditional and will not affect the terms and conditions of the contract and if made conditional by the contractor, K-RIDE reserves the right to reject the same and to treat such conditions as breach of contract as agreed to in the contractor's offer and in the LOA issued by the K-RIDE. K-RIDE reserves the right to accept or not the modified programme of the contractor. Contractor shall not have any claim whatsoever in this regard. Further programmes, as per the latest progress of work, will be reviewed and prepared on similar basis from time to time.

16.2 If the confirmation of acceptance of programme as above is not received within fifteen days of issue of LOA, the contractor is liable to pay towards penalty up to Rs.50,000/- for delay in submission of the programme.

16.3 Non-acceptance of K-RIDE Programme or submission of Modified Programme by the contractor which is not acceptable to the K-RIDE, shall also tantamount to breach of contract by the contractor and the K-RIDE shall be entitled to terminate the contract on account of the contractor's default as per General Conditions of Contract, for this lapse alone.

16.4 The K-RIDE reserves the right of determining the contract at any stage of review of the progress under Para 16.1 to 16.3 above, if the above agreed

-programme(s) are not adhered to within the margin of 10% of the provision in the programme in terms of shifting of individual milestones or the quantum of progress at any stage, as envisaged in the General Conditions of Contract and the **Performance Guarantee & Security Deposit** will be forfeited without prejudice to other remedies as contemplated under the Conditions of the Contract.

17. INCENTIVE BONUS PAYMENT FOR EARLY COMPLETION OF WORK: (For cases pertaining to doubling/traffic facility/throughput enhancement work or any other specified work)

17.1 Incentive Bonus is payable for early completion of the work in contracts where specifically provided in the detailed **tender notice uploaded in website.** The incentive bonus payable shall not be more than 1% of the initial contract value or revised contract value whichever is less for every one full month of early completion ahead of the original completion period or revised completion period whichever is less.

17.2 The maximum incentive payable shall not be more than 5% of the original contract value or revised contract value whichever is less.

17.3 This incentive scheme shall not apply if any extension is granted beyond the original completion period or any revised completion period whichever is less, irrespective of any reasons whatsoever including FORCE MAJEURE conditions.

17.4 Period less than a month will not be reckoned for the incentive bonus calculation.

17.5 No relaxation with regard to 'holidays', 'no work days' or ' non availability of line blocks' or non-availability of materials to be supplied either by the contractor, loss of time due to FORCE MAJUEURE situations of any nature will be allowed for this purpose. Date of completion shall be reckoned as per the satisfactory date of completion of the work as certified by the General manager (S&T), who shall decide the same based on the inspection notes of the Commissioner of Railway Safety authorizing opening of the section or joint inspection notes between Open Line and Construction departments or based on his own personnel assessment duly recorded.

17.6 The decision of the GM shall be final and binding on the contractor. No representation from the contractor in regard to early completion of work shall be entertained from the contractor.

18. IMPOSITION OF FINE FOR DELAY OF WORKS:

18.1 In the event of the contractor not adhering to the agreed programme of work and / or not achieving the milestones or quality of work etc., specified, even if no physical or actual damages have occurred to the K-RIDE and even if the currency of the work is not affected, the K-RIDE reserves the rights of, with a view to improve, expedite and the make the contractor realise the effects of delays, levying fine or any value as deemed fit on the contractor by the Engineer – in – charge based on the merit of the case. The amount of fine will be solely decided by the Engineer – in – Charge at his discretion and will be

based on his assessment of disturbances, difficulties or losses caused by the delay or poor quality of work, etc., including that of the reputation of the K-RIDE. The contractor shall have no claims what-so-ever in this regard. Subsequent to the imposition of the fine, if contractor makes good, the progress / quality and achieves the milestones to the satisfaction of the K-RIDE, part or full amount of the fine imposed may be waived and the amount so worked out will be released to the contractor at the sole discretion of the Engineer –in – charge duly recording necessary certification to the effect that no damages have occurred. However, in case of actual or anticipated damages occurred or occurring to the K-RIDE, the recovery of agreed / liquidated damages will also be imposed and recovered from contractors dues as per provisions in GCC in addition to the above fine.

19. SETTING OUT WORKS:

The Contractor shall be responsible to keep at site his own modern equipment for the true and proper setting out of the works for correctness of the position, levels, dimensions and alignment of all parts of the work and for provision of all necessary pegs, reference pillars etc., If, at any time, during the progress of work, any error shall appear or arise in the position of levels, dimensions or alignments at any part of the works, the Contractor, on being required to do so by the Engineer-in-charge, shall at his own expenses rectify such errors to the satisfaction of the Engineer-in-charge.

20. ENGAGEMENT OF TECHNICAL STAFF BY THE CONTRACTOR:

20.1 The contractor shall employ proper managerial and technical personnel during the execution of this work and the personnel deployed shall have adequate experience and thorough knowledge of the works executed including the specifications and proceedings involved. The list of technical staff along with the copy of their bio-data and Degree/ Diploma certificate proposed to be engaged by the contractor shall be submitted to the Engineer-in-charge within 15 days from the date of issue of LOA and the approval of Engineer is to be obtained for engaging them for this specified work. The period of deployment of technical staff covers from 15 days after the date of issue of letter of acceptance till completed works are handed over to the K-RIDE

20.2 **Scale or Personnel**

20.2.1 One qualified graduate engineer, when cost of work to be executed is Rs. 200 Lakhs and above and One qualified Diploma holder engineer when cost of work to executed is more than Rs.25 Lakhs but less than Rs. 200 Lakhs.

20.2.2 Electrical/ Electronic Diploma holders can also be engaged in lieu of graduate Electrical/ Electronics Engineers at two Diploma holders for each graduate engineer.

20.2.3 Technical Staff stated above should be available at site to supervise the work continuously and to take instructions from Engineer-in-charge. Record

of engagement of technical personnel shall be maintained by the contractor at each site, where his Engineers are deployed. This record will be verified by the Sr.DGM/S&T of the project or any other K-RIDE representative.

20.2.4 Even if the value of agreement changes due to variations or even if the currency of contract is changed, the scale of personnel will remain same as per the original agreement value. The decision of the Engineer-in-charge as to the period for which the required technical staff was employed by the Contractor on this account shall be final and binding on the contractor.

20.2.5 Record of engagement of technical personnel shall be maintained by the contractor at each site where his Engineers are deployed. This record will be verified by the Sr.DGM/S&T of the project or any other K-RIDE representative. In case of non-availability on any single occasion at site, it will be treated as absence for a week.

20.2.6 Further in case the contractor fails to employ the Qualified Engineer, as aforesaid in Para above, he shall be liable to pay an amount of Rs. 2,000/- and Rs.1000/- for per day or part thereof for the default period for the provisions Graduate Engineer and Diploma Engineer respectively. The amount will be recovered from the bills.

20.2.7 While passing each “on” account bill, the Sr.Manager/AM (S&T) in-charge will certify the availability of technical staff as above, otherwise the recovery as above shall be made from every bill.

21 PRECAUTIONS AT WORK SITE:

21.1 All precautions to ensure safety of workmen must be taken while unloading and loading the materials during execution of work. Traffic rules should be strictly followed and the contractor should indemnify the K-RIDE against any claim due to accidents and unforeseen incidents.

21.2 The contractor must ensure the safety of labourers engaged by him while crossing the track during the course of execution of work and the K-RIDE will not be responsible for any injury sustained by the labourer or for any fatal accident. The contractor should bear all the loss and expenditure involved. Wherever necessary he should also provide necessary look out men

21.3 The work should be carried out without any interference to the normal working of the Railway track and structures. The contractor will be held responsible for any loss or damage or injury caused during the course of work to the laborers or to the public/private person or to the Railway/ Public/private property and the contractor should bear all the loss and expenditure involved.

21.4 Wherever work is to be executed close to any running railway lines or roads or buildings or public passage, the Contractor shall ensure proper protection of public, railway/public property. He shall also ensure all special precautions as provided in this tender.

22 License, Permission Etc:

22.1 The contractor shall arrange to obtain permission direct from the State Government or local authorities concerned for using Forest, PWD roads.

The rates tendered shall be inclusive of any cess, tax or any other charges payable to the authorities concerned.

22.2 The contractor shall make his own arrangements for obtaining the license for any explosives, as may be necessary, for procurement, transportation, storage and use of the same. All possible assistance will be given by the K-RIDE, should there be any difficulties in obtaining the license etc. However, any failure shall not form the basis for any claim by the contractor against the K-RIDE or for additional payment for the work.

22.3 In case of use of explosives for blasting the contractor shall strictly abide by the Indian Explosive Act, the Rules and Regulations framed there under in carrying out the work, shall observe all the provisions of the Indian Mine Act and the metaliferous mines regulations and rules there under as well as any other Act and Rules, as may be enacted and laid down by the State and Central Government from time to time, for such work.

22.4 The contractor will be held responsible for any loss/damage/injury caused during explosion to the labourers or to the public/ private persons or to K-RIDE/Railway/Public/Private property and the contractor should bear all the loss/expenditure thereby involved.

22.5 The contractor shall take special precaution while carrying out works at location where there is likelihood of any underground cables/OFC etc. and the work shall not be carried out without the presence of an authorized K-RIDE representative/ staff deputed to supervise the work.

22.6 Before taking up any digging work, it is the responsibility of the contractor to get cable layout plan from Engineer-in-charge of the work and arrange to demarcate the same at the site.

23. CONTRACTOR'S VEHICLES, PLANT & MACHINERY ETC.

23.1 Necessary permit/ interstate permits for the movements of vehicles/ Plant & machinery shall be arranged by the contractor.

23.2 Breakdown to transport vehicles, machinery etc., if any, will be on the contractor's account.

23.3 Accidents, if any, to his vehicles, Plant and Machinery or to persons would be the responsibility of the contractor and the K RIDE will not be responsible for the damage or compensation thereof.

24. USE OF CONTRACTORS VEHICLES, PLANT & MACHINERY ETC., FOR ACCIDENT RESTORATION WORKS:

24.1 The vehicle and equipment of contractors are liable to be drafted by K-RIDE administration in case of accidents/ natural calamities involving human lives for speedy restoration work.

24.2 For payment purpose, this item will be operated as a Non-Schedule (NS) item, duly negotiating rates as per the conditions of contract.

24.3 Contractor/Tenderer shall furnish the details of vehicles/equipments available with them to keep a record of the same.

25. TERMS OF PAYMENT:

25.1 All bills shall be submitted by prime bidder only (to whom contract has been awarded) to the authority mentioned in Preamble.

25.2 Subject to any deductions or recovery which the K RIDE may be entitled to make under contract, the Contractor will be entitled to be paid from time to time by way of 'on account payment' for supply of goods and 'progress payment' for works as in the opinion of the Engineer he has executed in terms of Contract.

25.3 ON ACCOUNT PAYMENT FOR SUPPLY ITEMS:

25.3.1 "On Account Payment" for supply of equipment, materials will be made on receipt of equipment/ materials, as indicated in Schedule A, B, C, D,H,J,K L, N & P by K-RIDE. On Account payments made will subsequently be adjusted against payments due on Provisional Acceptance or Final Acceptance.

25.3.2 **90% (Ninety Percent)** of the value of each consignment shall be paid on receipt of materials at K-RIDE nominated site duly accepted by the Purchaser's Engineer and on production of the following documents:

i) Acknowledgement of receipt of materials by Engineer.

ii) Original Inspection certificates issued by Inspecting Officer.

iii) Manufacturer's inspection certificate that the materials are in accordance with
the specifications of the contract.

iv) Challan/ Invoice in duplicate.

v) Bank Guarantee in the approved form (see Section 8).

25.3.3 **10% (Ten percent)** value of the supply items shall be paid after the successful completion of installation, testing & commissioning of whole system covering all materials and services as per schedule of works and issue of "Provisional Acceptance Certificate" by Engineer.

25.3.4 **100% payment** against Supply of Spares, Measuring Instruments, Tool Kits, and if any similar items, which is not part of installation and commissioning, will be made on receipt of materials, acceptance of the same and production of documents listed in Para 25.3.2 above.

25.4 PROGRESS PAYMENT FOR EXECUTION ITEMS:

25.4.1 Progress payment shall be made separately for each pure execution item/ sub-item of work given in the schedule A, B, C, D, H, J, K, L, N & P as follows.

25.4.2 **75% (Seventy five percen**t) of the progress payment for the items in schedule of work for trenching and protective works and cable laying activities shall be made. The balance **15% (Fifteen percent)** of the progress payment for these items shall be made after terminations and end to end testing from relay room to function end are completed and jointly tested by the Engineer to his satisfaction.

25.4.3 For all other items of work (schedule A, B, C, D, H, J, K,L,N & P), progress payment for **90% (ninety percent)** value of the work/ services will be made after the works are completed to full satisfaction of K RIDE.

25.4.4 **10%** value of the works/ services completed shall be made after the issue of Provisional Acceptance Certificate and submission of all 'As made' documents of the relevant schedules.

25.5 **ON ACCOUNT PAYMENT FOR SUPPLY AND INSTALLATION ITEMS:**

25.5.1 'On Account' payments in respect of items involving supply and installation, 75% of the accepted rate of the schedule item will be paid on complete supply of the equipment listed in the schedule after due inspection, against production of indemnity bond and other formalities as applicable to other supply items in the schedule. The remaining 15% payment will be released only after successful installation of the equipment under the schedule. The balance 10% will be released on submission of all 'As made' documents of the relevant schedule.

25.6 **FINAL PAYMENT:**

On the basis of provisional acceptance certificate issued by the Engineer for all the works in all the sections covered in this contract, the final bill for the balance payment for each item/sub-item of work shall be submitted by the Contractor along with a clear "NO CLAIM CERTIFICATE'. The provisional acceptance certificate shall be issued by the Engineer only when he has accepted the work wholly after conducting the acceptance tests on each item of work.

25.7 **FINAL SETTLEMENT:**

On expiry of the warranty period and issue of certificate by Engineer-in-charge regarding satisfactory completion of work and final acceptance of the entire installations in all respect, **Security Deposit** will be released to the Contractor after adjustment of any dues payable by the contractor.

26. CERTIFICATE FOR MODVAT BENEFITS ON BILLS:

26.1 The Contractor should submit the following certificate along with the bills:

"We certify that no additional duty set off on the Goods issued by us have accrued under the MODVAT Scheme in force on the date of supply after we submitted our quotations and submitted the present bill."

26.1.1 In the event of MODVAT credit being extended by the Government of India to more items that already covered, the firm should advise the purchaser about the additional benefits accrued through a letter containing the following certificate or any variation thereof as may be considered necessary by individual Railway administration :

"We hereby declare that we can avail additional duty set offs as per latest MODVAT scheme in force now and we hereby give a reduction of _____ per unit and agree to revise the prices indicated in the order. The current B.S. of _____ is payable on this reduced price. Therefore, we request you to amend the order accordingly."

27. DEDUCTION FROM ON ACCOUNT PAYMENT BILLS

27.1 All costs, damages or expenses, which K-RIDE may have paid or incurred, which under the provisions of contract are Contractor's obligations, will be deducted by K-RIDE from progress payment bills/invoice of Contractor, as and when it is understood that such an expenses have been incurred or paid for.

27.2 All such claims of K-RIDE shall, however, be duly supported by appropriate and certified vouchers, receipts or explanations as are available to enable the Contractor to identify such claims.

PART -(I)
TECHNICAL SPECIFICATIONS (GENERAL)

1. GENERAL:

The Outdoor works include supply and execution of items as well as work in the relay/equipment room and in the field. It will be the responsibility of the Tenderer to commission the complete interlocking with outside gears i.e., points, signals and other field signalling equipment, installation, testing and commissioning of system including transportation of all the equipment to site of installation. Testing and commissioning will be done in association with K-RIDE Engineer and staff. The work shall be carried out according to the drawings approved by the K-RIDE and shall conform to the provision of Signal Engineering Manual and schedule of dimensions. The contractor shall be solely responsible for the proper execution of the work as per specification. Description of Outdoor work is given in the respective item of Schedule of work, however, Broad guidelines for various activities in connection with outdoor works are as follows. In case of any conflict with the description in Schedule of Work and these guidelines, the details in the Schedule of work shall prevail.

2. CABLE LAYING:

Guidelines on the Cable Laying (Document No. RDSO/SI/G/2010, Version 1.1 or latest) issued by RDSO dated 04.02.2014, which shall be followed while laying the signaling, power, Telecomm and OFC in the station section and block section.

1) All main cable shall be laid in RCC duct/ Split RCC pipes/Poly olefin ducts.
2) Tail cable shall be laid through DWC/HDPE/RCC split pipes of suitable sizes with non-flame and anti-rodent properties, proper coupling and cable be laid at depth not less than 1000mm from ground level.

Telephone : 2451200 Extn. 42666
: 2465761
Tele Fax : 91-0522-2452332
E-mail : dsig8rdso@gmail.com
Mob. : 9794863313

Director/Signal
Room No. 205, 2nd Floor, Annexe-I Building,
Government of India - Ministry of Railways
Research Designs & Standards Organisation
LUCKNOW - 226011

Letter No: STS/Cable-Laying Practices Vol.- IV

Date: 09/05/18

मुख्य संकेत एवं दूरसंचार अभियन्ता,	Chief Signal & Telecom Engineer,
मध्य रेलवे, मुम्बई सी.एस.टी.– 400001	Central Rly, Mumbai CST- 400 001
पश्चिम रेलवे, चर्च गेट, मुम्बई – 400020	Western Rly, Churchgate, Mumbai – 400 020
पूर्व रेलवे, फेयरली प्लेस, कोलकाता – 001	Eastern Rly, Fairlie Place, Kolkata – 700 001
दक्षिण पूर्व रेलवे, गार्डन रीच, कोलकाता – 43	South Eastern Rly., Garden Reach, Kolkata - 43
उत्तर रेलवे, बड़ौदा हाउस, नई दिल्ली – 01	Northern Rly., Baroda House, New Delhi- 01
पूर्वोत्तर रेलवे, गोरखपुर – 273012	Northeastern Rly., Gorakhpur - 273 012
पूर्वोत्तर सीमान्त रेलवे, मालीगांव, गुवाहाटी 11	North Frontier Rly., Maligaon, Guwahati- 011
दक्षिण रेलवे, पार्क टाउन, चेन्नई – 600 003	Southern Rly., Park Town, Chennai -600 003
दक्षिण मध्य रेलवे, सिकन्द्राबाद –500 371	South Central Rly, Rail Nilayam, Secunderabad-71
पूर्व मध्य रेलवे, हाजीपुर पु 841 101	East Central Railway, Hazipur - 841 101
उत्तर पश्चिम रेलवे, जयपुर–300206	North Western Railway, Jaipur-300206
पूर्व तटीय रेलवे, ग्राउन्ड तल, उत्तरी ब्लाक, समन्त विहार, भुवनेश्वर–17	East Coast Railway, Rail Vihar, Ground floor, North Block, Samant Vihar, Bhubneshwar -17
उत्तर मध्य रेलवे, गंगा काम्पलेक्स, सूबेदारगंज, इलाहाबाद।	North Central Railway, Ganga Complex, Subedarganj, Allahabad.
दक्षिण पश्चिम रेलवे, क्लब रोड, केशवपुर, हुबली– 580023	South Western Railway, Club Road, Keshavpur, Hubli - 23
पश्चिम मध्य रेलवे, जबलपुर पु 482 001	West Central Railway, II floor, DRM Office, Jabalpur – 01
दक्षिण पूर्व मध्य रेलवे, आर0ई0 ऑफिस काम्पलेक्स, बिलासपुर– 495004	South East Central Railway, R. E. Office Complex, Bilaspur-495004
मैट्रो रेलवे,33/1, जवाहर लाल नेहरू रोड, कोलकाता–71	Metro Railway, 33/1, Jawaharlal Nehru Road, Kolkata –71
कोर , नवाब युसुफ रोड सिविल लाइन्स इलाहाबाद –01	CORE, Nawab Yusuf Road, Civil Lines, Allahabad- 01

Sub: Plastic Cable Ducts / Tray.

Ref: This office letter No. STS/Cable-Laying Practices Vol.- IV Dated 09.11.17 in reference to Railway Board's Letter no. 2006, 2012, 2014 and 2014/Sig/SGF/3(CABLE) dated 09/08/12, 13/05/14, 10/07/14 and 29/08/16.

***

In continuation of above as referred, Railway board was enclosed technical and other details of plastic ducts/tray .These cable ducts being developed for laying of all types of cables e.g. Signalling, Telecommunication and Power etc.

Railway Board had further informed vide above referred letter that these cable ducts may be very useful for application in suburban sections where cable trenching and digging is a severe problem due to space constraints, proximity of other cables and utilities, traction bonds and cables etc.

To comply above mentioned Railway Board letters, all the railways are once again advised to send their performance feedback/Remarks, specification being followed with testing details, installation practices etc.to RDSO.

RDSO has already issued guidelines vide RDSO/SI/G/2010 version 1.1 dated 04/02/2014 as a policy for laying of signalling cable. To ensure quality of plastic cables duct/tray, technical specification and testing procedures as attached with above referred Railway board letter is summarized and enclosed herewith for comments on the performance.

9.5.18
(A.K.Singh)
Director/Signal-VIII
for Director General /Signal

DA : As above enclosed by Railway Board as Annexure- I

RDSO - Ref No: STS/Cable-Laying Practices Vol- IV/ Dated: 09/05/2018

Annexure- I

I. **Technical Specification of – Injection Moulded – Plastic Cable Duct / Trays**

1. Basic/ Minimum Technical specifications /Testing procedures & Check list

Properties	Type – I (2434)	Type- II (1020)
Width (Internal / External)	240mm/340mm	100mm/200mm
Height (Internal / External)	155mm/ 230mm	155mm/230mm
Weights per Mt/ PC (Including Bottom and top cover)	8.00 kg (Minimum)	5.00 kg(Minimum)
Length per pc / per mtr -	1000mm (appx)	
Material	Polyolefin / polymers/Engineering plastics	
Fire Behavior	Fire Protection Class K 1 in accordance and referenced with DIN 53438 part-2	
Breaking Load (Minimum)	≥ 12 KN,at room Temperature, over the specified surface area of: 250mm x 150mm for Type I (2434) 250mm x 75mm for Type II (1020)	
Thermal Characteristics (Type Test– Frequency 6 months)	Thermal stability from -10 degree to + 70 degree As per IS 9000- part- 2 & part- 3 :1977	
Electrical Characteristics (Type Test– Frequency 6 months)	Dielectric Strength: 48 kV (Min breakdown voltage) as per IEC-60243-1-2013	
Tolerance in Dimensions	(+/-) 10mm	

2. The cable ducts should be horizontally attachable to each other with male/female swallow tail connections with suitable detachable/ push fit cover.

3. Required accessories/ earth pins etc. for fixing of cable ducts should be supplied, if required at the time of installation.

4. The cable duct should have predetermined breaking points/ perforated opening/ outlet on the sides for taking cables inside/outside the duct.

II. **Tests Procedures:**

1. Load Bearing Capacity (at Room temperature of 27°C):

1.1 Sample - Complete cable channel with cover.

1.2 Conditioning for room temperature test - 27°C ± 2°C for 2 hours.

1.3 Sampling size of each test = Complete cable channel with cover.

1

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1.4 Test Procedure:-

1.4.1 The test specimen to be tested should be in locked position and to be kept on the surface in such a way that bottom surface of the box will get total support. The force shall be applied in the Centre of the cover. A rubber or wooden pad should be introduced in between the plate and box to avoid direct rupture due to sharp edges of the plate. The load test equipment should have at least load capacity of 12 KN.

1.4.2 The force measurement should be carried out with a load cell with an accuracy of 1N. Using hydraulic test cylinder, the force should be continually increased.

1.4.3 This load to be increased up to the 12 KN. Then the test may be discontinued once the sample survives the minimum breaking load criteria.

1.4.4 Size of steel plate shall be as under:
Type 1 (2434)- 250mm x 150 mm
Type 2 (1020)- 250mm x 75 mm

1.5 Acceptance criteria: Breaking load $\geq$12KN

2. Determination of Burning Behaviour (Edge combustion):

2.1 Sample - 190mm X 90mm (to be cut from the cable tray).

2.2 Sampling – One sample should be tested.

2.3 The Test Apparatus for this test shall comply the standard DIN: 53438 Part-2.

2.4 Test Procedure:-

2.4.1 A specimen of 190mm X 90mm should be mounted in a vertical position.

2.4.2 A measuring mark is to be made at a distance of 150mm from the bottom edge.

2.4.3 The height of flame is to be adjusted to 20mm.

2.4.4 The angle of burner should be inclined to 45° to the surface of the test specimen.

2.4.5 The flame is to be applied to the edge of sample for 15 second.

2.5 Acceptance Criteria:-

2.5.1 The test shall satisfy the requirements of classification K1. (Classification K1: If the tip of the flame of the burning specimen does not reach the measuring mark or if the flame has extinguished.)

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III. **Check lists for Testing of The cable Ducts:**

1. Size of Sample: For Acceptance Test- As per standard sampling from lot and for Type Test - One sample.

2. Following Acceptance Tests & Type Test shall be conducted.

SN	Tests Parameters	Requirements	Observations	Remarks
	Acceptance Tests			
2.1	Visual	No sharp edges, burrs, or surface projection which is likely to damage conductor or cable.	No sharp edges, burrs or surface projection should be found.	
2.2	Dimensions / Min. weights per mtr/pc (cover and bottom) Length- 1000mm both the types Tolerances +/- 10mm	For Type – I (2434) Width = 240mm (int.) / 340mm (ext.) Height = 155mm (int.)/ 230mm (ext.) Weight : 8.00Kg (min) per meter For type – II (1020) Width = Int. -100mm / Ext -200mm Height = Int.-155mm / Ext.-230mm Weight : Per Mtr 5.00 Kg (min)	Dimensions should be within limit.	
2.3	Load bearing capacity at room temperature	Conditioning for room temperature test = $27^0C \pm 2^0C$ for 2 hours Min. breaking load $\geq$ 12 KN	No crack or failure of the cable channel should observed	
2.4	Burning Behavior	The test shall satisfy the requirements of class - K1/ with DIN 53438 part-2.	It should confirm to Fire Protection Class K -1	
2.5	Outlet for taking cables inside/outside of duct.	Cable Ducts/ Tray should have predetermined breaking points/ perforated opening / outlet on the sides for taking cables inside/outside.	Plastic cable duct should confirm the requirement.	
	Type Tests			
2.6	Thermal Characteristics	Thermal stability from -10 degree Celsius to + 70 degree Celsius as per IS 9000- part- 2 & part- 3 :1977	Test reports shall be submitted from approved laboratory.	
2.7	Electrical Characteristics	Dielectric Strength: 48 kV (Min breakdown voltage) as per IEC-60243-1-2013.	Test reports shall be submitted from approved laboratory.	

3. FOUNDATION & ERECTION OF APPARATUS CASES:

3.1 The work consists of pit excavation, casting foundation with bolts of adequate size having cement concrete of ratio 1:3:6 as per:-

(i). Drg. No. SG/CN/02/6 (Apparatus case full size)

(ii). Drg. No. SG/CN/02/7 (Apparatus case Half/ Quarter sizes)

The location of apparatus case will be indicated by KRIDE/Railways.

3.2 Two `E" types locks on the doors of full size apparatus case and one `E" type lock on the front door for half size apparatus cases shall be firmly fixed and tested with `E" type key . Locking and unlocking shall be smooth with least force. Suitable fixing arrangements for `E" type lock on the door of apparatus case shall be fabricated by the contractor, if such arrangements does not exist. One hard wood shelf plank 37mm thick, planed and varnished shall be firmly fixed for all types apparatus cases/ battery boxes. Also latching arrangement for the back door shall be provided, if required.

3.3 All the apparatus cases (Full/Half/Quarter) are to be painted with Aluminum paint on the outsides surface and the location numbers are to be painted in 'Bold' letters. Inside of location box shall be painted with white/Aluminum enamel paint.

3.4 CABLE TERMINATION BOX FOR CABLE THROUGHING, POINT MACHINE:

3.4.1 Excavating earth and casting concreted foundation as per Drg. No. SG/CN/02/8 and C.T. boxes are to be erected on Rails/L-angles vertically by using suitable size of bolts and nuts. The cables shall be taken through 2 Nos. of G.I. Pipes of size 32mm inner dia and 300mm length fixed at the bottom of the CTB with suitable fixing arrangements. It shall be ensured that there should be no break in the cable core during the process of taking the cables through pipes.

3.4.2 In case of CTB for Point machine, one no. of GI pipe 150mm long shall be fixed at the side of the CTB for drawal of jumper wires from point machines/lever locks with proper fixing arrangements. The CTB should be provided with EWS lock.

3.4.3 CT Box shall be painted with Aluminum paint and rails/L-angles with black paint. The circuit particulars shall be painted neatly on the CT Box cover and the location number have to be painted in „BOLD" letter.

3.5 SHIFTING OF APPARATUS CASES/ CT BOXES:

The work consists of excavation of pit around the existing apparatus cases full/ half size and CT boxes, shifting of the location box along with foundation clear of infringement from the track. The pit shall be excavated with maximum care to avoid any possibility of damage to the existing cables.

The location box shall then be shifted carefully along with the foundation and cable termination, equipment etc., without disturbing the wiring. While shifting apparatus cases of full size, the brick wall covering the cables shall be broken before shifting the location box. After the location box is shifted, brick masonry walls shall be constructed on the front and back sides of the location box foundation. River/M-sand sand shall be filled up to the floor of the location and the bottom shall be sealed with sealing compound.

3.6 CABLE TERMINATION IN APPARATUS CASES/CTB's:

3.6.1 At each apparatus case/CTB, the work consists of fixing all cables, fixing of Phynolic synthetic industrial fiber base fine weave cotton fiber sheet - 6mm thick to IS specification 2036 - 1995 - Type board along with terminal blocks and termination of cables/cores (conductors) using PVC/ Nylon sleeves as per details of termination in approved location diagrams. The contractor shall prepare cable termination and wiring details of apparatus cases and C.T. boxes and obtain the approval of the K-RIDE/ Railway Engineer before execution as per the approved cable plan.

3.6.2 The underground signaling cable-main, tail and power shall be properly secured by wooden clamps of 50mm x 50mm teak wood inside apparatus case on 25mm x 100mm base plank. The cables shall be neatly skinned duly mending and taping of cable ends for termination bunched and terminated on the terminal board at the required place in order as per approved apparatus case circuit diagram. All the aluminum power cables of size 10 Sq.mm and above shall be provided with Aluminum lugs using crimping tool of appropriate size.

3.6.3 K-Ride/ Railway will indicate approximate total number of cable core, terminations to be made in the apparatus cases/cable termination boxes. The contractor shall fix Phynolic synthetic industrial fiber base fine weave cotton fiber sheet - 6mm thick to IS specification 2036 - 1995 - Type F5 sheet as required by Railway. Terminal blocks with links, fuse blocks with fuse shall be fixed on the terminal board pertaining to each apparatus case and cable termination box using proper size of wood screws. Two suitable holes shall be made on either side of terminal block and fuse block for bringing cable for termination. Termination of main cables, tail cables, power cables, core/cores shall be made at the proper terminal as per approved wiring diagram pertaining to each apparatus case and C.T. Boxes. Before final termination, each cable shall be tested for continuity, insulation etc. and readings recorded and jointly tested and signed.

3.6.4 As per site conditions, the termination of new cables may be required on the existing terminal blocks or by fixing new terminal/fuse blocks in old apparatus cases which shall be done as per approved circuit diagram wherever required. The terminal particulars are to be re-painted or corrected on the doors of apparatus cases as instructed by K-RIDE. Suitable clamping arrangements have to be made for the new cables and also the bottom the opening of the apparatus cases shall be closed with masonry brick work and sealed with cable compound.

3.6.5 After fixing all the signaling cables inside the apparatus case, the side opening shall be closed with masonry work and plastered. The inner side is filled with Sand and finally the bottom is sealed with sealing compound.

3.6.6 All the underground cables shall be provided with punched name plates showing total no. of cores, cross section of each core, Aluminum or copper conductor and from and to details etc. and also painted inside each apparatus case.

3.7 WIRING OF SIGNALS/ LC GATE CONTROL/ TRACK CIRCUIT/ POINT CONTROL RELAYS IN LOCATIONS:

3.7.1 Relays, transformers, heavy duty contact relays and other gadgets controlling the above functions shall be firmly fixed on suitable relay frames using MS Angles of size 25mmx25mmx6mm and MS Flats of size 25mmx6mm inside respective apparatus cases. The MS relay frame shall be painted before fixing. Hylum sheet of 25mm thick of requisite size shall be fixed inside the apparatus case for fixing Resistance and Electrolytic condensers. In case of shelf type relays, the relays shall be mounted on shelf planks with suitable anti- tilting arrangement. If plug in type relays are used, 16/0.2mm flexible copper wire shall be used for wiring. For shelf type relay and point motor circuit, 3/0.75mm copper wire shall be used. There shall be no joint in the wire. For soldering the wire to relay clips of Plug-in-type relays in relay racks, best quality rosin core solder and temperature controlled soldering irons shall be used. The complete wiring shall be tested jointly and linked to tail cable.

3.7.2 The description of all relays, fixed in each apparatus case shall be painted inside apparatus case doors. PVC/ Nylon sleeves shall be provided on each wire before termination on terminal block. The name of the circuit and wire where connected shall also painted on the sleeves.

3.7.3 Wire should be soldered to relay clips and suitable copper eyelets crimped with crimping tools shall be adopted before the termination. The wiring and termination shall be carried out as per the approved circuit diagram. The relays details shall be painted. PVC/Nylon sleeves shall be provided for each wire before termination and the details of circuit and where the wires connected etc., shall be painted on the sleeves. The complete wiring shall be tested.

3.8 ALTERATIONS TO PAINTING PARTICULARS AT LOCATION BOXES:

Consequent to introduction of new circuits or alterations to existing circuits in apparatus cases/ CTB"s, new nomenclature should be painted on the cable sleeve. And also the new particulars should be painted on the inner side of the doors at apparatus cases/ CTB"s.

3.9 FILLING OF EARTH AROUND LOCATIONS:

The work consists of filling of earth around the foundations of signals and apparatus cases for a width of 0.5m on all sides from 150mm below the foundation top to ground level. The earth shall be consolidated after filling.

4. MAIN SIGNALS:

4.1 CASTING OF COLOUR LIGHT SIGNAL FOUNDATION:

4.1.1 The work includes excavation of pit and casting of color light signal foundations with M.S foundation bolts as per Drg. No. SG/CN/02/9. The position of signals will be indicated by K-RIDE.

4.1.2 The Signal should be casted using Hylum sheet/ Waterproof Plywood/ MS sheet Form work to ensure smooth exterior finish and avoid the additional plastering. Necessary earth work, shall be made around the signal foundation and sufficient earth work shall be made up to the required level in the normal terrain and the

cable entries shall be closed as per the instructions of K-Ride/ Railway Representative at Site.

4.2 ERECTION AND WIRING OF SIGNALS:

4.2.1 Signal pole shall be securely fixed to surface base and erected on signal foundation and plumbed. The gap between the signal pole and surface base shall be filled with suitable putty to avoid tilting. Soon after installation, the pole shall be painted with two coats of Aluminum paint/
Yellow & Black strips of Enamel paint for second distant signal after a coat of primer. Signal unit shall be provided with two coats of black enamel paint.

4.2.2 Multi-unit color light signals up to 4 aspects shall be properly mounted on the top of signal pole where there is no route indicator. If required, LED type signal aspect shall be fixed for signals. If there is route indicator a large off set bracket shall be fixed firmly with 2 nos. of `U' bolts 3/4" thick on the signal pole for mounting multi-unit color light signals. One 22mm through hole shall be drilled on signal pole just below the off-set bracket and a 20mm through bolt shall be the provided to prevent offset bracket from sliding down.

4.2.3 Signal ladders with platform complete fittings, cast iron shoe and adequate number of support to suit signal pole 3.6/4.6m, shall be firmly fixed clear of infringement with suitable bolts and nuts and painted in black. The ladder shoes shall be concreted. This work also includes fixing of marker boards, enameled number plates with suitable clamps at the required place. Speed board if any, shall be fixed on the pole with proper clamp clear of infringement as required by K-RIDE.

4.2.4 Signal tail cable shall be taken through the signal pole without damaging insulation and armor, skinned and terminated on signal units. If the signal units are mounted on large offset brackets a vertical slotted hole of 50mmx50mm in size shall be made on signal pole for taking signal tail cable. Suitable protection shall be provided on the slotted hole to avoid damage to insulation of cable.

4.2.5 This work includes fixing of LED Unit along with Current Regulator. Wiring to be done according to approved circuit diagram. The unwanted aspects shall be blanked using MS sheets of 3mm thick.

4.2.6 All the multi-unit color light signals shall be wired with 3/0.75mm copper wire and terminated. For each aspect 2 separate wires shall be used from the terminals and the wiring shall be tested jointly.

4.3 BLANKING ARRANGEMENTS FOR SIGNALS:

In case of signals with a horizontal clearance between 2.21m and 2.36m (in B.G) from the nearest track centre, blanking arrangement shall be provided. If a Ladder of signal erected at a distance with in 2360 mm from C/L of adjacent track then it should be blanked off (strap around by a sheet around ladder) to a height of 300mm between 2060mm and 2360mm above rail level using MS plate not less than 8mm thick. The end portions of the plates should be folded and made smooth so that it will not harm the person climbing the ladder. This plate shall be painted with black.

4.4 All signals shall be properly earthed in RE area.

4.5 Necessary wooden cross shall be fixed on the newly erected signals before being brought into use.

4.6 **ROUTE INDICATORS**:

4.6.1 All types of Route Indicators shall be mounted on the top of signal pole firmly. The tail cables for route indicators shall be taken through signal pole without any damage to the insulation and armor, skinned and terminated on route indicators. Route indicators shall be wired with Wire PVC 3/0.75mm copper as per the approved circuit diagram. Hoods shall be fixed properly and examined during day time and if required extension of hoods shall be made to have proper visibility. The route indicators shall be painted as required by Railways.

4.6.2 Universal AC/DC LED Numeric Route indicator

4.6.2.1 Universal AC/DC LED Numeric Route indicator should be capable of displaying 1 to 19 route with right & left arms with optical sensing and complete housing for use with LED ECR.

4.6.2.2 The unit should mount at the top of signal post safely and securely. Necessary fixing arrangements shall be supplied by Contractor.

4.6.2.3 The circuit should be so designed that it draws the required current to ensure the pickup of ECR whenever the digit is lit.

4.6.2.4 RDSO approved Route LED‟s should be used for left and right arms. It should work on 110V +/- 20% AC.

4.6.2.5 Color of LED‟s of white color of reputed make should be used for Numeric Route indicator seven segment display. Fusing of an LED should neither blank the whole segment nor deteriorate the visibility of indication. Uniform intensity over entire operating range Components used in numeric route indicator unit should be industrial grade.

4.7 CALLING - ON SIGNALS/'A' MARKER LIGHTS:

Calling on signals/‟A‟ marker shall be fitted on the signal posts at required height using off-set bracket. Suitable hole shall be drilled on the signal poles to bring the cable/jumper wires. The cable/jumper wires shall be taken to calling on signal/ „A‟ marker through suitable steel hose pipes and wired by using 3/0.75mm copper wire. The calling on signals shall be provided with `C' marker and „A‟ for „A‟ marker. Number plates to be fixed and painted as per the standard practice in this Railways.

4.8 REPLACING THE TAIL CABLES IN SIGNALS:

Wherever necessary the existing tail cables shall be released from the existing signals and new tail cables shall be drawn to the aspects and terminated. The termination particulars shall be painted.

4.9 SHIFTING OF SIGNALS:

Wherever required the existing Colour Light Signals shall be shifted to clear any infringement from the tracks as instructed by K-Ride/ Railway representative at site. The earth surrounding the foundation shall be excavated and the cable coils shall be

loosened very carefully without causing any damage to the cables. The Signal shall be moved along with the foundation slowly to the new position and earthwork shall be done around the foundation. The loosened cables shall be buried at 1m depth.

4.10 REPLACEMENT OF SIGNAL UNITS:

The existing CLS units shall be removed from the signal post duly disconnecting the cables and new signal units (required as per signalling plan) shall be mounted on the existing signal pole. The tail cable is to be terminated and the signal aspect shall be wired by providing LED unit with Current regulator. If there are any blank aspect, the same shall be covered with round MS plate.

4.11 SCREENING ARRANGEMENTS:

For the Colour Light signals in RE area which are coming in the infringing zone, screening arrangement as per standard RE drawing shall be provided as required by Railways. The screen made of MS wire-mesh will be fixed on MS angles of size 25x25x6mm with suitable fixing clamps, bolts and nuts and finally painted with black.

5. SHUNT SIGNALS:

5.1 POSITION LIGHT GROUND TYPE SHUNT SIGNAL:

5.1.1 The work involves excavation of pits and casting of shunt signal foundations as per Drg. No. SG/CN/02/10. The position of shunt signals will be indicated by the K-RIDE. Foundation for shunt signals shall be casted with cement concrete in the ratio 1:3:6 using stone jelly of size 20/25mm. The foundations are to be plastered on all sides. Necessary earthwork shall be made for each position light shunt signals as required by the K-RIDE.

5.1.2 The position light shunt signal shall be properly mounted and plumbed.

5.1.3 The cables are to be taken through the unit, skinned and terminated. The post type/Ground type shunt signals shall be wired and terminated and the wiring shall be tested jointly.

5.1.4 This work includes fixing of number plates and direction Arrow plates. The post shall be painted with Aluminum while the signal unit and surface base with black enamel paint.

5.1.5 The CLS units, Route Indicators, Calling-on signals, position light shunt signals post type and ground type shall be provided with EWS locks.

5.2 POST TYPE SHUNT SIGNAL:

Small off-set bracket shall be firmly fixed with `U' bolts of suitable size on signal pole for mounting Post type shunt signals. One 22mm through hole shall be drilled on signal pole just below the off-set bracket and a 20mm through bolt shall be the provided to prevent offset bracket from sliding down. A vertical slotted hole of 50x50mm in size shall be made on signal pole for taking the signal tail cable. Suitable protection shall be provided on the slotted hole to avoid damage to insulation of cable. The cables are to be taken through the unit, skinned and terminated. The post type/Ground type shunt signals shall be wired and terminated and the wiring shall be tested jointly. This work includes fixing of number plates and direction Arrow plates. The post and signal unit shall be painted with Aluminium and enamel black respectively. One EWS lock shall be provided for the signal.

6. TRACK CIRCUITS:

6.1 INSTALLATION:

6.1.1 The work includes drilling of holes, bonding of rail joints with 8 SWG GI soft solid wire. 7.2mm holes are to be drilled close to Fish Plates on the web of rail and the bond wires are to be fixed by driving channel bond pin tightly. Two bond wires are to be provided for each joint in parallel. One bond wire clip is to be provided for each joint to keep the bond wire intact. In point track circuit, parallel jumpers/ bond wires/cables shall be provided as required by the K-RIDE/Railways with proper supporting arrangements.

6.1.2 Four TLD boxes, two each at track feed end relay end shall be fixed clear of infringement and the respective track circuit tail cables 2 x 2.5 sq.mm PVC copper conductor from the apparatus case shall be terminated in these boxes.

6.1.3 In Point zones, additional TLD boxes shall be provided for series jumpers as per the bonding plan and instruction of K-Ride representative at site. The connection from the TLD boxes to the rail should be through 8 SWG GI soft solid wire which should be taken through PVC sleeve or signalling cable if required and fixed to the rail both at feed and relay ends. The GI Wire should be clipped on to the sleepers to prevent shorting with rails.

6.1.4 Wherever Glued joints are not provided, Rail Joint insulation RDSO type shall be provided with long bolts and nuts at places marked by K-RIDE/Railways. In case of point zone track circuit, necessary insulation shall be provided for switch extension pieces/„D" brackets, throw bar lugs, gauge tie plates, crossing plates, stretcher bars, etc., as per site conditions and fixed by the contractor in the presence of K-Ride representative. Insulating material shall be provided by contractor. Contractor shall use proper MS washers, bolts and nuts for insulating them. All the insulation shall be tested jointly. Wherever the Roding crosses track circuit zone, it shall be provided with rod joint insulation and tested.

6.1.5 Polarity bonding in each point track circuits shall be provided using 8 SWG soft wire, insulated and clipped on to sleeper. Parallel bonding shall be done wherever required. In RE area transverse bonding should be provided at both feed and relay ends by connecting 2GI 8SWG wire across the block joint as per the bonding plan.

6.1.6 Track circuit work includes fixing of track feed and track relay equipment in the apparatus cases as indicated by the Railway. The shelf type track relay shall be provided with suitable anti-tilting arrangement. Track relay details shall be painted on the inner side of the apparatus case door.

6.1.7 Suitable flexible copper wire shall be used for wiring the track relay, track feed equipment, batteries, chokes, etc. and finally terminated at the terminal block. For each track circuit, secondary cell 80 AH shall be charged and installed in the apparatus case. The no. of cells and chokes to be used for each track circuit will be as instructed by the Engineer in charge. The secondary cells shall be charged by the contractor through reputed agencies. The charging of secondary cells shall be done as indicated in following paras below.

6.1.8 All the TLD boxes shall be painted and Track Circuit numbers along with feed end or relay end particulars shall be neatly painted as required by K-RIDE/Railways.

6.2 ALTERATIONS TO TRACK CIRCUIT:

6.2.1 Alterations to the existing track circuits involves by shifting the Feed end equipment/ Relay end equipment/block joints and installing them at a different locations and re-wiring them.

6.2.2 After completing the installation/alteration of track circuit, it shall be energized, tested, adjusted and readings recorded in track test record.

7 POINT MACHINES:

7.1 INSTALLATION OF POINT MACHINES

7.1.1 Electrically operated point machines shall be fitted in level to all facing points as per standard drawing on long sleepers on extended gauge-tie plate, clear of infringement.

7.1.2 The point machine shall be installed after cleaning the machine (both inside and outside) and greasing/oiling of all the moving parts. The point machines

shall be hand operated, detection and motor controlling contact adjusted before taking to site. All unwanted openings shall be covered with MS Sheets.

7.1.3 The point machines shall be fixed with proper size of bolts and nuts and flat/spring washers with correct size of holes on special sleepers to avoid lateral play.

7.1.4 All point connecting rods shall be connected to point machines as per standard layout/drawings without any strain and with minimum offset. All connecting rods shall be in level and correct size of pins shall be used to avoid longitudinal play. Any changes in the connecting Roding during installation which necessitates welding and off sets shall be carried out by the contractor at site. The welding shall be by smithy process. Lengthy roddings shall be supported suitably.

7.1.5 Suitable eyelet shall be used for termination of power cables using Crimping tool. The jumper wires from the point machines to the CT boxes shall be taken through flexible conduit PVC pipes and securely fixed with suitable clips. The wiring inside the point machine for motor and detector circuit shall be tested for insulation and earth and the connections tightened. 7/1.4mm 3/0.75mm PVC copper wire shall be used for wiring point machines. PVC/Nylon sleeves shall be used for identification of cable cores/jumper wires and marked with paint. Necessary grooves/wards shall be cut on the point machine at the place of insertion of crank handle, for crank handle interlocking purpose.

7.2 ADJUSTMENT AND TESTING OF POINT MACHINES:

7.2.1 The point machines shall be worked by hand crank and the housing of switch rail with the stock rail shall be checked. All the electrical wiring shall be carried out neatly.

7.2.2 The point machines shall be worked both ways with proper feed. It should work without undue friction and working current shall be recorded.

7.2.3 The point stretcher bar and lock connections should be adjusted in such a way that with a 5mm thick obstruction piece placed between the switch and stock rail at 150mm from the toe of switch,

(a) The point does not get locked.

(b) The point detection circuit is not completed

(c) The friction clutch disengages.

(d) The tripping current does not exceed 200% of normal working current.

7.2.4 The point machine shall be provided with EWS locks/pipe locks.

7.2.5 Necessary notches shall be cut on the pinion of point machine to suit crank handle configuration in the case of 5E only.

8 CABLE TERMINATION RACK:

8.2 Cable termination racks shall be erected in the relay room at the required location as per the approved Relay room floor plan and shown by the K-RIDE with suitable foundation bolts and cement concreted. The cable termination racks shall be painted soon after installation but before cable termination work is taken up. Suitable cable ducts wherever required shall be provided to bring all outside cables to the termination rack.

8.3 All the cables are to be neatly skinned, fixed on the cable bracket and terminate in order. Bending of cables to less than 120 degree shall be avoided. The cable armors and the rack should be earthed. Internal wiring and termination particulars are to be written with paint. 6 way/1 way terminal blocks are to be fixed on Hylum sheet and held rigidly by mechanical screws.

8.4 TERMINATION OF CABLES:

8.3.1 The PBT terminal and fuse blocks shall be fixed firmly on the cable termination racks and serially numbered with paint for easy identification. Tags shall be provided for each terminals and painted, giving description of the circuit. Suitable rubber grommet shall be provided on the holes of termination racks. Copper tape of width 25mm x 1.5mm shall be used for providing bus bars. Suitable holes shall be drilled in copper tape for this purpose.

8.3.2 All the cables shall be identified by a punched label, tied on to each cable. Printed cable termination index and pasted on Perplex sheet of thickness 10mm as per instructions of site in- charge shall be fixed in the relay room showing the terminal numbers circuit-wise. In case sufficient space is not available for fixing the board in one piece, it may be provided in parts retaining the overall size as per instructions of site in-charge. `As made' terminal particulars shall be prepared in tracing Film duly signed and handed over to the K-Ride at the time of commissioning.

9 RELAY ROOM:

9.1 ERECTION OF RELAY RACK :

9.1.1 Relay rack shall be erected as per the SWR standard practice.

9.1.2 The relay rack shall be painted including Relay nomenclature as per relay disposition chart soon after the installation and before plugging of relays.

9.2 WIRING OF RELAYS(NEW/ ADDITIONAL/ ALTERATION):

9.2.1 Based on the circuit diagram, contact analysis chart shall be prepared by the contractor. The required number of 50 way terminal boards, plug boards and plug in type relays shall be fixed on the new/ existing rack in the nominated places as instructed by K-Ride representative. The configuration of plug boards should be

checked with the contact analysis chart. The nomenclature both on the rear and the front side of the plug board and on front side of the relays in the relay frame shall be painted.

9.2.2 Suitable arrangements shall be made in the relay rack for fixing condenser and resistance unit, required for slow to pick up or slow to release feature. Letter painting shall be made against each unit to identify the circuit for which it is used. Suitable wire supporting Tray made of PVC shall be provided for each row in relay rack to accommodate the complete bunch, wherever the new wiring is carried out.

9.2.3 The wiring shall be carried out as per approved circuit diagram. The wiring shall be done on connectors and terminated on terminal clips by soldering process neatly, using high grade solder and Temperature controlled soldering iron. PVC flexible wire 650V grade 16/0.20mm copper conductor shall be used. Potential free contacts of various relays required to be monitored by the Data logger should also be wired on the tag block of the data logger using distinct colour wire. In case of alteration to existing wiring, the wires and relays not required shall be removed. After completing the alteration work, the new wires have to be bunched neatly and brought to original condition. The relay rack wiring shall be tested initially by the contractor and then jointly with K-Ride Representative. Any addition/alteration to wiring in the course of testing shall be carried out free of cost by the contractor. Different colours of wire shall be used for identify the power supply circuit wiring. In case of alteration, a different colour of wire from the existing one shall be used for easy identification.

9.2.4 Before plugging, the relays shall be checked visually and defective ones noticed shall be replaced duly reporting the same to the K-RIDE/Railways.

9.2.5 The printed Relay Index and pasted on Perpex sheet of thickness 10mm as per instructions of site in-charge shall be fixed in the relay room in the relay room giving the details of the relays and their position in the relay rack. In case of alteration/ additional relay wiring, the relay particulars shall be incorporated in the existing relay index board available in the relay room. If sufficient space is not available for fixing the board in one piece, it may be provided in parts retaining the overall size as per instructions of site incharge.

9.2.6 Rubber mat having sufficient width should be placed in front and rear of all the relay rack and FTOT. The mat should not be less than 6mm thick and it should withstand 650V AC.

9.3 Relay rack to relay rack wiring shall be done with 16/0.2mm PVC copper conductor by soldering process.

9.4 The inter-connection between the relay rack and power room, power room and FTOT, Block Instruments and FTOT shall be carried out with underground, armoured, sheathed, power/ signalling cables of adequate length. The termination shall be carried out using suitable size of copper eyelets/sockets. Inter-connection between power rack and battery room, shall be carried out by using suitable underground cables.

9.5 All the interconnecting wires shall be supported by means of Aluminium ladder. Ladder of suitable capacity shall be manufactured using Aluminium angles of size 50mmx50mmx6mm and Aluminium flats of size 25mmx6mm. The inter spacing between two rods of the ladder shall not be more than 125mm. The corners of the ladders as well as the inner path of the ladders shall be of curved shape and shall not damage the insulation of the inter-connection wire. The bends also shall not be steep. The bottom of the ladders shall be provided with Hylum sheet of 3mm thickness. The ladder shall be fixed firmly with proper Aluminium flats.

9.6 The inter connection arrangement includes laying of signalling cables in ducts, wherever necessary as indicated by K-RIDE/Railways. Wherever cables are taken through cable ducts inside relay room/ battery room etc., the ducts shall be filled with River/ M-Sand sand up to the floor level and covered with RCC slabs covered with suitable tiles.

9.7 All connections/ terminations shall be tested by the contractor and after satisfying himself jointly with K-Ride Representative. Any alterations required shall be carried out by the contractor free of cost.

9.8 Cable details, functions allotted to each core and terminal numbers shall be prepared in standard size tracing film and handed over to K-RIDE.

10 POWER SUPPLY ARRANGEMENT:

10.1 INSTALLATION IN POWER ROOM:

10.2 The contractor shall manufacture a power supply panel using 1200x1200mm Hylum sheet not less than 10mm thick for mounting meters, switches/fuses, etc. as required by K-RIDE/Railways. It shall be installed on a frame made of MS angles of size 25x25x6mm, MS flat of size 50x6mm and grouted to the wall after leaving sufficient space from the wall for testing and replacement. The cable shall be fixed on TW base plank of size 25x150mm using TW cable clamps of size 50x50mm and terminated on PBT Terminal blocks.

10.3 The power supply arrangements wiring shall be carried out using 7/1.4 mm PVC Copper wire as per the approved circuit diagram.

10.4 Ammeter and Stabilizer by-pass arrangements shall be provided on the panel to prevent ammeter being always in the circuit. After wiring, the power rack shall be tested jointly. The power rack shall be energised to its rated capacity and kept in that condition for not less than a week before commencement and any defect notice shall be rectified by the contractor. The Guarantee Certificates and Technical Pamphlets for the power supply equipments shall be handed over to K-Ride. Any addition/alteration to power supply arrangement shall be carried out during Testing and Commissioning.

10.5 The power rack and power supply equipment shall be painted suitably and uniformly before installation as required by K-Ride/Railways. Schematic diagram of power supply arrangement and distribution details shall be printed and pasted on 10mm thick perplex sheet as per instructions of site in-charge and fixed in the power room. As made power diagram shall be submitted in tracing film duly indicating the power supply details and position of the equipment's.

10.6 The power panel and power rack should be suitably earthed.

11 INTERLOCKING OF LEVEL CROSSING GATES WITH LIFTING BARRIERS:

11.1 Excavation of pit, concrete foundation as per Drg.No.SG/CN/ 11 and erection of ground lever frame using suitable bolts and nuts. Casting of A type foundations for mounting the cranks is included in the scope of this work. All the foundations will be plastered on the top.

11.2 Making rod connection from the Ground lever frame to the boom locking mechanism through cranks, adjusting and testing the boom locking from ground lever frame. The rod run shall be at rail level and gap of not less than 40mm shall be maintained while crossing the track. All the joints of rod connecting cranks and levers shall be smithy welded. The rod run between the track shall be insulated while crossing the track circuited portion The Lengthy roddings shall be run on roller stands fixed on trestle located not more than 2.2 Meters between adjacent supports.

11.3 The gate interlocking arrangement shall be carried out as per the standard practice of S.W. Rly and as per the instructions of the K-Ride representative at site.

11.4 The lifting Barrier will be painted with two coats of enamel paint of approved quality as given below:

(A) Stands: Black

(B) Boom with fringes: Black and Yellow- Retro-Reflective stripe 300 mm wide alternatively

(C) Stop Disc on the boom: Red- Retro-Reflective

11.5 Florescent paper strips should be pasted on both the lifting barrier boom.

11.6 INSTALLATION OF ELECTRONIC GATE WARNING EQUIPMENT:

The work includes fixing of Gate warning equipment on suitable fixtures as per Railway standard for LC gates - 2 Nos. one on each side of the track, fixing of amplifier in apparatus case and hooter at Road warning signal post, wiring as per approved circuit diagram and painting.

11.7 In RE area wire rope and Roding shall be insulated with proper insulating material and all metallic parts shall be connected to earth. Insulation required for wire rope and Roding insulation shall be supplied by the contractor.

12 INTERLOCKING OF LEVEL CROSSING GATES WITH LIFTING BARRIERS:

12.1 Excavation of pit, concrete foundation as per Drg.No.SG/CN/ 11 and erection of ground lever frame using suitable bolts and nuts. Casting of A type foundations for mounting the cranks is included in the scope of this work. All the foundations will be plastered on the top.

12.2 Making rod connection from the Ground lever frame to the boom locking mechanism through cranks, adjusting and testing the boom locking from ground lever frame. The rod run shall be at rail level and gap of not less than 40mm shall be maintained while crossing the track. All the joints of rod connecting cranks and levers shall be smithy welded. The rod run between the track

shall be insulated while crossing the track circuited portion The Lengthy roddings shall be run on roller stands fixed on trestle located not more than 2.2 Meters between adjacent supports.

12.3 The gate interlocking arrangement shall be carried out as per the standard practice of S.W. Rly and as per the instructions of the K-Ride representative at site.

12.4 The lifting Barrier will be painted with two coats of enamel paint of approved quality as given below:

(D) Stands: Black

(E) Boom with fringes: Black and Yellow- Retro-Reflective stripe 300 mm wide alternatively

(F) Stop Disc on the boom: Red- Retro-Reflective

12.5 Florescent paper strips should be pasted on both the lifting barrier boom.

12.6 INSTALLATION OF ELECTRONIC GATE WARNING EQUIPMENT:

The work includes fixing of Gate warning equipment on suitable fixtures as per Railway standard for LC gates - 2 Nos. one on each side of the track, fixing of amplifier in apparatus case and hooter at Road warning signal post, wiring as per approved circuit diagram and painting.

12.7 In RE area wire rope and Roding shall be insulated with proper insulating material and all metallic parts shall be connected to earth. Insulation required for wire rope and Roding insulation shall be supplied by the contractor.

13 ELECTRIC KEY TRANSMITER AT LC Gate/ STATION HOUSE:

13.1 Electric key transmitter with/ without crank handle fixed to the key shall be installed firmly on suitable angle supports and Hylum sheet boards in the place indicated by K-RIDE/Railways, with economizer push switch and wired. The cables shall be terminated on a terminal box made using 25mm thick T.W. planks and locking facilities. Required number of terminal blocks shall be fixed inside the terminal box for termination of cables and jumper wires. The wiring shall not be exposed. The cables shall be taken to the terminal box using Powder coated MS Box of suitable size. Interlock the EKT key with Crank handle by Nickel coated Dog chain/ welded. The EKT should be painted and the circuit particulars and ward nos. are to be painted in bold letters.

13.2 INSTALLATION OF EMERGENCY KEY PROVING CONTACT:

EKT shall be kept in a glass fronted wooden box and wired. The box shall have the locking and sealing facility using 6 levers NAVTAL LOCK with duplicate keys.

The contacts shall be made when the key is `IN' and contacts shall break when the key is disturbed or taken `OUT' using a limit switch.

NOTE: In case of Crank Handle Interlocking using Key-Lock Checking Relays, Provision for KLCR/Crank Handle Box, Termination of Cables on Wago Terminals and Installation to be carried out as per the Item Description in the Tender Schedule and Drawing enclosed here.

14 INTERLOCKING OF SIDING POINTS/ TRAP POINTS:

14.1 For siding points with succession key lock arrangements and trap points, hand plunger lock fitted with "E" type locks shall be provided on gauge tie plates with suitable bolts and nuts. This work includes fixing of switch extension pieces and split stretcher bars. Notches on split stretcher bars shall be cut at site.

14.2 It shall be ensured that, it is not possible to lock the points with an obstruction of 5mm test piece placed between switch and stock rail at 150mm from the toe of the switch.

14.3 `E' type lock shall be fitted to the hand plunger locks with proper bolts and nuts. After ensuring the free as well as the full movement of the plunger, marking shall be done and notches cut on the plunger.

14.4 Proper lubrication shall be done for the smooth operation of points, HP locks and `E' type locks.

15 TELEPHONES:

15.1 DESK TYPE PHONES AT STATION HOUSE/APPARATUS CASES/LCs:

Desk Type magneto telephone shall be supplied and fixed at station house/ apparatus case/ LCs/ apparatus cases near top points/siding points and securely fixed on shelf planks. It shall be ensured that no other gadgetsis kept in that apparatus case and separate door lock arrangement made to protect the Telephone battery.

Nickel-Cadmium power pack 4V - 2.2AH, with battery charger 110V AC/4V DC shall be supplied and provided for telephone.

16 PROVISION OF TEAK WOOD KEY BOX & TOOL BOX:

16.1 This work involves manufacture, supply and installation of Glass fronted Teakwood Key box of size 300mmx600mmx75mm with built in lock arrangement. Plastic tags duly engraved giving the particulars of various keys are to be provided along with the keys.

16.2 A teak wood tool box of size 1000mm x750mm x100mm (inner dimensions) made of 25mm thick teak wood, perplex sheet fronted 6mm(Color-less) shall be manufactured and fixed on the wall at a convenient location as instructed by K-Ride representative at site. The box should have provision of padlock for locking arrangements.

17 ERECTION OF BOARDS WITH LEGENDS/ GOODS WARNING BOARDS:

17.1 Retro reflective Boards with Calling on Legends/ Goods Warning boards shall be fitted on to the Rails/L-Angles, erected with suitable foundation at location as indicated by K-Ride representative and as per approved signaling plan, clear of infringements.

17.2 Necessary legends such as "DRAW CLOSE IF SIGNAL IS AT ON" shall be computer printed on retro reflective sheet as per standard practice of this Railways and as per Signal Engineering Manual.

17.3 Rail posts and other fittings shall be painted as prescribed in Signal Engineering Manual and as directed by K-RIDE/Railways Engineer.

18 EARTHING:

18.1 All apparatus cases, battery boxes, CT boxes, armors of cables, battery chargers, transformers, power panels, Control panel, Block Instruments/Control test panel/Cable Termination Rack/Relay Racks, etc., shall be earthed. If number of apparatus cases are grouped at a place, one earth shall be provided up to 2 Full Locations and 1 Half Location. Over and above this, additional earth to be provided at the other end and both the earth need to be connected to all the locations in ring path. Otherwise, separate earth is to be provided for each apparatus case. The earth resistance shall not be more than 10 Ohms.

18.2 GI PIPE EARTHING SYSTEM shall be provided as per the drawing of GI Pipe Earthing system available at K-RIDE and as directed by Railways Engineer.

18.3 COPPER PLATE EARTHING SYSTEM shall be provided as per the drawing of Copper Plate Earthing system available at K-Ride and as directed by K-RIDE/Railways Engineer.

19 PROVISION OF LOCKS:

Universal locks (EWS Locks)/ GI locks/Navtal Locks shall be provided for CLS units, Route Indicators, point machines, apparatus cases, battery boxes and C.T. boxes, wherever necessary. Two Navtal locks (Godrej make) 75mm with 2 keys shall be provided for Relay Rooms at all stations.

20 PAINTING:

20.1 Block instruments, Block counters, control panel, EKT‟s and all signaling gears installed shall be painted in accordance with the standard practice of South Western Railway and as per Signal Engineering Manual.

20.2 While painting, initially one coat of primer and afterwards 2 coats of enamel/aluminium paint shall be applied.

20.3 The details of paints to be used on the signaling gears are shown below.

S. No.	Signalling Gadgets	Colour to be painted (outside)
I	Signal(Colour Light Signal) & Shunt Signal: i) Surface base ii) Post iii) Aspect unit complete	Black Aluminium(except for Distant Signal in Double Distant Territory) Black Note: Post of Distant Signal in Double Distant Territory to be painted in black & yellow stripes at 300 mm interval.
II	All types of apparatus cases and cable termination box	Aluminium
III	Track Lead Disconnection Box	Black
IV	SM‟s Control Frame Instrument	Green Enamel
V	Point machines	Black
VI	Electrical Detectors	Black
VII	Electrical Lever locks & Circuit Controller	Black
VIII	Key Transmitters	Red or Black
IX	(i) Double line SGE Block Instrument (ii) Single Line Token Instrument (iii)Single Line Tokenless Instrument	Green Enamel Grey Enamel Green Enamel
X	(i) Interlocking frame supports, quadrants, lever below quadrants, locking trough, catch handle connection & Indication plates (ii) Down rods between Lever tail and crank (iii) All types of cranks, compensators, Facing point Locks, lock bars & Detectors. (iv) Roddings & Rod Rollers	Black Black Black Red Oxide Paint
XI	(i)Point Lever (ii)Lock Lever (iii)LC Gate Control Lever (iv)Spare Lever (v)Signal Lever	Black Blue Chocolate White Red
XII	Rails	Black

21 NON-INTERLOCKED SIGNALLING ARRANGEMENT:

21.1 Non-Interlocked Signalling Arrangement as explained below shall be made by the Contractor at his own Cost during all the phases of Commissioning of Stations as per the directions of K-Ride representative. No extra payment will be made on this account.

21.2 Erection and wiring of temporary relay rack, SM's slide instrument, wiring alteration in the FTOT, apparatus cases, signals, Control panel etc. as per the instructions of K-Ride representative at site for operating signals and points during non-interlocked working.. The work also includes provision of Magneto Telephone communication between Top points/ location goomties and SM's Room.

27.3 The SM"s control instrument shall be wired as required by K-RIDE/Railways and as per the circuit diagram prepared in connection with NI. working. Necessary wooden crosses shall be fixed for the signals out of use as indicated by K-RIDE/Railways. Special warning boards/stop/speed boards may be fixed temporarily as per the NI plan.

22 RELEASING OF S & T GEARS:

22.1 An inventory of all the S&T gears to be released in the yard should be taken up jointly with K-RIDE/Railways representative duly indicating as serviceable or unserviceable before NI working commences. The same should be submitted and approved by the Engineering in-charge.

22.2 The S&T gears as mentioned in the schedule should be released carefully without damage and stacked at a place indicated by the K-Ride representative.

22.3 All the concrete foundation of the released gears like signals, location boxes, „A" type bases, etc. should be broken completely. The resultant pit shall be refilled with earth, rammed and re-surfaced. In case of releasing, the stands grouted on the walls/ floor should be restored to original condition and neatly plastered.

22.4 All the unserviceable released materials shall be guarded by the contractor till they are returned back to stores/ depot as directed by K-Ride representatives.

23 TRANSPORTATION OF SERVICEABLE MATERIALS:

The released serviceable materials shall be transported from the work spot to the Stores Depot. Loading and Unloading of materials shall be done by the contractor. The released material shall be stacked neatly by the contractor in the Railway Stores.

24 PROCUREMENT OF CEMENT:

24.1 Cement for use in the works shall be procured by the contractor from the main producers/their authorized dealers/ authorized stock yards which shall conform to BIS Specifications.

24.2 Cement bags packing should bear the following information in legible marking:

i. Manufacturer's name
ii. Registered Trade Mark of manufacturer, if any
iii. Type of cement
iv. Weight of each bag in kgs. or No. of bags/ton.
v. Date of manufacturer, generally marked as week of the year/year of manufacturer,

e.g., 30/93 which means of 30th week of 1993.

24.3 To ensure quality control, test certificates from the manufacturer should be produced by the contractors, which should confirm to the relevant specifications [latest may be incorporated].

24.4 K-RIDE/Railways may also take samples during the course of the work and get the cement tested to ascertain their conformity to specifications.

24.5 When such sampling is done, it shall be as per IS Specifications.

24.6 Test on the cement as per IS:4301 shall be carried out in the field level. Some of the tests

Which may be carried out are:

(i) Compressive strength
(ii) Initial and final setting time
(iii) Consistency
(iv) Soundness

25 WIRES TO BE USED IN S&T INSTALLATION:

The size of various wires/ cables to be used for the wiring of signalling and telecommunication gadget is indicated below:

SN	Size of wire	Circuits/ Equipments
1	16/0.2 mm Copper	Relay rack wiring Panel wiring Plug-in type relay wiring at location
2	7/1.4mm Copper	Power equipments
3	3/0.75mm Copper	Power equipments in locations Relays other than plug-in type Block instrument Rotary key transmitter All Signals Electrical detector SM‟s control instrument Point machine Loop wire at locations

26 TESTING & COMMISSIONING INCLUDING AS MADE:

26.1 The entire installation shall be tested by the contractor as per the approved plan and design according to the provisions in Signal Engineering Manual (SEM), OEM guidelines and established practice of the railways and after satisfying himself, the K-RIDE / Railway shall jointly test along with the contractor. Any alteration during testing shall be carried out at free of cost as required by K-RIDE/Railways before commissioning. Each installation shall be tested in the presence of the supervisory officials deputed by the K-RIDE/Railways as soon as the particular installation/ equipment is installed and unless the working of the equipment is actually ensured, it will not mean that the work has been

completed to the satisfaction of the K-RIDE / Railway. This work involves testing and commissioning of the entire installation. Two copies of the approved plans and designs incorporating all construction details and stamped as “TESTING COPY” shall be submitted to K-RIDE before taking up the joint testing with Railways.

26.2 In order to ensure that equipments are properly installed and commissioned by adhering to pre- commissioning check list and procedure as defined by OEM in its installation manual, it is necessary that Electronic Signaling systems i.e. EI, SSDAC, IPS, Datalogger are installed, tested and commissioned by RDSO approved manufacturer and a certificate shall be issued to K-RIDE/Railways.

26.3 “**AS MADE” DETAILS:**

After joint testing of the installation with the K-RIDE/Railways engineers and incorporating all alterations suggested in the approved plan and design, the contractor shall update all the records, plans and design. Required copies of final `As Made' details as hereunder shall have to be supplied duly incorporating all particulars for the station before commissioning of the entire installation. All „Asmade‟ shall be prepared by the contractor in AutoCAD 2000 or latest and submitted in compact discs in duplicate. All `As Made' documents/ plans shall be made by the contractor on Polyester Films to RAILWAY STANDARD only as laid down in the Special Condition of Contract and shall be handed over to the Railways, duly signed.

i. „As made' Circuit Diagram
ii. „As made' Cable Core Plan
iii. „As made' Cable Route Plan
iv. „As made' Track Bonding Plans
v. „As made' Power Supply Layout Diagram
vi. „As made' Contact Analysis Chart
vii. „As made' Relay Disposition Chart
viii. „As made' Termination Particulars of Locations & FTOT.

Contractor shall hand over along with the negatives, required copies of plans and designs in the neatly bound booklet marked as `FINAL As Made'. Two sets of these documents shall be kept in thick plastic cover (2 sheets back to back in one plastic cover) duly filled in plastic folder and handed over to Railways.

The contractor is required to supply the following bound registers in 100 pages printed on good quality papers. (75 GSM)

i. Cable Meggering Register,
ii. Relay Register,
iii. Relay Room Key Register,
iv. Route Cancellation Register
v. Earth Resistance Register.
vi. Track Circuit Register
vii. Points Machine Parameter Register
viii. IPS Parameter Register
ix. Battery Register,
x. Axle Counter/MSDAC/ BPAC Parameter Register and any other Registers/Bounded Books as indicated by the K-Ride Representative.

27 PROCEDURE FOR INITIAL CHARGING OF SECONDARY CELLS:

27.1 All the cells in the battery set shall be same type and capacity.

27.2 Electrolyte shall be prepared by mixing battery grade Sulphuric Acid and distilled water in the ratio 1:5 in a glass/ Porcelain container by adding Acid to water and not vice-versa

27.2.1 The new cells shall be cleaned with distilled water and filled with this electrolyte up to 12-15mm above the plates

27.3 Allow the plates of cells to soak in the electrolyte for 12 hours

27.4 Charge shall be applied at the rate of 4% of AH value of the cells to the correct terminals of the battery set duly interconnected.

27.5 Specific Gravity and voltage of each cell shall be measured and recorded once in 8 hours.

27.6 Charging shall be stopped when specific gravity becomes 1210 +/ -5

27.7 If the specific gravity does not attain this value, little quantity of electrolyte shall be taken out and with electrolyte of higher value (1400 – obtained by adding acid and added water in the ratio 7:11) and charging shall be started afresh.

27.8 On charge, the cells shall be discharged with lamp load up to the limit when the specific gravity becomes 1190 and voltage 1.85 volts.

27.9 Charge and discharge cycle shall be repeated once again.

27.10 Final charge shall be given before wiring the cells to use.

28 PROCUREMENT OF STORES:

28.1 For the execution of the works, the contractor shall procure items of materials inclusive of miscellaneous and consumable items of Stores.

28.2 The specification for each material to be procured and used by the tenderer shall be as indicated against each item of material. All the materials and equipment‟s to be supplied and used for execution of work shall be to IRS specification wherever available, or to IS, if IRS is not available. In case of materials for which neither IRS nor IS specification is

28.3 available, detailed specifications with drawing have to be supplied by the contractor for approval of the K-RIDE/ Railways.

28.4 Materials not covered in RDSO‟s approved list of items and to be supplied by the contractor shall be of the best quality and from manufacturers of reputed establishments. The contractor shall produce Quality test, Warranty certificates from the manufacturers and the pamphlets in four copies to the K-RIDE Materials covered under RDSO‟s approved list of items should be procured from those firms approved by RDSO only.

28.5 The contractor, will however have to procure all the tools and plants required for executing the labour portion of the work and before the actual commencement of the work, the contractor will satisfy the K-RIDE engineer that he has procured all the necessary tools and plant required of good quality. The contractor shall engage his own labour and supervisor for the execution for work covered in the contract.

29 USE OF TECHNICAL TERMS AND CONDITIONS, DRAWINGS AND SPECIFICATIONS: Definition of technical terms and symbols used in circuits shall be as per Indian Standard Specifications and where such specifications are not available, they should be of British Standard Specification.

30 SPARES:

The Tenderer shall supply the essential spares as per the quantities indicated in respective Schedule of works.

31 DISCREPANCIES IN DRAWINGS AND OTHER DOCUMENTS:

The tenderer shall carry out at his expense any alteration of the work due to any discrepancies, errors or omissions in the drawings or other particulars submitted by him.

Any approval given by the K-RIDE/Railway for this purpose shall in no way absolve the contractor from any or all responsibilities for the correct function of the equipment. In this regard, the sole responsibility rests with the contractor in all respect. Any fittings or accessories which may not be specifically mentioned in the specification of tender documents or the letter of acceptance of the tender or the agreement executed thereof but which are usual or necessary as per normal Signal Engineering practice are to be provided by the contractor without extra charge so that the plant is complete in all respects.

32 ISSUE OF MATERIALS:

32.1 Extra care should be taken in the transportation of sophisticated Electrical and Electronic equipments like relays, power equipments, etc. to prevent from damage during transit. Further, these equipments should be stored in a covered place to protect from heat, dust, water, etc. These equipments should be installed and brought in use before the expiry of the shelf life

32.2 Material at Site statement shall be prepared and submitted as per the provisions contained in GCC by the K-Ride Engineer. The contractor must promptly submit the monthly return of the issued stores to K-Ride Engineer in the first week of every month without fail.

32.3 If at any time, any material which the contractor would normally have to arrange for himself for executing the works, is supplied by the K-RIDE/Railways, either at the contractor‟s request or suo-moto in order to prevent possible delay in the execution of the work due to contractor‟s inability to make adequate arrangements for the supply thereof or otherwise such materials will be made available to the contractor in the Railways Stores. All handling thereof will be the contractor‟s responsibility. Recovery of the cost of such supply materials will be made from the contractor‟s bills as per extant rules of the K-RIDE

33 RETURN OF SURPLUS/ RELEASED MATERIALS:

33.1 The contractor has to return any cut pieces of cables, wires, etc., that may be left out and surplus materials from the drums and other packing materials that might have been handed over to him. No extra payment will be made for this and the unit price quoted against the various items should include this work also. The surplus materials have to be handed over to the Railway Stores as per the instructions of the Engineer- in-Charge of the work

33.2 The contractor shall take proper written acknowledgement from the Engineers Representative For all the materials returned by him.

33.3 All tools that are required by the contractor for the purpose of transportation of the materials, digging, concreting and erection, wiring and painting works shall be brought by

the contractor himself. This shall include spare parts, fuel and consumable and miscellaneous stores .The rates quoted by the contractor shall be deemed to be inclusive of all charges for such items and inclusive of labour required to ensure efficient and methodical execution of work.

34 RECEIPT OF MATERIALS FROM CONTRACTOR:

34.1 As soon as the materials are accepted by the K-Ride from the contractor, DMTR entries are to be made immediately. While taking materials from the contractor, delivery challan issued by the firm, who has sold the materials to the contractor/trader and inspection certificate shall be insisted upon.

34.2 Fabricated items which are to be supplied by the contractor are to be checked thoroughly with the drawings regarding quality of the materials, gauge dimensions, etc. as per the schedule. Wherever any material is received from field/contractor, the detailed nomenclature shall be entered in the DMTR. In case of equipment, the details of manufacturer‟s name, year of manufacture, RDSO Test Certificate No., Serial No., Contractor‟s name and Agreement No. and place of installation shall be mentioned both in the DMTR and the ledgers.

34.3 Materials are normally to be delivered at designated Stores by the contractor. If they are delivered at site due to logistics/exigencies, the supervisor/officer receiving such materials (after verification of due inspection) shall arrange for necessary entries in the Site Inspection Register and ensure the entry in designated Stores‟ DMTR within a week.

35 INSPECTION OF WORKS:

35.1 The Engineer or his representative shall inspect and test the various portions of the work at all stages and shall have full power to reject all or any portion of the work that he may consider to be defective or inferior in quality of materials workmanship or design in comparison to what is called for in the specification. In the event of rejection of any work already executed and not in accordance with specification as in this tender and/or as determined by the Engineer or which the Contractor has been apprised, the contractor shall carry out alterations/ replacements to such works to the satisfaction of the Engineer for which no additional expenses will be borne by the K-Ride.

35.2 The contractor shall submit detailed test procedure for each equipment, sub-system and system as a whole to the K-Ride. The K-Ride shall discuss with the contractor and modify the test procedure as may be required to ensure that the requirement of tender specifications are complied. The finalized test procedure shall, only, act as a broad guideline and K-Ride shall be free to carry out any other tests that may be considered essential. The test procedure shall give details of all equipment, test and measuring instruments required to perform the tests which shall be provided by the contractor free of cost.

36 ATTENDING TO DEFECTS:

The contractor shall rectify defects that may arise in the work executed during Maintenance period after completion of work, such defects being due to bad workmanship on the part of the contractor or otherwise. Should any dispute arise so as to correctness of the defect pointed out, the Engineer‟s decision in this regard is final and binding.

37 INSPECTION OF MATERIALS:

37.1 Materials to be supplied by Contractor shall be of best quality and shall conform to the

relevant specifications, Designs and Drawings. The materials shall be procured by the Contractor/s from manufacturers of repute or their authorized dealers as approved by the Engineer-in-Charge.

37.2 The contractor should procure signaling/telecom items which appear in the RDSO approved list of suppliers. The contractor shall take prior approval of the K-RIDE/Railways before placing orders on the firms.

37.3 The items which are included in the list of RDSO approved suppliers (Electrical Signaling items) shall be inspected by RDSO and Mechanical Signaling items shall be inspected by RITES except petty items which shall be inspected by representative of the Engineer-in-Charge. The RCC products, GI Pipes, FRP type TLD Boxes, Apparatus Case, HDPE Pipe, Polyolefin Cable channel and Earth Electrodes, shall be inspected by RITES. In case the value of Electrical signaling items is less than Rs. Five Lakh, the inspection shall be carried out by Consignee. In exceptional cases, the consignee inspection shall be carried out by an Official nominated for the purpose. Even in these cases, the materials shall be procured from RDSO approved sources.

37.4 The following critical items will continue to be inspected by RDSO irrespective of its value:

(a) All Types of Signalling Relays
(b) Block Instruments
(c) Axle Counter Equipments
(d) All Power Supply Equipments
(e) Electric Key Transmitter
(f) Terminal Blocks (PBT type)
(g) Electric Point and Lock Detector
(h) Electronic Interlocking system.
(h) Data Loggers
(i) LED Signals
(j) PVC Wire Copper for signalling
(k) Maintenance Free Earth.

37.5 All materials that are not covered under specification, designs and drawings of RDSO, Railway Board, etc., will be procured by the Contractor from the manufacturers of repute/their authorized dealers, after the approval of the Contract Signing Authority

37.6 Materials to be supplied by the contractor shall be put up for inspection of Engineer or his representative for checking its quality/ suitability before they are finally used/ installed by the Contractor and necessary inspection certificate to be obtained. The Contractor shall therefore arrange to get the material inspected in advance, preferably in bulk and not in piece-meal. The Contractor shall give the K-Ride 10 (Ten) days" notice, when the materials are ready for inspection.

37.7 All materials to be supplied by contractor should be offered by him/them for RDSO"s/RITES inspection, well in time, so as not to delay the progress of work at any stage at any of the stations in any way on this account.

37.8 If required, the Contractor shall provide at point of production, apparatus and labour for making required tests under the supervision of the K-Ride. Tests may be made either at point of production, on samples submitted or at the destination.

38 FACILITIES FOR TEST & EXAMINATION:

The contractor shall provide, without any extra charges, all materials, equipments, tools and labour of every kind which the RDSO/RITES or their nominee may consider necessary for any tests and examinations which they or their nominee shall require to be made on the contractor's premises and shall pay all cost attendant there upon. The contractor shall also provide and deliver free of charge at such places as the RDSO/RITES or their nominee may nominate such materials as they or their nominee may require for the independent testing organization. The cost of any such tests will be defrayed by the K-RIDE unless it is stated in the specification that it is to be paid by the Contractor.

39 CERTIFICATE OF INSPECTION AND APPROVAL:

39.1 No stores will be considered ready for delivery until RDSO/RITES/K-RIDE/Railway inspecting officer nominated by them have certified in writing that the material has been inspected and approved by them for dispatch.

39.2 Facilities must be provided by the contractor to the K-RIDE or their nominee for inspection of the stores, equipments and structures at all stages of their assembly, manufacture and fabrication.

40 INSURANCE:

40.1 The contractor shall take out and keep in force a policy or policies of insurance against all liabilities of the Contractor or the K-RIDE at common law or under any statute in respect of accidents to persons who shall be employed by the Contractor in or about the site or the Contractor"s Office for the purpose of carrying out the contract works on the site. The contractor shall take about and keep in force a policy or policies of Insurance against all recognized risks to their office accommodation and storage for which he is liable. Such insurance shall in all respects be subject to the approval of the K-RIDE.

40.2 The Contractor shall take out and keep in force a policy or policies or insurance for all materials handed over to him irrespective of whether used up in the portion of work already done or kept for use for the balance portion of the work until such works are handed over to the Railway.

40.3 For this purpose, the works are deemed to have been handed over when final acceptance certificate is issued by the Engineer after the completion of the entire acceptance test to be conducted on the works. The contractor shall not be liable for losses/damages to the materials either used up in the portion of work done or the materials kept for use at site, in consequence of mutiny or other similar causes over which the contractor has no control and which cannot be insured. Such losses or damages shall be the liability of the De.

40.4 The Contractor should, however, insure the stores brought to site, against risks in consequence of war and invasion, as required under the Emergency Risk (Good) Insurance Act in force.

40.5 The Contractor shall take out all insurance covers in connection with this contract with the General Insurance Corporation of India.

41 AVOIDING INFRINGEMENT OF INDIAN RAILWAY ACT:

41.1 The works must be carried out most carefully without any infringement of the Indian Railway Act or the General and subsidiary rules in force on the Railway, in such a way that they do not hinder Railway operation nor affect the proper functioning of or damage any Railway equipment, structure or rolling stock except as agreed to by the Railway, provided that all

damage and disfiguration caused by the contractor to any Railway or Public properly must be made good by the contractor at his own expenses failing which cost of such repairs shall be recovered from the contractor.

41.2 No work on the points, track circuits, equipments involving working signaling gears, internal wiring, cable termination, etc., should be done unless and until contractor‟s technical supervisors are present at site.

42 CONTRACTOR's DRAWINGS:

42.1 Any work done by the contractor prior to the approval of the contractor‟s drawings will be done at the risk of the contractor unless previously authorized in writing by the K-RIDE.

42.2 The tenderer shall be responsible for the correctness of the drawings furnished by him. The contractor shall carryout any alterations of the works due to any discrepancies, errors or omissions in the drawings or other particulars, submitted by him. Any approval given by the K-RIDE/Railways for this purpose shall in no way absolve the tenderer from full responsibility for the execution of the contract in all respects.

42.3 After the contract is awarded, the contractor shall furnish to the K-RIDE required, prints of contractor‟s drawings that form an essential part thereof. No change shall be made in any approved drawings without the written consent of the K-Ride/Railways.

42.4 After completion of the execution of the contracts, the contractor shall submit to the K-Ride/Railway all corrected tracing film/cloth tracings of drawings furnished by him and prescribed sets of copies of final drawings.

42.5 Notwithstanding the fact the K-Ride/Railway might have approved or the contractor‟s design, drawings and specifications the contractor is responsible for the correctness of the entire scheme as a whole and its satisfactory performance to the specifications as laid down by the Railway. The K-Ride/Railway‟s responsibility is only for the correctness of the signaling plans.

42.6 In the event of any breach of the aforesaid conditions, the contractor shall in addition to throwing himself open to action for contravention of terms of the agreement and or for original breach of trust, be liable to account to Government for all moneys, advances or profits resulting or which in the usual course would have resulted by reason of such breach.

PART-(I)

TECHNICAL REQUIREMENTS OF EARTHING ARRANGEMENT

1. Earthing arrangement for Electronic Interlocking and End goomties shall be as per RDSO Guidelines STS/E/TAN/3006 or latest and further guidelines issued by K-Ride board/ RDSO for achieving earth value less than One Ohm. At locations, where it may not be possible to form a perimetric ring earth around the EI room, Power supply room and station room, in such stations parallel earthing arrangement consisting of interconnected multiple earth electrode may be made at the free space near the station building such that following requirements are made

(a) Single point entry of Main earth bond with all other cables to the EI room shall be adhered.

(b) The earth connections to the Perimetric ring earthing for all the items shall be made using shortest possible path.

(c) All earth electrodes must be interconnected with buried conductor however visible and provided with RCC enclosure/ skirting.

2. The lightning protection system shall be installed in accordance with RDSO/SPN/197/2008 or latest and additional requirements of local authority. The system shall consist of air terminations, down conductors, joints & bends, testing joints, earth terminations & earth electrodes. Advanced lightning protection system shall include components as follows: Air terminations, mechanical supports, low impedance insulated down conductor, performance recording equipment, and a low impedance grounding earthing system.

2.1 Design of Lightning Protection System

2.1.1 Air Terminal

Advanced Controlled Streamer Emission based Lightning Protection System is suitable for protection of Buildings and Towers against Direct lightning Strike complete with Controlled Streamer Emission (CSE) lightning conductor air Terminal. The round shaped Air terminal should be based on the latest lightning research and technology, which has an enhanced area of protection. Placement of the Air terminals is determined using the „Collection Volume Design Method". Unlike conventional design theories, this method provides an imperial and quantitative method based on design parameters such as the structure height, field intensification of structural projections.

The Controlled Steamer Emission Air Terminal shall be working on the principle of field intensification and responds dynamically to the appearance of a lightning downleader by creating free electrons and photo-ionization between a semispherical surface and an earthed control finial and chart have a shape of semi-spherical with outer diameter of 260mm and height from the base of 115mm. and approximate weight of terminal being 2.8 Kg, to significantly reduce the build up of sharp point corona discharge under static field thunderstorm conditions.

The supporting accessories and mast system are comprising of the insulated FRP pipe of min. 2m length, high grade Aluminium mast of min. 2 Mtr., the U Bolts so as to withstand maximum recorded wind velocities of 100 kmph and the Event Counter with triggering impulse of 1500 Amps. For 8/20 micro second without any external power supply and complete as required as per the specifications. The Air Terminal should be UL listed as per the UL96. “Lighting Protection Components” (Standard for Safety). The round shape of the Air Terminal is designed to reduce the buildup of Corona space charge which inhibits the formation of upward streamers. Standard Franklin rods and ESE terminals which are pointed, create a lot of Corona which is a main reason for conventional lightning protection system failures. The geometry of the air terminal is a significant factor in its performance. The round Air Terminal launches a streamer before other competing structures of the structure can launch their

streamers giving it a time advantage, which allows its streamer to become the preferred attachment point for the approaching down leader.

The protective zone provided by the air termination shall be such that it becomes the preferred strike point for all discharges exceeding a peek amplitude return strike current of XkA, according to the statistical level Y per IEC 61024. The design shall take account of upward leader competing projections on the structure.

Strike Current (X)	Level of protection (Y)	Exceedance Probability
2.9 kA	Protection Level-I Very High	99%
5.4 kA	Protection Level-II High	97%
10.1 kA	Protection Level-III Medium	91%
15.7 kA	Protection Level-IV Standard	84%

2.1.2 Down conductor

The Down conductor should be in form of multi layered cable consisting of plastic filler, multi stranded copper conductor with the cross sectional area of 55 Sq.mm. inner insulation, outer copper conductor, conductive sheath, all concentrically arranged with outer diameter of 36mm. characteristic impedance of 4.5 Ohms, inductance of 22nH/m and voltage withstand capability of 250kV, i.e. core to screen 250kV based on 1/50us wave shape as defined under ANSI C62.41, with factory done upper termination and the kit for lower termination and all fixings and accessories as per specifications. The multilayered cable is the Shielded conductor which reduces the risk of side flashing to the building/structure, thereby eliminating the possibility of damage of equipment and injury to people. The conventional GI or Copper strips can cause side flashing.

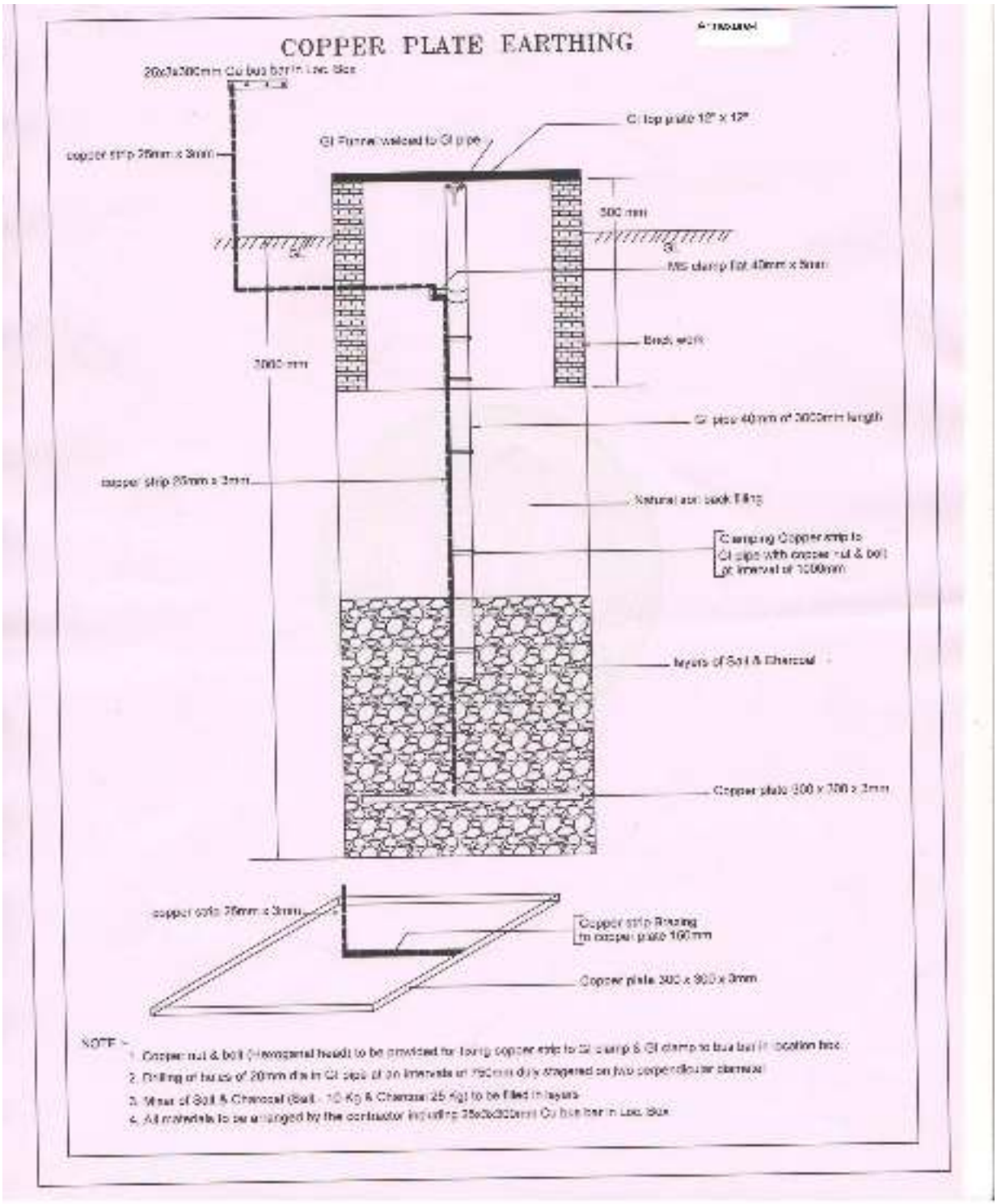
The down conductor shall have a capacitance equal to 1100 or greater than 1100 pF/m and the resistance should be equal to or less than 0.5m.ohm/m.

The main copper conductor of Down conductor cable shall be capable of direct connection to the base of the air termination by use of a compression coupling or CADWELD

2.1.3 Performance recording Equipment

Each Protection system shall be provided with Lightning Event Counter. The lightning event counter shall have a register that activates one count for every discharge where the peak current exceeds 1500A. The test wave shape shall be the 8/20us standard as defined by A SI C62.41.The lightning event counter shall be robust, easy to install & housed in a IP67 rated enclosure. The counter shall operate from the energy of the lightning discharge and not depend external or battery power to operate.The lightning event counter shall be installed to the manufacturer’s instructions in a readily accessible manner so that readings can be taken at regular intervals. It shall be so positioned such that its operating temperature is within the range –10 dec. C to +50 deg. C.

SCHEMATIC DIAGRAM OF COPPER PLATE EARTHING



PART-(II)

TECHNICAL REQUIREMENTS OF HIGH AVAILABILITY SINGLE SECTION DIGITAL AXLE COUNTER

1. The High Availability Single Section Digital Axle Counter (HASSDAC) must be confirming to RDSO Specification no. RDSO/SPN/177/2012 (Ver. 3) or latest and shall be provided with High Availability Dual track sensor.

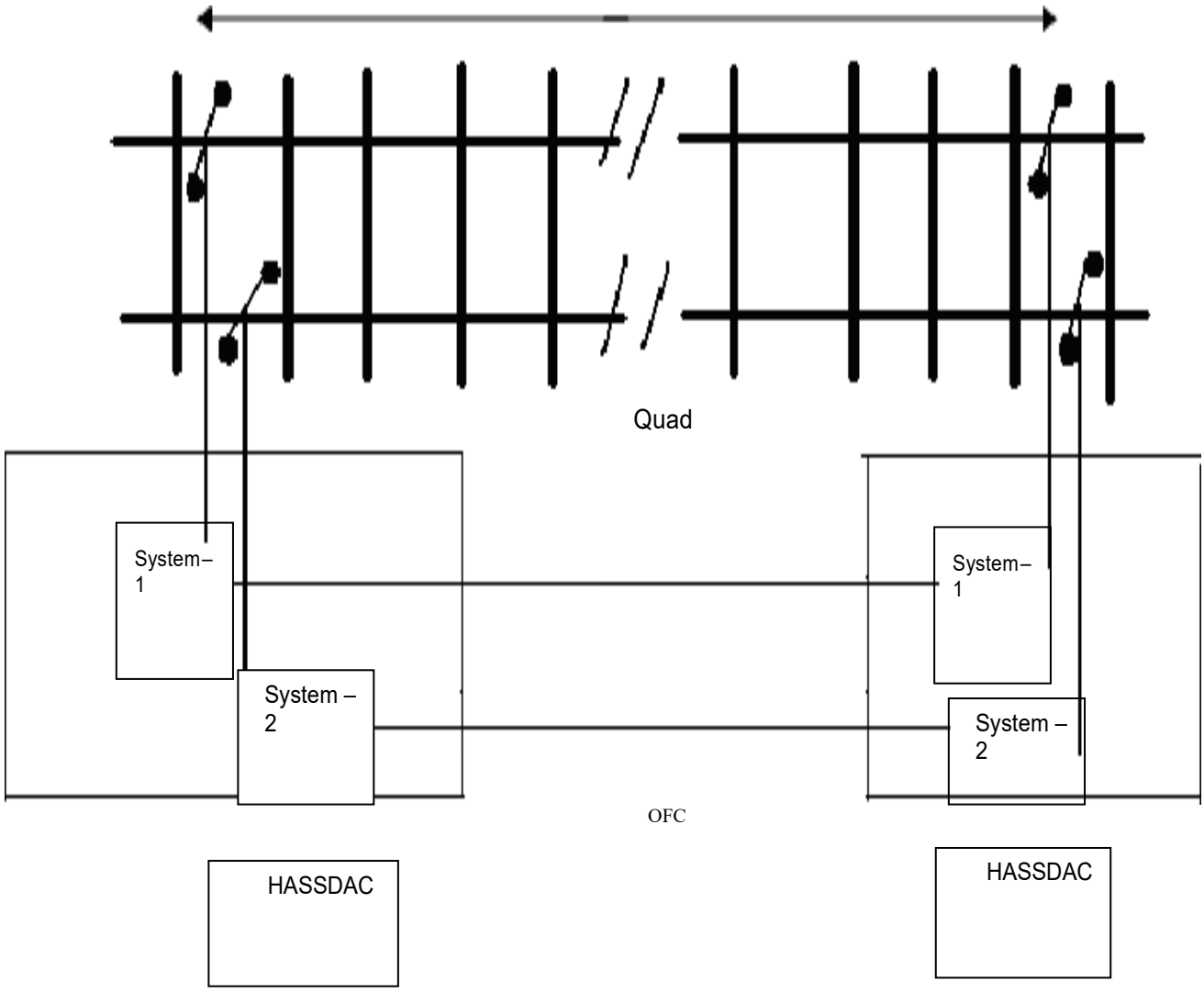
2. Wiring Discipline should be as per RDSO TAN No. STS/E/TAN/6001, dtd. 04.10.2011.

3. 19" rack Mountable Multi service multiplexer chassis consisting of 4 E1 Interface uplink and 3 module slots, one slot populated with 2W/4W E & M supporting up to eight interfaces, balance two empty, unit should supports both AC/DC power supply (MRO TEK make MAPLE 4C PCM 1U or similar specifications) shall be provided for auto changeover of the transmission media.

4. Requirements as per Para 18 of RDSO specification no. RDSO/SPN/177/2012 (Ver. 3)

   i. Configuration : 2 DP 1 Section
   ii. Length of cable : 15 Meter
   iii. Supply option : a) High Availability SSDAC
   b) Dual track sensor device

STATION- A BLOCK SECTION STATION- B



Note:

1. Two sensors shall be put on two different rails with 1.25m longitudinal spacing along the track. This will ensure 2m diagonal distance between two sensors.
2. HASSDAC having system – 1 & system – 2 shall be preferably using diverse media (Quad/OFC).
3. When one of the SSDAC is clear whereas other is showing occupied for more than 10 seconds, the clear SSDAC will automatically reset the failed one.
4. All resetting will only be of preparatory reset type.
5. Use of dual track sensors on different all with high availability system is based on MTBF requirements.

Wiring and Installation and Commissioning details:

1. Fixing of MSDAC/HASSDAC system in the location box.

2. Wiring of of MSDAC / HASSDAC system in the location box. (The different cables for signalling & Communication cable will be laid and terminated in the location box).

3. Supply, fixing and wiring of suitable Lightning Dischargers, fuse terminals and fuses.

4. Marking and drilling of holes in Rail, fitting of track device and laying of underground cable from the of MSDAC / HASSDAC system to track device using 40mm dia HDPE pipe. Trans and receive cables has to be taken in separate HDPE Pipe. This includes required trenching from location box to track device. All the materials including HDPE & Cable from system to track device to be supplied by the contractor.

5. Fixing, wiring and installation of Reset box in the SM's room. This includes the supply & fixing of 25mm PVC casing & capping and drawl of required cable from reset box to Cable Termination Box. All the materials like cable, PVC casing & capping to be supplied by the contractor.

6. Connecting of HASSDAC system at location box and reset box at SM's room to earth bus bar

7. HASSDAC will be installed, wired, tested & commissioned by OEM's engineer as per guidelines issued by RDSO. The pre-commissioning check list issued by RDSO for SSDAC will be prepared by OEM's Engineer and signed jointly with Railway/ K-Ride Engineer. Before commissioning of SSDAC, OEM will submit site installation certificate to Railways by mentioning that SSDAC has been installed, wired, tested and commissioned by OEM.

8. 19" rack Mountable Multi service multiplexer chassis and interface equipments required for Mountable Multi service multiplexer chassis should be installed and configured as per requirements of Railway/ K-Ride Engineer at site.

PART-(III)

MULTI SECTION DIGITAL AXLE COUNTERS:

MSDAC is a multi-section digital axle counter system that is designed using the principles of fail-safety and has failsafe architecture. It is microcontroller based and has redundant power supply arrangement. Its modular nature allows you to plan your upgrade and extensions without any problem. It is extensible with 8 detections points in a module set. It provides an easy to use GUI for configuration.

It is used for detecting railway track occupancy primarily in a station. It is used for track circuiting a whole station. MSDAC is modular in design and can be used with more detection points per chassis. Each detection point has a track sensor that identifies a track section boundary. A track section can be defined with 2/3/4 detection points.

The system consists of the following components:

1. Axle Detectors
2. Electronics Field Units
3. Central Evaluator
4. SM's Reset Panel
5. Monitoring Unit

The Central Evaluator of MSDAC has been designed to be modular. The system can be configured for up to more field units in steps. Therefore, the system has the provision to scale up or scale down according to the requirement at station.

The Axle Detectors are installed at the limits of a track section along with their electronic field units on track side. The number of detection points is decided based on the track circuiting requirement of a station. The field units are connected with Central Evaluator by means of ½ Quad cable. The Central Evaluator is installed at the station and is powered by 24V DC local supply. The field units are also powered using 24V DC that is derived from the power source that powers the central evaluator. The Axle Detectors operates on high frequency (As applicable) electromagnetic wheel detection technology. When a train wheel passes over the Axle detectors, the change in electromagnetic field is sensed. This change triggers a complex algorithm that decides if a wheel has passed over the axle detector. The Axle detectors and the electronics associated with it is working on the principle of Phase Modulation.

The wheel-detection events are converted into pulses and these pulses are counted by the field units. These counts are stored as well here. The stored counts as well as the heal of the track sensor are monitored and are continuously transmitted by the field unit by means of telegram packets to Central Evaluator on the ½ Quad cable that also powers the field unit. The central Evaluator receives the count from each of the field unit it is connected to and it then takes the decision of the track section is occupied or not. MSDAC signals the occupancy of the track section by means of an electro-mechanical relay called VR relay. The contacts of VR are used in the signaling circuits of signalling system at the station.

MSDAC has a mechanism to reset a particular track section to recover from an error or a failure condition. This is done through the SM's reset panel. The section is to be physically verified by the SM to be unoccupied and then the reset command is to be given from the reset panel. This command is received by the central evaluator and it then send the command to the respective field units to zero their counts.

It is designed in accordance with the RDSO specification No. Specification No. No. RDSO/SPN/176/2013 (Version 3) or with latest amendments.

Specification of Portable Data Analyser:
Supply of Data Analyzer similar to HP /IBM/Dell or better specifications of following configuration. Necessary software tools required for data analysis should be pre-installed in the system.

Microprocessor	2.50GHz 3rd generation Intel Core i5-3210M Processor or latest processor with Turbo Boost Technology up to 3.10GHz or better
Memory	Minimum 8GB DDR3 SDRAM (2 DIMM)
Memory Max	Maximum supported - 16GB
Memory Slots	2 user accessible
Video Graphics	Intel HD graphics 4000 with up to 1696MB total graphics memory
Display	15.6-inch diagonal HD Bright View LED-backlit display (1366x768)
Hard Drive	1TB 5400RPM hard drive with HP Protect Smart Hard Drive or similar Protection
Multimedia Drive	Super Multi DVD burner
Network Card	10/100/1000 Gigabit Ethernet LAN (RJ-45 connector)
Wireless Connectivity	802.11b/g/n WLAN
Keyboard	Full-size island-style keyboard
Pointing Device	Touchpad supporting multi-touch gestures with on/off button
External Ports	Multi-Format Digital Media Card Reader for Secure Digital cards & Multimedia cards 3 SuperSpeed USB 3.0 1 Universal Serial Bus (USB) 2.0 1 HDMI 1 VGA (15-pin) 1 RJ-45 (LAN) 1 Headphone-out/Microphone-in combo jack
Dimensions	14.94 in (W) x 9.87 in (D) x 0 .87 in (min H)/ 1.04 in (max H)
Power	65W AC adapter 6-cell 62WHr 2.8 Ah lithium-ion battery
ID Mech Description	HP TrueVision HD Webcam with integrated dual array digital microphone
Operating system	Genuine Windows 10

Multi Section Digital Axle Counter (MSDAC) System complete shall confirm to RDSO Specification No. RDSO/SPN/176/2013 (Version 3) or with latest amendments shall be supplied.
Tenderer shall design the scheme for

a) Provision of required number of Evaluators, Track-Side junction boxes, Detection points and Track Clearance Relays etc.

b) During the design, tenderer shall ensure that MSDAC Evaluators to be kept at Relay room /IB Huts in the section.

c) The MSDAC system provided in the IB-section will be interconnected with 6Quad and OFC cables. In case of failure of 6Quad/OFC cable the MSDAC system shall automatically changeover the other cable seamlessly; this system shall be capable of transferring the data, status of relays from IB station to adjacent stations and the indication of working cable to be shown as status at JE/SSE Room

d) Tender design shall include marking of Track Section over the IB Section and ensure that the resetting of Track Section will be done automatically and manually as the case may be.

e) Schedule-H include - Supply of MSDAC system comprising of Axle Detectors, Track side electronics / DAC field units, Central Evaluator, Reset unit, Relay unit, LV/Co-operation box, etc with all other accessories fully wired and fully equipped. - Necessary 24V supplies including DC-DC converters will be arranged through IPS.

f) Configuration of MSDAC at site by OEM or authorized OEM representative.

g) Lightening and Surge Protection for MSDAC as suggested by OEM.

h) Supply of Technical Documents/Manuals, Trouble Shooting Guidelines etc.,

i) Provision of Track Detection using MSDAC in YPR-CSDR section in Bangalore division
j) Provision of MSDAC Track Section status to the either end of stations for monitoring, testing and commissioning of the entire installation should be done by authorized OEM representative.

PART- (IV)

TECHNICAL REQUIREMENTS OF DESIGN AND DRAWINGS

1.0 General:

1.1 Design of signalling circuits should meet the requirements of Signal Engineering Manual, Recommendations of Working Group on Signalling Practices and Interlocking Principles (SP & IP) accepted and circulated vide Ministry of Railway letter no. 2010/Sig/WG/Interlocking Principle, dated 22.05.2012, typical circuits issued by RDSO and Table of Control (TOC) approved and issued by K-RIDE through Railway. The K-Ride/ railways shall issue hard and soft copies of the Signal Interlocking Plan (SIP) and TOC to the contractor.

1.2 Circuits shall be designed to RE standards unless specified otherwise. All interface circuits shall be designed with indirect feeding of signals for non-RE area also.

1.3 System shall be designed for use with Dual Video Display Unit (VDU).

2.0 Version Control:

2.1 Strict Version control shall be exercised. The Check Sum/ CRC details shall be furnished with the initial application logic and changed Check Sum/ CRC along with details of changes in Application Logics subsequently. No change in the Application Logic shall be made without the approval of K-Ride/Railways.

2.2 After making any change in application logic, a comparison statement shall be submitted duly indicating the checksum prior and after the change.

2.3 In case of no change in Application Logic during Factory Acceptance Test (FAT) and System Acceptance Test (SAT), the checksum of the initial submission and that of the service version shall be the same.

3.0 Design:

3.1 The interface circuits must be designed as per the final phase of the Signalling plan so that alterations in the existing interface wiring of initial phases is limited to removal of wires and minimum re-use of bits so as to minimize the interface wiring alterations during Non-interlocked working period in subsequent phases. Additional functions/ alterations shall be catered in new terminations to the extent possible.

3.2 Terminations shall be grouped function wise.

3.3 In ASR logics, read back contact of HR/ DR/ UGR shall not be proved. It shall be ensured that all ASRs are dropped before booting the system.

3.4 Crank handle logics shall be designed with NLR and RLR up contacts instead of back contact of HR and UCR.

3.5 CHRZR shall be slow to release for 30 sec for extracting the Crank Handles comfortably.

3.6 In LR Logics, parallel movements with conditional points shall not be proved. However, these shall be ensured in UCR and HR logics.

3.7 In Point operation circuit, XR shall be initially dropped before picking up WJR.

3.8 ZWLKRs shall not be split and there shall be only one ZWLKR for a point with different conditional movements.

3.9 In UCR logics, conflicting ASR/ TRSR/ TLSR shall be proved but for Calling ON signals, only UCR back contact of the main signal above it shall be proved.

3.10 In yards with sectional route release, K-Ride shall indicate the track circuits to be used in the ASR logics in the Table of Control (TOC) and all other back lock track circuits shall have sectional route release.

3.11 In HR logics, drop contact of all the sectional route release bits (TRSR/TLSR) of the same direction in the route and up contacts of the conflicting direction shall be proved. For overlap, the conflicting ZR, ZR-C, SHZR up contacts shall be proved.

3.12 In ELUYR/ERUYR logics, TSR & TSSLR down contact shall be proved in parallel to track circuits down contacts.

4.0 Documentation:

4.1 As per SEM, part-I, Para No.8.3.4, the circuit diagrams shall be in A3 size sheet (297mm x 420mm) with 10MM border and on left hand side an extra margin of 30mm should be allowed for biding.

4.2 Plotting shall be done with minimum border setting in AutoCAD on the A3 size sheet.

4.3 Relay/ Contact font size should be 2.5 mm and style Times New Roman – Auto CAD.

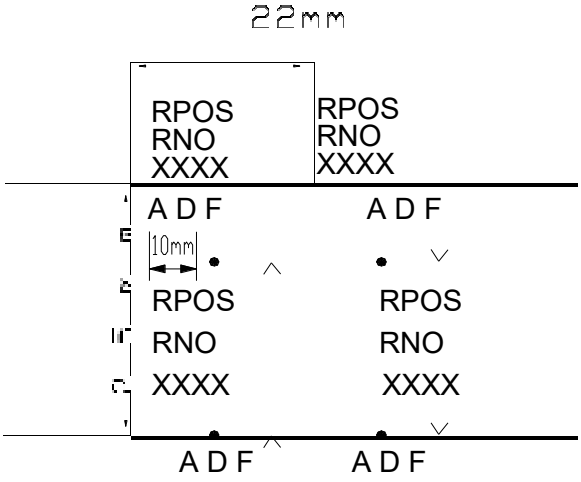
4.4 Negative shall be tracing film for approval of As Made and after approval and signature thereon, RTF shall be submitted. As made negative print must not be fade and spread when subjected to any kind of liquid/ water drops.

4.5 Minimum space in the design elements in Interface or Relay circuits shall be maintained as follows:

(i) Arm to contact: 10 mm

(ii) Arm to Arm: 22 mm

(iii) Line to Line: 25 mm

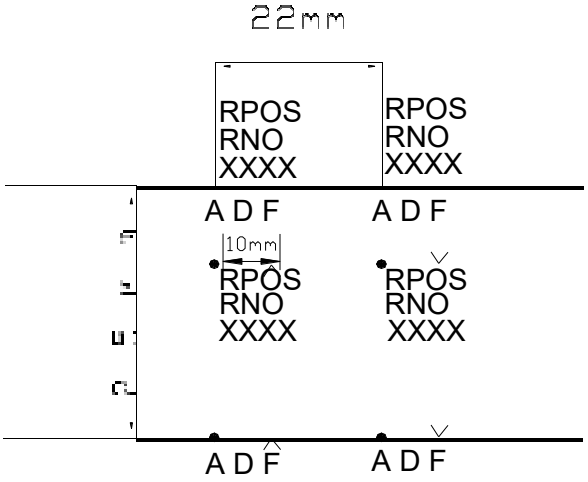


4.6 Minimum space in the design elements in Interface or Relay circuits shall be maintained as follows:

(i) Arm to contact: 10 mm

(ii) Arm to Arm: 22 mm

(iii) Line to Line: 25 mm

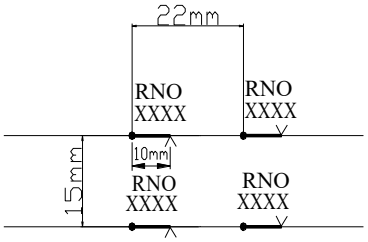


4.7 Minimum space in the design elements in Application Logic circuits shall be maintained as follows:

(i) Arm to Contact: 10 mm

(ii) Arm to Arm: 22 mm

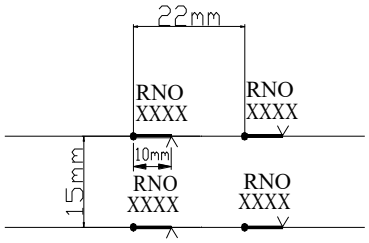
(iii) Line to Line: 15 mm



4.8 Height of Title signature column) should be 30mm from inner borderline.

4.9 Minimum space in the design elements in Application Logic circuits shall be maintained as follows:

(i) Arm to Contact: 10 mm
(ii) Arm to Arm: 22 mm
(iii) Line to Line: 15 mm



4.10 Height of Title signature column) should be 30mm from inner borderline.

4.11 Sheet Nos. should be serially marked in X of Y format without omitting any numbers in between sheets.

4.12 Each booklet of Interface Circuit and Application logic shall be limited to 200 sheets for the convenience of handling. Index shall clearly indicate the specific description of circuit on each sheet.

4.13 Outdoor location termination and wiring details shall be incorporated in the As Made Interface circuit diagrams.

4.14 Circuits shall be grouped in the sequence of signal initiation to route release, panel indication, Block and Miscellaneous circuits as follows:

- KNOB/ BUTTON LOGIC
- NLR/ RLR
- LR/ UR
- NR/ RR
- ZNR/ ZRR
- ASR
- LOHR/ ROHR
- ROUTE CANCELLATION/ EMERGENCY CANCELLATION
- TRSR/ TLSR/ TLZR (STATION WITH SECTIONAL ROUTE RELEASE)
- POINT OPERATION
- PCR
- NWKSR/ RWKSR
- ZWLKR
- UCR
- CRANK HANDLE
- TSR

- HZR
- HR/DR/UGR
- INDICATION
- BLOCK/UFSBI, BPAC
- GFXR/ UNCR BUZZER/ POWER FAILURE/ TJ FAILURE/ DC-DC FAILURE LOGICS
- FCOR
- REDIRECTIONAL
- DATA LOGGER
- MISCELLANEOUS

4.15 After each group of circuits, Spare blank sheets shall be provided duly indicating in the index sheet while submitting for initial approval. These spare blank sheets shall be utilised for incorporation of any additional logic during subsequent stages of design, checking and testing without disturbing the sheet numbering.

4.16 Approved design sheet template shall be adopted for design of the Border, Title, Version and Signature block. Contractor must ensure the verification and collection of the same from the office of the Chief Signal & Telecommunication Engineer (Construction), South Western Railway before start of the design.

PART-(V)
TECHNICAL REQUIREMENTS OF AS MADE DIAGRAMS

1. The following as made Design and documents shall be prepared by the contractor after completion of the work and submit the same for approval through K-RIDE by Railways. After receiving the approval, Soft copy in two sets and Hard copy One set on tracing film and 6 Sets of the bounded Blue Prints of the following design and documents shall be handed over to the K-Ride / Railway.
   (a) Equipment Layout diagram
   (b) Application Logic and associated Circuit diagrams
   (c) Interface circuits
   (d) Wiring diagram of All EI equipments including Object Controllers
   (e) Panel Termination particulars
   (f) Relay Contact particulars
   (g) Terminal Analysis diagram
   (h) Fuse Particulars
   (i) Inspectors Completion Certificate
   (j) Relay Index and disposition particulars
   (k) Power distribution diagram etc

2. The sizes of different signaling documents are standardized as follows. However, contractor shall take the confirmation about the sizes and media etc before undertaking preparation of As Made drawings and designs.
   (a) Circuit diagram: A3 Size.
   (b) Panel termination particulars, FTOT particulars, location particulars: A3 Size.
   (c) Font name: Times New Roman – Auto CAD.
   (d) Font size: 10- 2.5 mm

(e). The above drawings to be made as per SEM/ CSTE Circular (copy may be collected from K-RIDE office).

(f). Two draft copies of above drawings to be submitted for approval. One copy will be returned either duly approved for making a fair copy or for resubmission for approval after incorporating the changes as required by Railways.

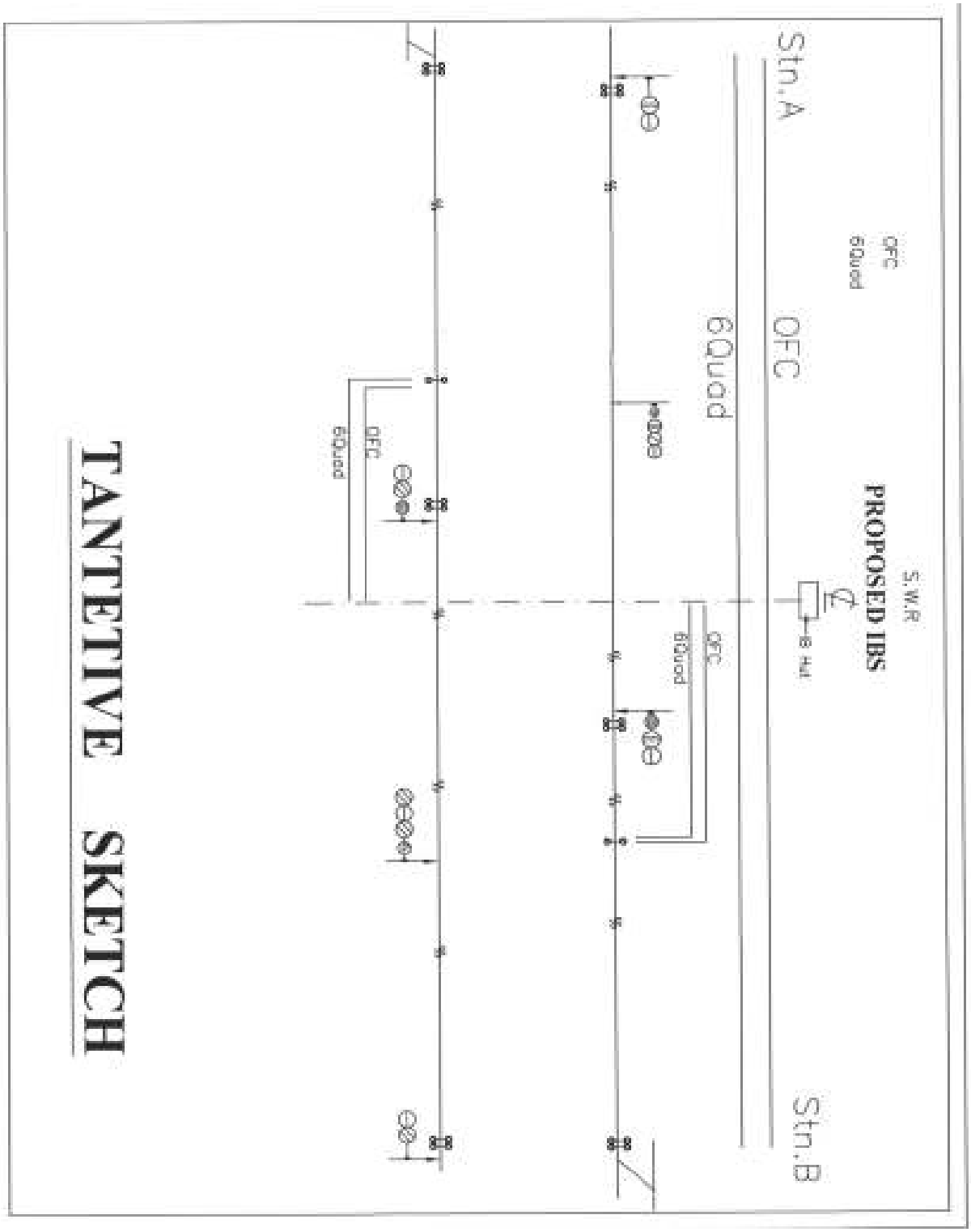
(g). After completion of each phase work, the Application logic and Interface circuits has to be updated as per bell test copy / SAT copy and submit 2 sets of corrected Application logic and Interface circuits in plain paper.

(h). After preliminary approval, required 2 number of prints are to be submitted for Administrative approval. After the Administrative approval negatives of the above drawings have to be made in tracing films for signature in token of approval. After signature on the tracings, 6 sets of these drawings in ammonia/ blue prints kept in standard plastic covers back to back and bounded neatly shall be handed over to the office of GM/K-Ride.

(i). One set of the above drawings shall be submitted in Reproduction Tracing Film with 2 sets of soft copy in CD"s/Pen Drive.

PART VI

TENTATIVE IBS SKETCH



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 Letter of Acceptance .	Form No. COF/1	297
Form of Contract Agreement	Form No. COF/2	298-299
Form of Contract Performance Security	Form No. COF/3	300-302
Form of additional Performance Security (NA)	--	303-305
Advance Payment Security	--	306-309
Form of Bank Guarantee For Release of Balance Retention Money	--	310-312
Bank Guarantee for the safe custody of the plant and materials supplied by the contractor	--	313-316
Work Experience Certificate	--	317-318
Memorandum of Understanding (MOU) for procurement of MSDAC system from RDSO approved source	--	319-320

FORM No. COF/1

Letter of Acceptance

[on letterhead paper of the Employer]

. . . . . date. . .. . . .

To: . ...*[name and address of the Contractor]* . . . . . .

Subject:. . . . . [*Insert Name and Identification number]……..[Notification of Award]…..*

This is to notify you that your Bid dated . . . .*[Insert Date]*. . . for execution of the . . . *[name of the contract and identification number, as given in the Contract Data]* . . . for the Accepted Contract Amount of the equivalent of INR *. . . [Insert amount in numbers and words and name of the currency]. .*, as corrected and modified in accordance with the Instructions to Bidders, is hereby accepted.

You are requested to furnish the Performance Security within 28 days in accordance with theConditions of Contract, using for that purpose the *of* the Performance Security Form No. COF/3 included in Section 8 (Contract Forms) of the Bidding Document.

Authorized Signature: .....

Name and Title of Signatory: .....

FORM No. COF/2

Contract Agreement

THIS AGREEMENT made the . . . . . .day of . . . ., between . . . . . [N*ame of the Employer*. . .. . (hereinafter "the Employer"), of the one part, and . . . . . [*name of the Contractor***]**. .[1]. . .(hereinafter "the Contractor"), of the other part:

WHEREAS the *Employer* desires that the Works known as . . . . . [*name of the Contract***]**. . . . .should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

   - the Letter of Acceptance
   - the Letter of Bid
   - the Addenda Nos. . . . . [***insert addenda numbers if any***]. . . . .
   - the Special Conditions of Contract

     Part A : Contract Data

     Part B : Specific Provisions
   - the General Conditions of Contract;
   - the Specification
   - the Drawings*;*
   - the Work's Requirements
   - the completed Schedules including (priced Bill of Quantities)
   - Any other documents

3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the

[1]*In case Contractor is a Joint Venture the 'name of the contractor' shall be inserted as under :*
"the Joint Venture under the name and title of ……, comprising of ….[Lead Partner] ;……..; and ….."

Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of . . . . . [*name of the borrowing country*]. . . . .on the day, month and year indicated above.

Signed by	Signed by .....
for and on behalf of the Employer in the presence of	for and on behalf the Contractor in the presence of
Witness, Name, Signature, Address, Date	Witness, Name, Signature, Address, Date

COF/3

FORM OF CONTRACT PERFORMANCE SECURITY(BANK GUARANTEE)

[*Refer Clause 41 of Instructions to Bidders]*

(On non-judicial stamppaperoftheappropriatevalue in accordancewithstampAct. Thestamppaperto be in thenameofExecuting Bank).

From:
Name and Address of the Bank…..
……..
To:
The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
"SamparkaSoudha" , 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road,
Rajajinagar 1st Block,
Bangalore - 560 010

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 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 stamppaperoftheappropriatevalue in accordancewithstampAct. Thestamppaperto be in thenameofExecuting Bank)

From:

Name and Address of the Bank…..
……..

To:
The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
"SamparkaSoudha" , 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road,
Rajajinagar 1st Block,
Bangalore - 560 010

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/Consortium partner], a JV/Consortium 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/Consortium, the additional Performance Security is required to be furnished on behalf of the JV/ Consortium in favour of the Employer by the JV/Consortium Partner(s) who is responsible for execution of schedule(s) (as per JV/Consortium agreement) against which additional Performance Security is required to be submitted in terms of ITB 35.5. All the Bank Guarantee of J/VConsortium Partners are liable to be encashed cumulatively.*

Advance Payment Security

[Refer Clause 14.2 of GCC]

(On non-judicial stamppaperofappropriatevalue in accordancewithstampAct. Thestamppaperto be in thenameofExecuting Bank)

From
[Name and Address of the Bank]

To
The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
"SamparkaSoudha" , 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road,
Rajajinagar 1st Block,
Bangalore - 560 010

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*
4. *appropriate value affixed thereon.*

5. ***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/Consortium

*For each Installment of Advance, individual JV/*Consortium *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.*

6. ***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/Consortium

*For each Installment of Advance, individual JV/*Consortium *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.*

FORM OF BANK GUARANTEE FOR RELEASE OF BALANCE RETENTION MONEY

(On non-judicial stamppaperoftheappropriatevalue in accordancewithstampAct. Thestamppaperto be in thenameofExecuting Bank).

From:

……..
…….*Name and Address of the Bank*…..
……..

To:

The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
"SamparkaSoudha" , 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road,
Rajajinagar 1st Block,
Bangalore - 560 010
.

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 deductable 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 it's 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 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.

Date ……. ……
Place……. [*Signature of Authorised person of Bank]*
……
[Name in Block letters]
……..
[Designation]
……..
……[Address]……
…….

Witness :

1. *Signature*
   Name & Address & Seal
2. *Signature* *Bank's Seal*
   Name & address & 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.*

BANK GUARANTEE FOR THE SAFE CUSTODY OF THE MATERIALS SUPPLIED BY THE CONTRACTOR

[Refer Clause 14.5 of GCC]

(To be executed on Non-Judicial Stamp Paper of Appropriate Value and notarized)

THIS BANK GUARANTEE 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 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 Materials brought by the Contractor to site of the works. Brief details are also mentioned in schedule 1 appended hereto.

NOW THIS BANK GUARANTEE 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 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 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 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 Materials against all risks whatsoever including acts of the God till the Materials are duly incorporated in the works, commissioned and are taken over by K RIDE/Railway (including surplus 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 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 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 Bank Guarantee is irrevocable. If at any time, any loss or damage occurs to the 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 Materials shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and/or damaged 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 Bank Guarantee.

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 Materials	Quantity	Value of the 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 Bank Guarantee to cover all the items and quantities of Materials of stage payment or to submit Bank Guarantee each time the stage payment is to be taken or Plant and Materials advance is to be taken.

Office of the……

No. Date:……...

WORK EXPERIENCE CERTIFICATE

To whom so ever it may concern
(Issued for the purpose of Quoting in K-RIDE tenders)

M/s/Sri …….. (Name and address of the contractor) is a working contractor of this unit and was awarded the following work. The relevant details of the work are as under: -

Sl.No	Description	Details
1	Name of work	
2	Acceptance Letter No and Date	
3	Agreement Number, date and name ofthe agency	
4	Agreement value in Rupees (in words and figures)	
5	Due date of completion	
6	Actual date ofcompletion of work	
7	Value of Final Bill if passed (in words)	
8	Work completed but Final measurements not recorded. a) Amount paid so far as in CC bill No.	
9	Work completed. Final measurements recorded with negative variation a) Amount so far paid as in CC bill No.	
10	Work completed. If Final measurements recorded with Positive variation which is not sanctioned yet. a) Original agreement value of Last sanctioned agreement value whichever is lower.	
11	Scope of work (Broad category of works i.e., the name of thework in the agreement on which work is	
12	Details of values of major components/ works executed in thecompleted work.	

Note:
The Certificate to satisfy similar work should be signed by an officer not lower than JAG officer in Railwaysand Executive Engineer rank or equivalent grade in other department of Govt. of India/State Government/PSUs of Government of India / State Undertaking and Competent Authority of Public Listed Company.

Signature :.....

Name of officer..... .....

Designation: .....

Address: .....

Office seal: .....

Phone/FAX No.: .....

Date : ……

MEMORANDUM OF UNDERSTANDING (MOU) FOR PROCUREMENT OF MSDAC SYSTEM FROM RDSO APPROVED SOURCE

*(To be executed in the presence of Notary Public on non-judicial stamp paper of Rs.100/- or appropriate value. The Stamp paper to be in the name of tenderer)***

MOU between M/s……..*(Name of Tenderer)* and M/s……*(Name of RDSO Approved Source)* for the work ……. *(Name of the work)* vide Tender Notice No. ……, Dated: …….. This MOU made and entered into this ……th day of .....*(Name of Month)/……...(Year).*

BETWEEN

M/s. ..…… *(Name of Tenderer)*, hereinafter referred to as M/s. ……

(Tenderer)which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its Parent/Holding Companies, Subsidiaries, Associate Companies, their successors, Successors- in-interest, administrators and permitted assigns of the ONE PART.

AND

M/s……..(Name of RDSO Approved Source) a company registered in India under the Companies Act, 1956 and having its Registered Office at …… India hereinafter referred to as M/s. …… (RDSO Approved Source) which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include its successors, Successors-in-interest and assigns of the OTHER PART

Collectively hereinafter referred to as the PARTIES

WITNESSETH

Whereas K-RIDE (hereinafter referred to as PURCHASER) is desirous of doing the work of…….. (hereafter referred to as PROJECT) for which the PURCHASER has issued a Tender Notice No. ……..., Dated:……. opened on…….th day of ……..... AND Whereas M/s……..(Tenderer) received Letter of Acceptance in the said PROJECT And Whereas M/s. ……(Tenderer), have approached M/s…….. ……..(RDSO Approved Source) to be its Sub-Contractor for the scope of work as mentioned in the Annexure attached alone with this MOU and is part of the MOU mentioned for the PROJECT. AND whereas in the event of M/s *(Tenderer)*, being successfully awarded the PROJECT

by the PURCHASER, then M/s . ……*(Tenderer)*, shall place the order on M/s…….

(RDSO Approved Source) for the PROJECT, as its nominated specialist Subcontractor clearly defining the scope of work along with such mutually agreed terms and conditions as mentioned in M/s. (RDSO Approved Source) offer and based on the mutually agreed prices submitted by M/s. ……..(RDSO Approved Source) to M/s.……...(Tenderer)

NOW THEREFORE IN CONSIDERATION OF THE ABOVE PREMISES THE PARTIES DO AGREE TO ABIDE BY AS FOLLOWS:

Section 9	Bill of Quantities

I N D E X

SL. NO	Multiple Packages	Page No
1.	Bill Of Quantities	321-346

Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

Sl. No.	Description	Amount in Rs.
1	Schedule-A (SOR items)	1,04,41,774.00
2	Schedule-B (Supply)	34,17,662.00
3	Schedule-C (Execution)	33,33,602.00
4	Schedule-D (Supply and installation)	29,82,654.00
5	Schedule-H (Axle counters)	1,09,21,780.00
6	Schedule-J (Supply of cables)	1,79,18,690.00
7	Schedule-K (Supply of LED signals)	14,19,791.00
8	Schedule-L (Misc. items)	1,12,43,967.00
9	Schedule-N (Supply of Relays)	47,80,860.00
10	Schedule-P (RTU and IPS)	73,25,304.00
	Total value of tender in Rupees	**7,37,86,084.00**

Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-A (SOR items)

Sl. No.	SOR No.	Description	Unit	Estimate Rate in Rs.	Quantity	Amount in Rs.
1	(10)101	Excavation of cable trench in all kinds of soil except hard rocky areas including clearing of roots of trees, rocks, bushes etc. to a depth of 1.0 Mtr and to a width of 0.3 Mtr. Laying of cables is not included in this schedule.	Mtr.	61.68	12000	740160.00
2	(10)102	Excavation of cable trench in all kinds of soil except hard rocky areas including clearing of roots of trees, rocks, bushes etc. to a depth of 1.0 Mtr and to a width of 0.5 Mtr. Laying of cables is not included in this schedule.	Mtr.	76.50	500	38250.00
3	(10)105	Excavation of trench along route of existing cable duct, opening the slabs to accommodate additional cable laying, repositioning the slabs removed after the cables are laid and plastering with cement mortar, and refilling the trench by ramming and consolidating it as per the instructions of K-RIDE representatives at site. (Laying of cables is not included in this schedule.) [Cement, river sand and all other miscellaneous materials required for the work shall be supplied by the Contractor].	Mtr.	207.73	100	20773.00
4	(10)106	Excavation of trench to a depth of 1 Mtr. for track crossing of cable, laying of DWC/RCC/PVC pipe with collar/coupling, refilling of trench by ramming and consolidating it as per instructions of K-RIDE representative at site. During excavation of trench it has to be ensured that the excavated soil does not mix with the ballast available. The depth of 1m trench shall be from the bottom of sleepers for track crossing. Laying of cables is not included in this schedule. (Supply of DWC/RCC/PVC pipe with couplers/collars is not included in this schedule.)	Mtr.	370.86	48	17801.00
5	(10)107	Excavation of trench to a depth of 1 Mtr. for road crossing of cables, laying of DWC/ RCC/PVC pipes with collar/ coupling, refilling of trench by ramming and consolidating it and resurfacing it to the original position. Laying of cables is not included in this schedule. (Supply of DWC/RCC/PVC pipes with couplers/ collars is not included in this schedule).	Mtr.	482.08	48	23140.00
6	(10)108	Provision of GI pipes (50/100mm dia) for cable laying with offset at both ends and with couplings over RCC Bridges/ Drainage/ Culverts with concrete masonry supports of size 300mm x 300 mm x 300 mm at an interval of 2 Mtrs. The ends of the pipes shall be closed with brick masonry abutments work so that no cable is exposed, The work shall be carried out as per the instructions of K-RIDE representative at site. (Supply of GI pipes with couplings and laying of cables is not included in this schedule). [Stone jelly of size 20/25mm, bricks, sand, cement and all other miscellaneous materials required for the work shall be supplied by the Contractor].	Mtr.	323.87	600	194322.00
7	(10)109	Provision of GI pipes-(50/100mm dia) for cable laying with offset at both ends and with couplings over girder bridges by fixing on suitable MS Clamps at an interval of 2 Mtr. The ends of the pipes shall be closed with brick masonry abutments work so that no cable is exposed, The work shall be carried out as per the instructions of K-RIDE representative at site. (Supply of GI pipes with couplings and laying of cables is not included in this schedule). [MS angles, flats, bolts and nuts for manufacturing fixing clamps, bricks, river sand , cement and all other miscellaneous required for the work shall be supplied by the Contractor].	Mtr.	383.15	408	156325.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
8	(10)110	Provision of GI pipes (50/100mm dia) for cable laying in hard rocky area with off sets at both ends duly supported by concrete blocks of size 300mm x 300 mm x 300 mm at an interval of 2 Mtrs. The ends of the pipes shall be closed with brick masonry abutments work so that no cable is exposed, The work shall be carried out as per the instructions of K-RIDE representative at site. (Supply of GI pipe with couplings and laying of cables is not included in this schedule. [Stone jelly of size 20/25mm, bricks, sand, cement and all other miscellaneous materials required for the work shall be supplied by the contractor].	Mtr.	299.18	408	122065.00
9	(10)111	Laying of signaling/power/ telecommunication cables as per cable plan in cable trenches, masonry ducts, RCC Pipes, DWC pipes, GI Pipes etc. (Supply of cables is not included in this schedule).	Mtr.	17.50	42000	735000.00
10	(10)115	Refilling of cable trench 1m depth by 0.3 Mtr. width throughout, with earth after laying of cables, and consolidating the trench by ramming and leveling.	Mtr.	14.83	12000	177960.00
11	(10)116	Refilling of cable trench 1m depth by 0.5m width throughout, with earth after laying of cables, and consolidating the trench by ramming and leveling.	Mtr.	18.57	500	9285.00
12	(10)118	Supply of RCC cable markers as per drawing No.CSTE/CN/OFC/1. The lettering on the cable marker shall be "SIG" / "TELE" / "OFC" as per the instructions of K-RIDE representative at site.	No.	296.00	260	76960.00
13	(10)119	Digging of pit to a depth of 800mm of size 300mm X 300mm, casting of concrete foundation of size 300mm X 300mm X 300mm and placing of RCC cable markers on top of the foundation and refilling the pit and consolidating it by ramming. The cable markers shall be provided at an interval of 20 Mtr. within station limits and 50 Mtr. outside station limits throughout the cable route, diversions and also at every track/road crossing.	No.	216.15	260	56199.00
14	(10)120	Excavation of cable coil pit to a size of 1.5Mtr x 1.5Mtr and depth as instructed by K-RIDE representative at site, for coiling the cables in rear of relay rooms/ AFTC huts, apparatus cases etc. The work includes coiling the underground cables, and placing closely one layer of country bricks of size approx. 220mm x 100mm x 60mm breadth wise above the cables to cover all the cables in the cable pit, closing and consolidating the pit by ramming and leveling. [Country bricks of size 220mm x 100mm x 60mm (approximately) shall be supplied by the Contractor]	Cu.Mtr.	913.14	20	18263.00
15	(10)121	Supply of Double walled corrugated pipe - 103.5mm inner dia & 120mm outer dia conforming to specification No. IS 14930(Part 2): 2001 with one coupler for every 6m of pipe as specified in Vol.II of the Tender document.	Mtr.	468.5	96	44976.00
16	(10)122	Supply of GI pipes 50mm dia. 3.65mm thick as specified in Vol.II of the tender document.	Mtr.	610.90	708	432517.00
17	(10)123	Supply of GI pipes 100mm dia. 4.5mm thick as specified in Vol.II of the tender document	Mtr.	1493.06	708	1057086.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
18	(10)201	Excavation of pit, casting concrete foundation and erection of apparatus case full size as per Drg. No.SG/CN/02/6 and fixing of 2 No. of 'E' type locks, one for the front door and another for the back door, fixing of one hard wood shelf plank 37mm thick and painting the apparatus case inside and outside with one coat of red-oxide and two coats of aluminium paints. (Supply of apparatus case is not included in this schedule) [Foundation bolts & nuts, 'E' type locks, cement, river sand, stone jelly of size 20/25 mm, hard wood plank of 37mm thick, paints, varnish, fixing bolts & nuts and all other miscellaneous materials required for the work shall be supplied by the Contractor].	No.	17578.03	30	527341.00
19	(10)202	Excavation of pit, casting concrete foundation and erection of apparatus case half size as per Drg, No.SG/CN/02/7, fixing one 'E' type lock for the front door and latching arrangement for the back door, and fixing of one hardwood shelf plank 37mm thick and painting the apparatus case inside and outside with one coat of red-oxide and two coats of aluminium paints. (Supply of apparatus case is not included in this schedule). [Foundation bolts and nuts, cement, 'E' type locks, river sand, stone jelly of size 20/25mm, 37mm hard wood planks, latching arrangements, paints, varnish, fixing bolts & nuts and all other miscellaneous materials required for the work shall be supplied by the Contractor]	No.	12400.55	50	620028.00
20	(10)208a	Excavation of pit in and around the existing location boxes very carefully without damaging the working cables and shifting and turning the location boxes to clear of the infringement as instructed by the K-RIDE representative at site. The work includes ensuring the safety of the signaling system, releasing the cable coils to give access for shifting/turning the location boxes. Necessary masonry work and earth work in and around the location boxes to the required level shall be done as instructed by the K-RIDE representative at site. If the existing earth connections to the location boxes are disturbed, the earth wires shall be properly re-connected. [All materials required for the work shall be supplied by the Contractor]. (a) Shifting of Apparatus Case (full)	No.	5153.10	16	82450.00
21	(10)208b	Excavation of pit in and around the existing location boxes very carefully without damaging the working cables and shifting and turning the location boxes to clear of the infringement as instructed by the K-RIDE representative at site. The work includes ensuring the safety of the signaling system, releasing the cable coils to give access for shifting/turning the location boxes. Necessary masonry work and earth work in and around the location boxes to the required level shall be done as instructed by the K-RIDE representative at site. If the existing earth connections to the location boxes are disturbed, the earth wires shall be properly re-connected. [All materials required for the work shall be supplied by the Contractor]. (b) Shifting of Apparatus case (half)	No.	3410.93	20	68219.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
22	(10)209	Termination of new main/tail cables on the existing terminals/ fuse blocks in apparatus cases/ battery boxes/ CT boxes/ cable termination racks as per approved circuit diagram. The terminal particulars areto be repainted /corrected on the doors of apparatus cases/ battery boxes/ cable termination boxes and FTOT index board as instructed by K-RIDE representative at site. This work includes closing the opening created for entry of new cables in the apparatus cases with masonry brick work and sealing the bottom of the apparatus cases/ cable termination racks with cable compound. [Paints, wire PVC 3/0.75mm and 16/0.2mm copper, sealing compound, bricks, cement, river sand and all other required miscellaneous materials shall be supplied by the contractor]	Terminal	70.81	140	9913.00
23	(10)210a	Termination of main, tail, Signaling and power cables and internal wiring on terminal/ fuse blocks in new apparatus cases, cable termination boxes and in gate Lodges excluding cable termination rack at relay room. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, fixing of Phynolic synthetic industrial fibre base fine weave cotton fibre board 6mm thick for terminal board to suit each apparatus case, varnishing all teakwood items, fixing of terminals/ fuse blocks on the terminal board, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound. (Supply of PBT terminals and Fuse blocks is not covered in this schedule). [Cement, teak wood cable clamp 50mm x 50mm, base planks 100mm x 25mm, Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, PVC/Nylon sleeves, varnish, paints, bolts, nuts and washers, Non- deteriorating type of fuses of various capacities, Aluminium cable tags, sealing compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor]. Termination on 25/60mm PBT terminals (new location)(Phynolic sheet)	Terminal	165.82	1800	298476.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
24	(10)210b	Termination of main, tail, Signaling and power cables and internal wiring on terminal/ fuse blocks in new apparatus cases, cable termination boxes and in gate Lodges excluding cable termination rack at relay room. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, fixing of Phynolic synthetic industrial fibre base fine weave cotton fibre board 6mm thick for terminal board to suit each apparatus case, varnishing all teakwood items, fixing of terminals/ fuse blocks on the terminal board, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound.(Supply of PBT terminals and Fuse blocks is not covered in this schedule). [Cement, teakwood cable clamp 50mm x 50mm, base planks 100mm x 25mm, Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, PVC/Nylon sleeves, varnish, paints, bolts, nuts and washers, Non- deteriorating type of fuses of various capacities, Aluminium cable tags, sealing compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor]. Termination of main, tail, Signaling and power cables and internal wiring on terminal/ fuse blocks in new apparatus cases, cable termination boxes and in gate Lodges excluding cable termination rack at relay room. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, fixing of Phynolic synthetic industrial fibre base fine weave cotton fibre board 6mm thick for terminal board to suit each apparatus case, varnishing all teakwood items, fixing of terminals/ fuse blocks on the terminal board, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound.(Supply of PBT terminals and Fuse blocks is not covered in this schedule).[Cement, teak wood cable clamp 50mm x 50mm, base planks 100mm x 25mm, Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, PVC/Nylon sleeves, varnish, paints, bolts, nuts and washers, Non- deteriorating type of fuses of various capacities, Aluminium cable tags, sealing compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor]. Termination on PBT fuse block (new location) (Phynolic sheet)	Fuse Block	202.14	80	16171.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
25	(10)211a	Termination of main, tail, Signaling and power cables and internal wiring by fixing additional terminals/ fuse blocks on the existing terminal boards of apparatus cases, cable termination boxes etc. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, varnishing all teakwood items, fixing of terminals/ fuse blocks, on the existing terminal boards, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound. (Supply of PBT terminals and Fuse blocks is not covered in this schedule). [Cement, teakwood cable clamp 50mm x 50mm, base planks 100mm x 25mm, PVC/Nylon sleeves, varnish, paints, bolts, nuts and washers, Non-deteriorating type of fuses of various capacities, Aluminium cable tags, sealing compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor].Termination of cables on 25/60mm PBT terminals (existing location)	Terminal	145.39	80	11631.00
26	(10)211b	Termination of main, tail, Signaling and power cables and internal wiring by fixing additional terminals/ fuse blocks on the existing terminal boards of apparatus cases, cable termination boxes etc. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, varnishing all teakwood items, fixing of terminals/ fuse blocks, on the existing terminal boards, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound. (Supply of PBT terminals and Fuse blocks is not covered in this schedule) [Cement, teak wood cable clamp 50mm x 50mm, base planks 100mm x 25mm, PVC/Nylon sleeves, varnish, paints, bolts, nuts and washers, Non-deteriorating type of fuses of various capacities, Aluminium cable tags, sealing compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor].Termination of cables on PBT fuse block (existing location)	Fuse block	181.70	16	2907.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
27	(10)212a	Manufacture and supply of M.S. relay frames of suitable size to hold up to 4/ 8/ 12/ 20 relays /plug in type HMU as required by K-RIDEs and fixing them in apparatus cases for all types of signal control circuits, LC gate control circuit and Point control circuits, fixing of plug boards, relays, resistors and electrolytic condensers on Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, wiring and termination as per approved circuit diagram and painting the particulars. (Supply of all types of relays, plug boards, connectors, retaining clips and plug in type HMU is not covered in this schedule). [Wire PVC copper, 3/0.75mm and 16/0.2mm copper, Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036- 1995 - Type F5, for fixing resistors and condensers, MS flats 25mm x 6mm brass bolts and nuts, paints, soldering materials, resistors, condensers and all other miscellaneous materials required for the work shall be supplied by the contractor]. (a) Wiring of Signal/ point/ LC control circuit (up to 4 relays/Plug in type HMU)	Set	4758.39	30	142752.00
28	(10)213a	Painting of existing apparatus cases without disturbing the terminations and equipments inside. The work involves scraping of old paint, applying one coat of Red oxide and two coats of Aluminium paint on the inside and outside the apparatus cases, and painting of termination and equipment particulars on the doors of the apparatus cases, as instructed by K-RIDE representative at site. [Aluminium paint, red-oxide and all other miscellaneous materials required for the work shall be supplied by the Contractor] (a) Painting of existing Apparatus case - Full size	No.	2276.18	14	31867.00
29	(10)213b	Painting of existing apparatus cases without disturbing the terminations and equipments inside. The work involves scraping of old paint, applying one coat of Red oxide and two coats of Aluminium paint on the inside and outside the apparatus cases, and painting of termination and equipment particulars on the doors of the apparatus cases, as instructed by K-RIDE representative at site. [Aluminium paint, red-oxide and all other miscellaneous materials required for the work shall be supplied by the Contractor]. (b) Painting of existing Apparatus case - Half size.	No.	2177.39	14	30483.00
30	(10)215	Painting of existing colour light Signals as per standard practice. The work involves scraping of old paint, applying one coat of Red oxide and two coats of Aluminium/ enamel paint on the Signals - complete as instructed by K-RIDE representative at site. [Aluminium paint, red-oxide and all other miscellaneous materials required for the work shall be supplied by the Contractor].	No.	2349.60	14	32894.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
31	(10)216a	Alterations to painted termination/wiring particulars of functions in the existing apparatus cases, cable termination boxes etc., on the PVC/nylon sleeves and painting of new nomenclature on the existing signaling gadgets. This work includes carrying out alterations of particulars on the inner side of the doors of apparatus cases, re-numbering of apparatus cases and cable termination boxes. [Paints and all other miscellaneous materials required for the work shall be supplied by the Contractor]. (a)Alteration to painting particulars (Apparatus case - Full size)	No.	1575.03	14	22050.00
32	(10)216b	Alterations to painted termination/wiring particulars of functions in the existing apparatus cases, cable termination boxes, etc., on the PVC/nylon sleeves and painting of new nomenclature on the existing signaling gadgets. This work includes carrying out alterations of particulars on the inner side of the doors of apparatus cases, re-numbering of apparatus cases and cable termination boxes. [Paints and all other miscellaneous materials required for the work shall be supplied by the Contractor]. (b) Alteration to painting particulars (Apparatus Case - half size)	No.	826.10	14	11565.00
33	(10)218	Excavation of pit, casting concrete foundation as per Drg.No.SG/CN/02/9 using metallic templates, for erection of colour light signals up to 4 aspects. [Foundation bolts, cement, river sand, stone jelly of size 20/25mm dia and all other miscellaneous materials required for the work shall be supplied by the Contractor].	No.	8914.60	32	285267.00
34	(10)219	Erection of surface base, signal pole, mounting of colour light signal up to 4 aspects complete on Signal pole/ Off-set bracket, (for LED/ filament bulbs) with lenses, triple pole lamp holder, filament switching units, CLS transformer, current regulators (whichever is applicable), fixing of ladder with platform complete and concreting of ladder shoe, fixing of number plates, marker board, lens guard, fixing of speed limit board wherever necessary, termination of tail cables, wiring of signal unit with PVC wire 3/0.75mm copper, provision of EWS locks, and painting of one coat of red oxide and two coats of aluminium/ enamel paints. When the aspect is fixed on Offset bracket using 'U' bolts and nuts, a through bolt shall be provided by drilling a hole in the signal pole to prevent the offset bracket from sliding down. (Supply of surface base, Offset bracket, CLS pole, CLS aspects complete, ladder with shoes and platform, Speed limit board, LED aspects, current regulators, lamp holders, lamps, filament switching unit and CLS transformer is not covered in this schedule). ['U' bolts and nuts, through bolts and nuts, cement, stone jelly 20/25mm dia, river sand, Signal Collar Rings, wire PVC 3/0.75mm copper, lens-guard, all fixing bolts and nuts, lead wool, paints PVC/Nylon sleeves, enameled number plates. enameled marker boards, EWS locks, and all other miscellaneous materials for the work shall be supplied by the Contractor].	No.	9792.14	32	313348.00
35	(10)227	Excavation of pit in and around the existing signals very carefully without causing damage to the working cables and shifting the Signals along with the concrete foundations for approximately 1m to a nearby position so as to clear the infringement from the nearest track centre as instructed by K-RIDE representative at site. The existing cable coils shall be released carefully so as to give access for shifting. Necessary masonry work and earth work shall be carried out in and aroundthe signals after shifting as instructed by K-RIDE representative at site. [All materials required for the work shall be supplied by the Contractor].	Mtr.	4612.43	8	36899.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
36	(10)228	Removal of existing CLS units, fixing of new CLS units with LED aspects/ lamps, holders etc., up to four aspects, directly or using off set brackets duly drilling holes on the signal poles, provision of EWS locks wherever necessary, termination of tail cables and wiring using wire PVC3/0.75mm copper and painting of aspect. The new tail cables shall be taken through the signal poles and the unwanted cables duly released. (Supply of CLS unit with LED aspects/ lamps holders, CLS transformers is not included in this schedule.) [EWS locks, Wire PVC 3/0.75mm copper lenses guard, wire netting arrangements, paints and all other miscellaneous materials shall be supplied by the Contractor].	No.	10678.67	8	85429.00
37	(10)229	Manufacture and supply of Enameled Number plates as per drawing No.TY/08/2008 with fixing arrangements and fixing them on the existing Signals as per the instructions of K-RIDE representative at site. [Enameled number plates with fixing arrangements with bolts and nuts shall be supplied by the Contractor].	No.	603.42	8	4827.00
38	(10)230	Supply and provision of Screening arrangement for Signals in RE area as per standard practice. The work comprises of providing MS angle frame and wire mesh in order to avoid close proximity of OHE wires. The work also includes provision of earthing wire using 4 SWG GI wires from the screening arrangement up to surface base as per the instructions of KRIDE representative at site.[All materials required for this work shall be supplied by the Contractor].	No.	1809.548	4	7238.00
39	(10)234	Provision of earth electrodes as per drawing No.SG/SN/02/13 and earthing of metallic sheath and armour of all cables in all apparatus cases, relay room, equipment room, SM's room for block and control, and earthing of all equipments in apparatus cases, power room, relay rack, cable termination rack, control panel, signals, lever frames with MS flat 35mm X 6mm/19c cable (MS flat for closer by areas and MS flat/19c cable combination for farther areas) as per the instructions of K-RIDE representative at site. The work includes painting of earth resistance value on the earth pit. (Supply of 19C cable is not covered in the scope of this schedule). [MS flat for earthing 35mm X 6mm, cement, GI earth electrodes, common salt, charcoal, country bricks, river sand, soldering materials and all other miscellaneous materials required for the work shall be supplied by the Contractor]	No.	3202.22	80	256178.00
40	(10)238a	Supply of Colour Light Signal pole 140mm dia, 4.6 Mtr/ 3.6 Mtr. tall with necessary inspection as per specification/ drawing/ description enclosed in this document. (a) Supply of Colour Light Signal pole (4.6 Mtr)	No.	5906.04	2	11812.00
41	(10)238b	Supply of Colour Light Signal pole 140mm dia, 4.6 Mtr./ 3.6 Mtr. tall with necessary inspection as per specification/ drawing/ description enclosed in this document. (b) Supply of Colour Light Signal pole (3.6m)	No.	5293.72	30	158812.00
42	(10)239	Supply of surface base to suit CLS Signal pole 140mm dia. with necessary inspection as per specification/ drawing/ description enclosed in this document.	No.	7330.04	32	234561.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
43	(10)240a	Supply of ladder with platform and shoes to suit CLS pole 4.6 Mtr/ 3.6 Mtr. tall, with necessary inspection as per specification/ drawing/ description enclosed in this document. (a) Supply of ladder with platform and shoes for 4.6 Mtr. CLS pole	No.	5701.34	2	11403.00
44	(10)240b	Supply of ladder with platform and shoes to suit CLS pole 4.6 Mtr/ 3.6 Mtr. tall, with necessary inspection as per specification/ drawing/ description enclosed in this document. (b) Supply of ladder with platform and shoes for 3.6 Mtr. CLS pole	No.	5498.42	30	164953.00
45	(10)243a	Supply of Colour Light Signal Multi Unit type - complete for 4/ 3/ 2 aspect with mounting socket, with necessary inspection as per specification/ drawing/ description enclosed in this document. (b) Supply of Colour Light Signal unit - 4 aspect	No.	22399.52	12	268794.00
46	(10)243b	Supply of Colour Light Signal Multi Unit type - complete for 4/ 3/ 2 aspect with mounting socket, with necessary inspection as per specification/ drawing/ description enclosed in this document. (b) Supply of Colour Light Signal unit - 3 aspect	No.	18326.88	4	73308.00
47	(10)243c	Supply of Colour Light Signal Multi Unit type - complete for 4/ 3/ 2 aspect with mounting socket, with necessary inspection as per specification/ drawing/ description enclosed in this document. (c)Supply of Colour Light Signal unit - 2 aspect	Nos.	15272.40	10	152724.00
48	(10)249a	Supply of PBT terminals 25mm/ 60mm centre and PBT Fuse blocks with necessary inspection as per specification/ drawing/ description enclosed in this document. (a) Supply of PBT terminal - 25mm centre	No.	78.32	4500	352440.00
49	(10)249b	Supply of PBT terminals 25mm/ 60mm centre and PBT Fuse blocks with necessary inspection as per specification/ drawing/ description enclosed in this document. (b) Supply of PBT terminal - 60mm centre	No.	106.80	250	26700.00
50	(10)251a	Supply of Apparatus case (full/ half/ quarter size) to suit South western Railway standard with necessary inspection as per specification/ drawing/ description enclosed in this document: (a) Supply of Apparatus case - Full size.	No.	21381.36	16	342102.00
51	(10)251b	Supply of Apparatus Cases (full/ half/ quarter size) to suit South Western Railway standard with necessary inspection as per specification/ drawing/ description enclosed in this document: (b) Supply of Apparatus case - Half size.	No.	15272.40	20	305448.00
52	(10)252	Supply of electronic time delay units (120/60 sec.) with plug boards, connectors and retaining clips with necessary inspection as per RDSO specification/ drawing/ description enclosed in this document.	No.	3939.14	30	118174.00
53	(10)253	Supply of lamp proving relays for LED aspects with plug boards, connectors and retaining clips with necessary inspection as per RDSO specification/ drawing/description enclosed in this document.	No.	6391.98	84	536926.00
54	(10)257	Supply of Electric Key Transmitter - rotary type of required ward No. with keys, with necessary inspection as per specification/ drawing/ description enclosed in this document.	No.	7616.62	14	106633.00

SCHEDULE-A (SOR items)						
Sl. No.	**SOR No.**	**Description**	**Unit**	**Estimate Rate in Rs.**	**Quantity**	**Amount in Rs.**
55	(10)306	Carrying out alterations to the existing relays in the relay racks/ apparatus cases as per the approved circuit diagram using wire PVC 16/0.2mm copper. The work includes painting alterations and releasing the unwanted wires carefully without disturbing the existing wiring. [Wire PVC 16/0.2mm copper, soldering materials, bunching threads, condensers, resistances and teakwood plank for fixing them and all other miscellaneous materials required for the work shall be supplied by the Contractor].	Relay	669.35	35	23427.00
56	(10)336	Supply and provision of Rubber mat of not less than 6mm thick and with an insulation to withstand 650VAC, on the floor of relay room etc at places as indicated by K-RIDE representative at site.	Sq. Feet	139.37	240	33449.00
57	(10)412	Supply and installation of teak wood glass fronted box of size 300mm x 600mm x 75mm with hooks to keep various keys with description engraved on the tags. [TW Glass fronted box of size 300mm x 600mm x 75mm with built in lock, hooks, engraved tags and all other miscellaneous materials required for the work shall be supplied by the Contractor].	No.	7221.46	8	57772.00
58	(10)414	Fixing of EKT instrument with (or) without crank handle or on suitable fixtures at station/ apparatus case, provision of economiser push switch with locking facility, wiring with wire PVC 16/0.2mm copper, provision of teakwood terminal box covered with decolum along with locking facility and painting. (Supply of electric key transmitter and crank handles is not covered in this schedule). [wire PVC 16/0.2mm copper, wire wound resistance, decolum covered terminal box with locking facility by using 25mm thick teakwood, bolts and nuts, paints, push switches, padlocks and other miscellaneous materials required for this work shall be supplied by the contractor]	No.	5239.88	14	73358.00
59	(10)417	Supply and installation of magneto telephone handle type and supply and wiring of Ni-cad power pack 4V- 2.2AH with charger to work on 110VAC, at the station house, LC Gate and top points. [Magneto telephone handle type with Ni-cad power pack 4V-2.2AH with charger to work on 110VAC, wire PVC 16/0.2mm copper, and all other miscellaneous materials shall be supplied by the Contractor.]	No.	10996.84	14	153956.00
60	(10)420	Supply and installation of signal post telephone with facility of paging and talk-back including voice communication equipment with suitable switching arrangement at the Signal post and at SM's room as per specification enclosed in this document. This includes drawal of tail cable through GI pipe 25mm dia and 2 mtrs long duly clamped to Signal post with bend as required at site, termination of tail cable at one end in the apparatus case and other end in the console. In the SM's room, console shall be fixed on a table top. The wiring shall be done using wire PVC16/0.2mm copper. [Talk-back equipment complete including housing box, wire PVC 16/0.20mm and all other miscellaneous materials required for the work shall be supplied by the Contractor]	No.	16634.10	2	33268.00
61	(10)426	Supply of 2 pin socket - 5A with switch, fixing the same on the hardwood plank available and extending the 110VAC using wire PVC 3/0.75mm copper, in all the apparatus cases, as per the instructions of K-RIDE representative at site. [2 pin socket - 5A with switch, wire PVC 3/0.75mm copper and all other miscellaneous materials required for the work shall be supplied by the Contractor]	No.	708.44	16	11335.00

SCHEDULE-A (SOR items)

Sl. No.	SOR No.	Description	Unit	Estimate Rate in Rs.	Quantity	Amount in Rs.
62	(10)507	Releasing of existing apparatus cases (Full/ Half/ Quarter size) without damage after releasing the shelf planks, Terminal blocks, Fuse Blocks, Terminal Boards, Relays of all types, EKTs, Secondary Cells, power equipments, 'E' type locks etc., and breaking the concrete foundation. After releasing, the resultant pits are to be closed and consolidated by ramming and levelling. The released materials shall be accounted and stacked at a place as instructed by K-RIDE representative at site.	No.	2892.95	60	173577.00
63	(10)510	Dismantling and releasing of existing colour light signals complete (upto 4 aspects) with or without Route Indicators, calling on signals, shunt signals etc., carefully without any damage to the gadgets, accounting and stacking them neatly at a place as instructed by K-RIDE representative at site. The work includes breaking the concrete foundation, closing the resultant pit and resurfacing it by ramming and levelling.	No.	2966.37	30	88991.00
64	(10)521b	Transportation of Signalling materials by road as per the instructions of K-RIDE representative at site. The work also includes loading and unloading of the aterials. (b) Transportation more than 100 Kms.	Ton Km.	13.39	6400	85696.00
65	(10)522	Engaging mechanical excavators like JCB or other machineries for regarding and levelling the formation, dismantling any infringing structures, clearing and removing debris etc., with all leads and lifts etc., complete and as per the instruction of K-RIDE representative at site.	Hours	1157.00	20	23140.00
					Schedule-A total in Rupees	**1,04,41,774.00**

Tenderer / Contractor Percentage (At par / Below / Above) in figure	
Tenderer / Contractor Percentage (At par / Below / Above) in words	

Please ensure there are no over writing, in case of any discrepency in figures and words, words will be taken for consideration.

Seal & Signature of the Bidder

Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-B (Supply)

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
1	Cable termination racks size 880mm X 2 Mtrs. made out of 50mm X 50mm X 6mm thick MS angle powder coated with stainless steel nuts and bolts for fixing the racks with suitable holes for hylem sheet complete as per standard practice with tripod bases and reel insulators. Cable ladder of 400mm x 2000mm be provided at both sides with angle size 40mm x 4mm x 5mm with supporting flate of size 25mm x 5mm.	No.	8846.50	8	70772.00
2	Two way relay rack universal type as per drg.no.SK/SC/CN/51/94 with MS frame to suit 'Q' series relays scaffolding, Powder coated with stainless steel nuts and bolts for fixing the racks and cable ladder made out of MS angle 65mm X 65mm X 6mm for fixing the racks. Supporting angles, frame mounting triangle base with J bolts and insulation of required numbers complete to suit QN1/K-50 prewired tag block.	No.	17743.70	8	141950.00
3	Supply of Non-deteriorating (ND) type of fuse holders for Railway signalling, rated voltage 240 AC/DC to Specn. No. IRS S.78/92 (IRS-S-78/97 tentative) IS:13703 (part 2/sec2):1993 suitable for E1 fuse 20Amps SC-20 Holder Safe Clip / knife edge type size E1 (R-SS) amp. fuse block for fuse catridge.	No.	263.90	160	42224.00
4	Non-Deteriorating type of fuse holders and fuse links of following rating. (b) Fuse link 20 Amps IRS Spec.S.78/92 or latest.	No.	29.34	40	1174.00
5	Non-Deteriorating type of fuse holders and fuse links of following rating. (c) Fuse Link 10 Amps IRS Spec.S.78/92 or latest.	No.	26.98	40	1079.00
6	Non-Deteriorating type of fuse holders and fuse links of following rating. (c) Fuse Link 2 Amps IRS Spec.S.78/92 or latest.	No.	22.97	80	1838.00
7	High Density Polyethylene Pipes (HDPE) of 110 mm outer Dia, 10 mm Wall thickness, along with one coupler for every 6 Mtrs. as per specification No. IS 4984: 2016 with latest ammendments and Material Grade:PE 80.	Mtr.	877.50	500	438750.00

SCHEDULE-B (Supply)					
Sl. No.	**Description**	**Unit**	**Estimate rate in Rs.**	**Quantity**	**Amount in Rs.**
8	Basic material to construct unit maintenance free earth as per RDSO Spec No. RDSO/ SPN/197/2008 or latest and as per Technical specification.	Set	29614.00	32	947648.00
9	Flex printing with Sun board fixing of various drawing with colour (Power board diagram, Relay index chart, Station rule diagram, FTOT particulars etc.,), as per instructions of site in-charge Railway representive.	Sq feet	583.70	160	93392.00
10	Printed and bounded registers including maintanance registers for SSDAC, point machine,track circuit etc. (100 Pages each of 75 gsm paper)	No.	283.40	40	11336.00
11	Permanently Lubricated High Density Polyethylene duct (PLB-HDPE), 40/33 mm Dia, along with end cap, end plug, Cable sealing plug and couplers, as per RDSO/SPN/TC/45/2013 Rev.2 (upto Amdt.2) or latest.	Km.	115837.80	13	1505891.00
12	Supply of jointing kit conforming to RDSO specificaiton No.IRS-TC 77/2006 Revision1 or latest for quad cable.	No.	5058.30	25	126458.00
13	20 pair CT box with disconnecting terminals of Wago/Pheonix/Elmex make or similar.	No.	4393.70	8	35150.00
				Schedule-B total in Rupees	**34,17,662.00**

Tenderer / Contractor Percentage (At par / Below / Above) in figure.	
Tenderer / Contractor Percentage (At par / Below / Above) in words.	

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Seal & Signature of the Bidder

Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-C (Execution)

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
1	Erection of CT rack with scaffolding suitably concreting tri-pod bases and reel insulators with "J" bolts and nuts. Tripod and other supporings are to be painted in 2 coats with enamel.	No.	6221.02	8	49768.00
2	Erection of two way relay rack with scaffolding suitably concreting tri-pod bases and reel insulators with "J" bolts and nuts. Tripod and other supporings are to be painted in 2 coats with enamel.	No.	762.54	8	6100.00
3	Track crossing by Horizontal boring method based on RDSO Report No. BS - 105. This also includes insertion of HDPE Pipe of 110mm Outer dia in the Bore drilled.(Supply of HDPE Pipe is not included).	Mtr.	3214.88	500	1607440.00
4	Termination of main, tail, Signalling and power cables and internal wiring on terminal/ fuse blocks in cable termination Rack at relay room. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, fixing of hylem sheet 10 mm thick for terminal board, varnishing all teakwood items, fixing of terminals/ fuse blocks on the terminal board, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves. After terminations are over, cable entry at the bottom shall be closed with , cement plastered, the inter-space filled with sand upto base level and the bottom surface shall be sealed with sealing compound. Cable armour to be soldered to earth. (Supply of cable termination racks is not included in this schedule). [All bolts and nuts with washers, hylum Sheet 10 mm Thick, cement, sand, stone jelly, Teak wood base, paints and all other miscellaneous materials required for the work shall be supplied by the contractor] a. Termination on 25/60mm PBT terminals	Per Terminal	204.48	2000	408960.00

SCHEDULE-C (Execution)					
Sl. No.	**Description**	**Unit**	**Estimate rate in Rs.**	**Quantity**	**Amount in Rs.**
5	Concreting of cable laid in the trench or GI pipe/DWC/HDPE pipe in which cable is already laid to a size of 300*300mm with 1:3:6 mortar. (All the matetrials required for the work should be supplied by the contractor)	RMT	702.90	450	316305.00
6	Installation of unit maintenance free earth pit as per RDSO specification No.RDSO/ SPN/197/ 2008 or latest and as per Technical Specification.	Set	17507.18	32	560230.00
7	Strengthening of foundations of signals, Full/half location boxes, by carrying out the earth work around the foundation, ramming of the earth, carrying out masonry work from bottom of earth work using country stones and cement masonry to prevent the earth from slipping down the bank.	No.	6583.12	34	223826.00
8	Provision of normal joint of heat shrinkable type complete for 6 quad cable. After the jointing the through cable has to be tested for insulation resistance and loop resistance in presence of K-RIDE Engineer and in case of any defects the jointing has to be done at free of cost by the contractor. [Heat shrinkable jointing kit conforming to RDSO specificaiton No.IRS-TC 77/2006 covered in the supply portion has to be used for this purpose. The Contractor should supply all other small items free of cost which are required for making a joint. Only gas blower to be used for blowing].	No.	5045.26	25	126132.00
9	Fixing of 20 pair CT box with disconnecting terminals of Wago/Phonix/v Elmex make or similar and termination of cable at the station/ LC gates etc.This includes fixing of Quad/PIJF cables and CT box on the wall.	No.	4355.14	8	34841.00
				Schedule-C total in Rupees	**33,33,602.00**
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Tenderer / Contractor Percentage (At par / Below / Above) in words.					
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Seal & Signature of the Bidder					

Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-D (Supply and installation)

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
1	Supply and fixing of retro-reflective type Calling-On/STOP/BSLB/Legend boards as per practice & SEM .	No.	7616.16	4	30465.00
2	Supply and placing of Polyolefin cable channel of size, width 240/340 mm, height 155/230 internal/external, length 1 Mtr produced of polyolefin with fire protection class k-1 in accordance with DIN-53438 Part II for laying Signalling/Telecom cables, channel attachable to each other with male-female swallow tail connectors and having suitable detachable cover.	Mtr.	3100.83	500	1550415.00
3	Supply and laying of split DWC pipe of 120/103 mm dia, 2 Mtr. long in already dug cable trenches. The unit of RMT means two split pipes of 1 Mtr. each. Material shall be supplied as per specification RDSO/SPN/204/2011 or latest	RMT.	349.32	4000	1397280.00
4	Supply and Fixing of PVC casing and capping/PVC pipe of minimum 25mm size or higher as per requirement at site on the wall/floor etc., using bends, coupler and T joints and flexible pipe wherever necessary with fixture in the OFC room from equipment rack to common termination and from OFC room to SM room/Reservation office /Data logger/FOIS room etc. (All required material for fixing to be arranged by the contractor)	Mtr.	56.18	80	4494.00
				Schedule-D total in Rupees	**29,82,654.00**

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Tenderer / Contractor Percentage (At par / Below / Above) in words.	

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Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division..

SCHEDULE-H

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
1	Supply of Multi section Digital Axle counter (MSDAC) as per RDSO specification no.RDSO/SPN/176/2013 version.3.0 with latest amendments. a) The tenderer shall design the scheme for provision of required number of Evaluators, track side junction Boxes, detection points etc. b) MSDAC application in the yard shall be in place of track circuits with single detection, IB application shall be with dual detection. (c) Length of cable required for each track deviced-5/10/15 mtrs.	DP	672821.00	16	10765136.00
2	Installation, design, wiring, testing and commissioning of Multi section digital axle counter outdoor and indoor work.	DP	9790.22	16	156644.00
				Schedule-H total in Rupees.	**1,09,21,780.00**

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Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-J

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
1	Supply of Railway signalling cable 2 core X 2.5 sq.mm. confirming to spec. no. IRS:S-63/2014 Rev 4.0 with latest ammendment if any.	Mtr.	109.10	1000	109100.00
2	Supply of Railway signalling cable 12 core X 1.5 sq.mm. confirming to spec. no. IRS:S-63/2014 Rev 4.0 with latest ammendment if any.	Mtr.	268.00	4000	1072000.00
3	Supply of Railway signalling cable 19 core X 1.5 sq.mm. confirming to spec. no. IRS:S-63/2014 Rev 4.0 with latest ammendment if any.	Mtr.	373.50	10000	3735000.00
4	Supply of Railway signaling cable 30 core x 1.5 sq.mm confirming to spec. no. IRS:S-63/2014 Rev 4.0 with latest ammendment if any.	Mtr.	528.60	10000	5286000.00
5	Supply of PVC insulated steel strip armoured, unscreened, copper conductor of size 2 core X 10 sqmm power cable straned 7 x 1.4 mm for confirming to spec. no. IRS:S-63-2014 Rev 4.0 & IS:1554 (Part-1) with latest ammendment if any.	Mtr.	211.81	3000	635430.00
6	Supply of Railway Underground Jelly filled, 0.9mm dia, 6 Quad cable as per Spec. No. TC/30/2005 version-1 with Ammendment 4 or latest in any.	Mtr.	416.55	13000	5415150.00
7	Supply PIJF Polythene insulated polythene sheathed jelly filled telephone cable 10 pair X 0.63mm as per Spec. No. IRS:TC-41/97 ammendment No. 1 or latest if any.	Mtr.	102.86	1000	102860.00

SCHEDULE-J

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
8	Supply of 24 fibre armoured Optic Fibre Cable as per Spec. No.IRS: TC.55/2006 REV.1 with Ammendment 1.1 or latest in any.	Mtr.	104.21	15000	1563150.00
				Schedule-J total in Rupees	**1,79,18,690.00**
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Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-K

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
1	Supply of LED Signal unit for Red aspect integrated type as per spec. No. RDSO/SPN/199/2010 Rev 1.0 or latest.	No.	13394.25	20	267885.00
2	Supply of LED Signal unit for Yellow aspect integrated type as per spec. No. RDSO/SPN/199/2010 Rev 1.0 or latest.	No.	13394.25	50	669713.00
3	Supply of LED Signal unit for Green aspect integrated type as per spec. No. RDSO/SPN/199/2010 Rev 1.0 or latest.	No.	13394.25	36	482193.00
				Schedule-K total in Rupees	**14,19,791.00**

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Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-L

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
1	Video recording of trench which is made for cable laying shall be submitted in soft copy in USB pen drive.	Km.	3119.00	8	24952.00
2	Supply and Laying of PVC warning tape colour orange, width of 250mm (10") by printing with black letters 'Indian Railway Signal/Telecom/OFC Cable' on both sides.	Km.	42600.00	10	426000.00
3	Supply and provision of MS cable tray of thickness 1.6 mm, including top cover for closing, with all required miscellenous materials for installation. Installation to be carried out as per the instructions of site engineer. MS cable tray including cover should be powder coated with Siemens gray color. -MS cable tray - 250 * 100	RMT.	2806.00	10	28060.00
4	Complete indoor work installation, wiring and commissioning for IBS/ Mid Section Interlocked LC Gate.	IBS / LC	619582.87	8	4956663.00
5	Painting, letter writing, numbering of terminal particulars over indoor and outdoor gears at IBS/ Mid Section Interlocked LC Gate as per Railway practice.	IBS / LC	14254.72	8	114038.00
6	Supply of gate indication cum operationg pannel for LC gate etc - Domino type	No.	20000.00	7	140000.00
7	Manufactoring and supply of Road on both sides of the level crossing gates Audio and Visual warning consisting of embedded based LC gate control, signal post 210/220mm dia, Red, Yellow signal with High bright day light LEDs current control, Hooter with programmable sound Amplified card and electronic flashing Housed in a alluminium encloser mounted on a post. this system should work on 24v DC. 2- Nos of Audio & visual warning system	Set	135000.00	7	945000.00
8	Installation and commissioning of Road warning signals	Per gate	10000.00	7	70000.00
9	Installation, wiring, testing and commisioning of data logger at stations/ Centralised systems at Test Room/SBC.	No.	29283.53	8	234268.00
10	Installation, wiring, testing and commissioning of complete Integrated Power Supply (IPS) systems including supply of battery wire, fabrication and fixing of fuse/termination board etc.	No.	274583.14	8	2196665.00
11	Design and Drawing for complete indoor signalling work for IBS/ Mid Section Interlocked LC Gate as per Railway practice.	IBS / LC	93128.23	8	745026.00
12	Design and development of outdoor drawings for outdoor signalling work for IBS/ Mid Section Interlocked LC Gate as per Railway practice.	IBS / LC	50637.05	8	405096.00
13	Laying of PLB HDPE duct, 40/33 mm Dia, in the trenches and in the protective works already provided including in HDD portion and supply pulling of Nylone rope through it at diffeent places as per direction of engineerin charge or site engineer.	Km.	10360.00	13	134680.00
14	Duct Integrity test for PLB HDPE duct, 40/33 mm Dia, as per specification.	Km.	1287.00	13	16731.00
15	Blowing of OFC cable (24F as per RDSO specn.TC 55-2006 Rev.1 with amendment 1.1) in already laid PLB HDPE duct, 40/33mm dia, by using blowing machine, providing the sufficient loops in loop/joint chambers and other associated works.	Km.	14793.00	15	221895.00

SCHEDULE-L					
Sl. No.	**Description**	**Unit**	**Estimate rate in Rs.**	**Quantity**	**Amount in Rs.**
16	Supply and Provision of Mid-Section OFC Joint including splicing (24 Fibre) inside already prepared jointing pit. This does not include provision of Joint chamber, top plate and back filling. The joint enclosure shall be as recommended in the Technical specification.	No.	17837.67	6	107026.00
17	Supply and provision of joint chamber of 0.9 Meter dia.of 60cm height with 2 piece cover on top and bottom cover with holes for drainage.This includes excavation of Jointing pit 1.2 mtr.,sand filling inside the chamber,backfilling, ramming of the trench after cable laying and consolidation of soil as well as disposal of soil as per plan as advised by site engineer.	No.	7541.93	15	113129.00
18	Fabrication, supply and provision of cable transit frame 4X1 with packing space of 120x120mm and sealing cable dia. Of 3-14.5mm=36nos., 13.5-25.0mm=16nos., 25.0-34.5mm=9nos. and 34.5-55.0mm=4nos.	set	32709.60	10	327096.00
19	Supply and provision of RFCS 12 for cabinet seal.	Set	3764.20	10	37642.00
				Schedule-L total in Rupees	**1,12,43,967.00**
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Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-N

Sl. No.	Description	Unit	Estimated rate in Rs.	Quantity	Amount in Rs.
1	Supply of Relay DC QN1 8F/8B plug in type Metal to corbon with plug board, retaining clip and connectors confirming to BRS - 930A & as per RDSO Spec No. IRS- S-34, IRS -S-23 or latest (Code:ABCDE) - (QN1 Contact configuration 8F/8B)	No.	4606.00	450	2072700.00
2	Supply of Relay AC immune plug type QNA1 8F/8B Metal to corbon with plug board, retaining clip and connectors confirming to BRS - 931A & as per RDSO Spec No. IRS- S-34, IRS -S-23, IRS-S-60/78 or latest. (QNA1 Contact configuration 8F/8B)	No.	4807.67	450	2163452.00
3	Supply of Relay AC immunise DC plugin 24V DC, 1000 ohms, 6F/6B complete with plug board, retaing clips and connectors etc. to BRS- 931A, IRS-S-34/68, IRS-S-23/86 and IRS- S-60 QNA1K RDSO/SPN/84 version 2.0 along with STs/E/ Relays / UEA/PI dated	No.	5447.08	100	544708.00
				Schedule-N total in Rupees	**47,80,860.00**

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Name of the work: Signaling works at one IBS and 7 LC Gates in connection with doubling of Yesvantpur - Channsandra section of Bangalore Division.

SCHEDULE-P

Sl. No.	Description	Unit	Estimate rate in Rs.	Quantity	Amount in Rs.
1	Supply of Remote Terminal Unit (RTUs) in 128 digital and 16 Anog Inputs.	No.	209876.50	8	1679012.00
2	Supply of Integrated Power Supply (IPS) SMPS based with battery set of 200AH (VRLA) suitable for midsection LC gate/IBS.	No.	705786.55	8	5646292.00
				Schedule-P total in Rupees	**73,25,304.00**

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