



CONSTRUCTION OF NEW B.G. ELECTRIFIED RAILWAY SINGLE LINE OF EAST CORRIDOR-II BETWEEN URGHA [KM-0] & DHARAMJAYGARH [KM-62] IN THE STATE OF CHHATTISGARH OVER SOUTH EAST CENTRAL RAILWAY.

Tender No:- IRCON/2059/CGRP/e-TENDER/25-26/ Urga-Dharamjaigarh /

Dated:26.05.2026

e-PROCUREMENT DOCUMENTS

(Limited Tender)

Civil Works Including Earthwork in excavation and filling for Railway Formation, RCC drain work, Minor Bridges, RUBs and ROB's for the Urga to Dharamjaigarh (0 Km to 62 Km) including RoR line (6.2 km) in connection with the construction of New BG Electrified Single Railway Line Chhattisgarh East Rail Corridor Phase-II From Urga (Km 0) To Dharamjaigarh (Km 62) including RoR line (Km 0 to 6.2) via Bhaisma, Dongaama, Dhinara, Dhaskamunda, Hati and Khadgaon stations in the state of Chhattisgarh over South East Central Railway.

Technical Bid

- **E-Procurement Notice**
- **Form of Bid**
- **Instruction to Tenderers**
- **Appendix to Tender**
- **Special condition of contract**
- **General Conditions of Contract**
- **Technical Specifications**
- **Bill of Quantity**

MAY 2026

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SECTION - I
e-Procurement Notice

**IRCON INTERNATIONAL LIMITED****NAVRATNA COMPANY****(A Govt. of India Undertaking)**

Tender No:- IRCON/2059/CGRP/e-TENDER/25-26/Urga-Dharamjaigarh/

Dated:26.05.2026

e-PROCUREMENT NOTICE

(Limited Tender)

Note: “This notice is being published for information only and is not an open invitation to quote in this limited tender. Participation in this tender is by invitation only and is limited to the selected Procuring Entity’s enlisted contractors. Unsolicited offers are liable to be ignored.”

1.0 Executive Director/Projects, IRCON INTERNATIONAL LIMITED, C-4, District Centre, Saket, New Delhi, Email: surender.singh@ircon.org, Tel: PHONE: +91-11-26530455, Mob: +91-9560595025 for and on behalf of **Chhattisgarh East Railway Limited** invites online bids on prescribed forms from bonafide firms/ companies having requisite experience and financial capacity for execution of the work detailed in the table given below. The bidder is advised to examine carefully all instructions including addendum/ corrigendum(s), condition of contract data, forms, terms, technical specifications, bill of quantities etc. in the bid document.

1.1 The brief particulars of the Project and the tender are as follows in the **Key Information Table (KIT)**:

S.No.	Particular	Details/ Reference of Clause	
1.	Name of Work	Civil Works Including Earthwork in excavation and filling for Railway Formation, RCC drain work, Minor Bridges, RUBs and ROBb for the Urga to Dharamjaigarh (0 Km to 62 Km) including RoR line (6.2 km) in connection with the construction of New BG Electrified Single Railway Line Chhattisgarh East Rail Corridor Phase-II From Urga (Km 0) To Dharamjaigarh (Km 62) including RoR line (Km 0 to 6.2) via Bhaisma, Dongaama, Dhinara, Dhaskamunda, Hati and Khadgaon stations in the state of Chhattisgarh over South East Central Railway.	
2.	Estimated Cost of Work	₹ 76,55,72,645.06 (Basic Amount) + GST@ 18%= ₹ 90,33,75,721.17	
3.	Completion Period	07 (Seven) months from the date of issue of LOA (INCLUDING Monsoon Period)	
4.	Publishing Date	26.05.2026	17:30 Hrs
5.	Bid Document Download/ Start Date	26.05.2026	18:00 Hrs
6.	Clarification Start Date & Time	27.05.2026	11:30 Hrs

7.	Clarification End Date & Time	29.05.2026	17:30 Hrs
8.	Pre-bid Meeting Date, Time through VC as per link	Not applicable	NA
9.	Email for receiving Pre bid queries	Not applicable	
10.	Last date for receiving Prebid Queries	Not applicable	
11.	Bid Submission Start Date & Time	29.05.2026	18:00 Hrs
12.	Bid Submission End Date & Time	09.06.2026	15:00 Hrs
13.	Bid Opening Date & Time	10.06.2026	15:00 Hrs
14.	Type of Tender	Limited	
15.	No. of Packets	Single Packet	
16.	e-Procurement Portal	https://etenders.gov.in/eprocure/app	
17.	Fee for participating in the bidding (Non-Refundable)	₹ 50,000/- (Rupees Fifty Thousand only) (refer e-Procurement Notice CI 4.5)	
18.	Earnest Money Deposit	₹ 51,16,879.00 /- Pay order/ Demand draft should be payable at Delhi. (refer ITT CI .9)	
19.	Tender Box location address to submit physical document, if any	IRCON INTERNATIONAL LIMITED TENDER BOX, IRCON INTERNATIONAL LIMITED. C-4, District Centre, Saket, New Delhi-110017 (refer CI. 9 & Annexure-VII of ITT)	
20.	Validity of the Bid	90 days after the date of opening (Technical Bid) of the tender.	
21.	Place of Registration of firm/company:	Anywhere in India in case of National Competitive bidding (refer ITT CI 1.2)	
22.	Whether Joint Venture (JV) is permitted or not.	<i>JV is not permitted</i>	
23.	Maximum no. of JV members allowed.	N/A	
24.	Client/ Owner Name	(refer ITT CI 1.4 a))	
25.	Employer/ Executing Agency Name & address	(refer ITT CI 1.4 b))	
26.	Scope of Work	(refer SCC CI 3.0)	
27.	Purchase Preference to MSEs	Not Applicable	
28.	Proforma for Statement of Minor Deviations	Annexure-IV(A) of ITT (refer ITT CI 6 & 7)	
29.	Statement of Minor Deviations with Price in the Financial Bid	Annexure-IV(AA) of Bill of Quantity (BOQ) (refer ITT CI 6 & 7)	
30.	Performance Security	5% of Contract Value (refer SCC CI 13.1)	
31.	Retention Money	Refer SCC CI 13.2	
32.	Insurance	Refer SCC CI 12.0	
33.	Price Variation	Refer SCC CI 9.0	
34.	Submission of Performance Security	Within 21 days from the date of issue of Letter of Acceptance (LOA) (refer SCC CI 13.1)	

35.	Defect Liability Period	Twelve (12) months commencing the date of completion of the works. (refer SCC Cl 11)
36.	Signing of Agreement	Within 28 days from the date of issue of Letter of Acceptance (LOA) (refer SCC Cl 15)

- 2.0 Website <https://etenders.gov.in/eprocure/app> may be referred for detailed terms and conditions of the bidding documents, which is available on line. Amendments/ Corrigendum/ Addendum, if any would be hosted on the website only.

3.0 **ELIGIBILITY CRITERIA**

Deleted.

4.0 **Accessing of Bid Documents & Fee for participating in the bidding**

- 4.1 The complete Bid Document can be viewed/ downloaded from the e-Procurement portal i.e. <https://etenders.gov.in/eprocure/app> free of cost.
- 4.2 Help for Contractors, FAQ, Information about DSC and Bidders Manual Kit containing the detailed guidelines for e-Procurement system are also available on Central Public Procurement Portal.
- 4.3 It is mandatory for all the bidders to have a valid Class-III Digital Signature Certificate (in the name of person having power of attorney to sign the Bid) from any of the licensed Certifying Agency (Bidders can see the list of licensed CA's from the link www.cca.gov.in) to participate in e-Procurement of IRCON.
- 4.4 It is mandatory for the bidders to get their firm/ company registered with e-procurement portal <https://etenders.gov.in/eprocure/app> to have user ID & password. A firm/ company who has registered with the e-Procurement portal as a single entity in the individual capacity can submit the tender either as individual firm/ company or joint venture/ consortium, if JV/ consortium is permitted.
- 4.5 Tender documents will be available online on website <https://etenders.gov.in/eprocure/app> as per date sheet which can be downloaded free of cost. However, to participate in the online bidding process, bidders are required to pay a non-refundable fee of **Rs. 50,000/- (Rupees Fifty Thousand only)** towards the cost of one set of tender documents through NEFT or RTGS only in IRCON's bank account no.: **000705052131**, IFSC Code :**ICIC0000007** at **ICICI Bank Ltd.**, Connaught Place Branch, New Delhi in favor of "IRCON INTERNATIONAL LIMITED" payable at New Delhi.

5.0 **Instructions to Bidders for Online Bid Submission on the e-Procurement portal <https://etenders.gov.in/eprocure/app> .**

Bidders may download and refer the "Instructions for Online Bid Submission" from (<https://etenders.gov.in/eprocure/app.jsessionid=F90A7689A0BF87EF35B88D2CA57C6FD4.cppsugep2?page=StandardBiddingDocuments&service=page>).

6.0 Pre-bid meeting – Not Applicable

- 7.0 IRCON may issue addendum(s)/ corrigendum(s) to the tender documents. In such case, the addendum(s)/ corrigendum(s) shall be issued and placed on website <https://etenders.gov.in/eprocure/app> at any time before the closing time of tender. The tenderers who have downloaded the tender documents from website must visit the website and ensure that such addendum(s)/ corrigendum(s) (if any) is also downloaded by them. This shall be the responsibility of the prospective registered bidders to keep checking the web site for any such corrigendum/ addendum till the bid submission end date and time, and ensure that bid submitted by them are in accordance with all the corrigendum(s)/ addendum(s). Suitable time extension (not less than 3 days beyond the date of last amendment) for submission of bids will be granted.
- 8.0 The tender documents shall be submitted online in the prescribed format given on the website and technical bids received online shall be opened as per date mentioned in Key Information Table (KIT) or Corrigendum thereof. No other mode of submission is acceptable. Detailed credentials as per the requirement of eligibility criteria and all tender papers except Bill of Quantities are to be submitted in “Technical Bid”. Bill of Quantities with rates duly filled in along with Proforma for statement of minor deviations (Annexure-IVAA) with price adjustment for each deviation(s) duly filled in are to be submitted in the format provided online in the name of “Financial Bid”. Hence, physical submission of the documents is limited to submission of original Earnest Money Deposit in the form of Pay Order/ Demand Draft/ Fixed Deposit Receipt/ Bank Guarantee (Note: In case of e-BG physical submission of Bank Guarantee is not required) as per provision given in sub-clause 9.1 of Instructions to Tenderers. Representative of the bidder, who wish to attend in person, may attend the online opening of the bids on the scheduled date and time of Bid opening by IRCON Officials. However, such representatives shall be allowed to attend the opening of the Bids, only, if such person presents the letter of authority issued in his name by the bidder on his letter head.
- 9.0 Bidders cannot submit the tender after the due date and time of e-bid submission. Time being displayed on Central Public Procurement Portal <https://etenders.gov.in/eprocure/app> (“Server System Clock Time”) shall be final and binding on the bidder. e-Bids are required to be submitted by bidders, only as per the Indian Standard Time (IST) and not the time as per their location/country.
- 10.0 The bidders are advised to submit their e-bids well before the e-bid submission due date and time. IRCON shall not be responsible for any delay in submission of e-bids for any reason including server and technical problems.
- 11.0 The ~~Technical and Financial~~ Bid shall be digitally signed by the Authorized Signatory of the bidder & submitted “on-line” only. The authorized signatory of the bidder must be in possession of Power of Attorney before submitting the digitally signed bid. Scanned copies of various documents can be prepared in different file format (PDF, JPEG).
- 12.0 Tender shall be submitted as per “Instructions to Tenderers” forming a part of the tender document.

- 13.0 **Any tender received without original Earnest Money in the form as specified in tender documents shall not be considered and shall be summarily rejected.**
- 14.0 IRCON reserves the right to cancel the tenders before submission/ opening of tenders, postpone the tender submission/ opening date and to accept/ reject any or all tenders without assigning any reasons thereof. IRCON's assessment of suitability as per eligibility criteria shall be final and binding.
- 15.0 Tenderers may note that they are liable to be disqualified at any time during tendering process in case any of the information furnished by them is not found to be true. EMD of such tenderer shall be forfeited. The decision of IRCON in this regard shall be final and binding.
- 16.0 ~~IRCON reserves the right to pre-qualify the bidder(s) provisionally based on the documents submitted by them and open financial bid(s), subject to their final verification.~~ In the event of any document being found false, the provisional qualification shall stand withdrawn, and the next lower bidder shall automatically come to the position of such disqualified bidder. Action against such disqualified tenderers shall be taken as per above clause no.: 15.0 of Notice Inviting Tender.
- 16.1 The tenderers shall submit affidavit stating that all their statements/ documents submitted along with bid are true and correct. Standard format of affidavit to be submitted by the bidder is enclosed as Annexure-IV. Non submission of above affidavit by the bidder shall result in summarily rejection of his/ their bid.
- 17.0 **The validity of the offer shall be for the period indicated in Key Information Table (KIT) in Para 1.1 of e-Procurement Notice” after the date of opening (Technical Bid) of the tender.**
- 18.0 **Public Procurement (Preference to Make in India), Order 2017**

Provisions of Make in India Policy 2017 issued by Govt. of India, as amended from time to time, shall be followed for consideration of tenders.

For & on behalf of
Chhattisgarh East Railway limited

(Surender Singh)
Executive Director/ Projects
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SECTION - II
Form of Bid

FORM OF BID

To

IRCON INTERNATIONAL LIMITED,
Acting Through
Executive Director/ Projects
IRCON INTERNATIONAL LIMITED,
C-4, District Centre, Saket, New Delhi

Dear Sir,

I/We, _____ (*Name and address of the tenderer*) have read the various terms and conditions of the e-Procurement documents attached herewith duly signed by me/ us and agree to abide by the same. I/We also agree to keep this tender open for acceptance **within the period of the validity of bids** and on default thereof our Earnest Money is liable to be forfeited.

I/We hereby declare that we have visited the site of the work and have made ourselves fully conversant of the conditions therein and including the topography of area, soil strata at site of work, sources and availability of construction materials, rates of construction materials, water, electricity, all local taxes, royalties, octroi etc., availability of local labour (both skilled and unskilled), relevant labour rates and labour laws, the existing road and approaches to the site of work, requirements for further service roads / approaches to be constructed by me / us, the availability and rates of private land etc. that may be required by me / us for various purposes, climatic conditions, law and order situation and availability of working days.

I/We have quoted our rates for various items in the Bill of Quantities taking into account all the above factors and I/We offer to do the work " _____ " (*Name of the work*) at the rates quoted in the attached Bill of Quantities and hereby bind ourselves to complete the work in all respects within time schedule depicted in tender documents from the date of issue of letter of acceptance of tender.

I/We also understand that until a formal Contract Agreement is executed, Letter of Acceptance along with all tender documents shall constitute a binding contract between me/us and Ircon International Limited.

Our Bank Account No. for the purpose of refund of EMD is.....(*Account No., Name of A/C Holder, other details for NEFT/ RTGS*).

Thanking you,

Yours Faithfully,

Signature _____ and name of the signatory _____ in capacity of _____ duly authorized to sign bids for and on behalf of:

_____ (*In Block capital letters*)

Date this _____ day of _____ 2026.

SECTION- III
Instructions To Tenderers

SECTION III: Instructions To Tenderers
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INSTRUCTIONS TO TENDERERS (ITT)

A.

1 General

- 1.1 Name of the Work: As indicated in 'Key Information Table (KIT) in Para 1.1 of e-Procurement Notice'.
- 1.2 "A bidder in the capacity of Individual or Sole Proprietor, Partnership Firm, or Company/ Joint Venture (JV) (if permitted as per clause 1.2.2 below) can participate in the tender and the bidder must upload copies of the constitution of its firm such as Partnership Deed, Registration Certificate, Memorandum & Articles of Association, etc., as applicable, MOU/ Joint Venture agreement, if applicable, duly attested by the authorized signatory along with Power of Attorney of authorized signatory, signing the e-bid documents digitally as well as manually, duly attested by Notary Public".
 - 1.2.1 Place of Registration of firm/ company as indicated in "Key Information Table (KIT) in Para 1.1 of e-Procurement Notice".
 - 1.2.2 Please refer Key Information Table (KIT) in Para 1.1 of e-Procurement Notice to check whether Joint Venture (JV) is permitted or not permitted to participate in the tender.
 - 1.2.2.1 In case of tender where Indian Railway's GCC is applicable, JV Clauses of Indian Railway GCC shall be applicable and clauses 1.2.4 will not be applicable.
 - 1.2.3 Foreign bidder as a single entity is not permitted to participate in the national competitive bidding, if it is not legally valid firm/ company registered in India as per Indian laws. However, if Joint Venture is permitted in this tender as per sub-clause no. 1.2.2 above, then foreign bidder can participate as a member of JV. Foreign bidder from a country which shares land border with India also has to satisfy the requirements mentioned in sub-clause 1.3 below.
 - 1.2.4 Joint Venture Clause **(Not Applicable)**
 - 1.2.5 **Participation of Partnership Firms:**
 - 1.2.5.1 The Partnership Firms participating in the tender should be legally valid under the provisions of the Indian Partnership Act.
 - 1.2.5.2 The partnership firm should have been in existence or should have been formed prior to submission of tender. Partnership firm should have either been registered with the Registrar or the partnership deed should have

been notarized as per the Indian Partnership Act, prior to submission of tender.

- 1.2.5.3 Separate identity / name should be given to the partnership firm. The partnership firm should have PAN / TAN number in its own name and PAN / TAN number in the name of any of the constituent partners shall not be considered. The valid constituents of the firm shall be called partners.
- 1.2.5.4 Once the tender has been submitted, the constitution of the firm shall not normally be allowed to be modified / altered / terminated during the validity of the tender as well as the currency of the contract except when modification becomes inevitable due to succession laws etc., in which case prior permission should be taken from the Employer and in any case the minimum eligibility criteria should not get vitiated. The re-constitution of firm in such cases should be followed by a notary certified Supplementary Deed. The approval for change of constitution of the firm, in any case, shall be at the sole discretion of the Employer and the tenderer shall have no claims what-so-ever. Any change in the constitution of Partnership firm after submission of tender shall be with the consent of all partners and with the signatures of all partners as that in the Partnership Deed. Failure to observe this requirement shall render the offer invalid and full Bid Security shall be forfeited.

If any Partner/s withdraws from the firm after submission of the tender and before the award of the contract, the offer shall be rejected and Bid Security of the tenderer will be forfeited. If any new partner joins the firm after submission of tender but prior to award of contract, his / her credentials shall not qualify for consideration towards eligibility criteria either individually or in proportion to his share in the previous firm. In case the tenderer fails to inform the Employer beforehand about any such changes / modification in the constitution which is inevitable due to succession laws etc. and the contract is awarded to such firm, then it will be considered a breach of the contract conditions liable for determination of the contract under Clause 50 of the Standard General Conditions of Contract.

- 1.2.5.5 A partner of the firm shall not be permitted to participate either in his individual capacity or as a partner of any other firm in the same tender.
- 1.2.5.6 The tender form shall be submitted only in the name of partnership firm. The Bid Security shall be submitted by partnership firm. The Bid Security submitted in the name of any individual partner or in the name of authorized partner (s) shall not be considered.
- 1.2.5.7 On issue of Letter of Acceptance (LOA) to the partnership firm, all the guarantees like Performance Guarantee, Guarantee for various Advances to the Contractor shall be submitted only in the name of the partnership firm and no splitting of guarantees among the partners shall be acceptable.

1.2.5.8 On issue of Letter of Acceptance (LOA), contract agreement with partnership firm shall be executed in the name of the firm only and not in the name of any individual partner.

1.2.5.9 In case the Letter of Acceptance (LOA) is issued to a partnership firm, the following undertakings shall be furnished by all the partners through a notarized affidavit, before signing of contract agreement.

(a) Joint and several liabilities:

The partners of the firm to which the Letter of Acceptance (LOA) is issued, shall be jointly and severally liable to the Employer for execution of the contract in accordance with General and Special Conditions of the Contract. The partners shall also be liable jointly and severally for the loss, damages caused to the Employer during the course of execution of the contract or due to non-execution of the contract or part thereof.

(b) Duration of the partnership deed and partnership firm agreement:
The partnership deed/partnership firm agreement shall normally not be modified/altered/ terminated during the currency of contract and the maintenance period after the work is completed as contemplated in the conditions of the contract. Any change carried out by partners in the constitution of the firm without permission of the Employer, shall constitute a breach of the contract, liable for determination of the contract under Clause 50 of the Standard General Conditions of Contract.

(c) Governing laws:

The partnership firm agreement shall in all respect be governed by and interpreted in accordance with the Indian laws.

(d) No partner of the firm shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other partner/s and that of the Employer.

1.3 Any bidder from a country, which shares a land border with India, will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority which shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). Further, any bidder (including an Indian Bidder) who has a specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India, shall also be required to be registered with the same competent authority as above.

The above requirement of registration of bidders who have specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India will be applicable for all Procurements where tenders are issued/ published after 01.04.2023.

- i) “Bidder (or entity) from a country which shares a land border with India” for the purpose of this Clause means:-
 - a. An entity incorporated, established or registered in such a country; or
 - b. A subsidiary of an entity incorporated, established or registered in such a country; or
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - d. An entity whose beneficial owner is situated in such a country; or
 - e. An Indian (or other) agent of such an entity; or
 - f. A natural person who is a citizen of such a country; or
 - g. A consortium or joint venture (if joint venture is permitted in the tender in terms of sub-clause 1.2.2 above) where any member of the consortium or joint venture falls under any of the above.
- ii) The beneficial owner for the purpose of (i) above will be as under:
 - 1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural 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 per cent of shares 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 of their shareholding or management rights or shareholders agreements or voting agreements;
 - 2. In case of a partnership firm, the beneficial owner is the natural 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;

3. 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 profits of such association or body of individuals;
 4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
 5. 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 of ownership.
- iii) An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

(NOTE:

- a) A person who procures and supplies finished goods from an entity from a country which shares a land border with India will, regardless of the nature of his legal or commercial relationship with the producer of the goods, be deemed to be an Agent for the purpose of this Order.
 - b) However, a bidder who only procures raw material, components etc. from an entity from a country which shares a land border with India and then manufactures or converts them into other goods will not be treated as an Agent.]
- iv) The successful bidder shall not be allowed to sub-contract works to any contractor from a country, which shares a land border with India unless such contractor is registered with the Competent Authority.
- v) The registration shall be valid at the time of submission of bid and at the time of acceptance of bid.
- vi) If the bidder was validly registered at the time of acceptance/ placement of order, registration shall not be a relevant consideration during contract execution.
- 1.3.1 *“Transfer of Technology”* means dissemination and transfer of all forms of commercially usable knowledge such as transfer of know-how, skills, technical expertise, designs, processes and procedures, trade secrets, which enables the acquirer of such technology to perform activities using the transferred technology independently. (Matters of interpretation of this

term shall be referred to the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade, and the interpretation of the Committee shall be final.)

1.3.2 “*Specified Transfer of Technology*” means a transfer of technology in the in the sectors and/ or technologies, specified as under occurring on or after 23.07.2020:

- (a) Certain sectors and technologies have been identified as sensitive from the national security point of view. The sectors listed in Schedule I below are considered Category-I sensitive sectors. The sectors listed in Schedule II below are considered Category-II sensitive sectors. The technologies listed in Schedule III below are considered sensitive technologies.
- (b) For Category-I sensitive sectors, bidders with ToT arrangement in any technology with an entity from a country which shares a land border with India shall require registration.
- (c) For Category-II sensitive sectors, bidders with ToT arrangement in the sensitive technologies listed in Schedule III, with an entity from a country which shares a land border with India shall require registration.
- (d) In Category-II sensitive sectors, the Secretary (or an officer not below the rank of Joint Secretary to Government of India, so authorized by the Secretary) of the Ministry/ Department of the Government of India is empowered, after due consideration, to waive the requirement of registration for a particular item/ application or a class of items/ applications from the requirement of registration, even if included in Schedule III. The Ministry/ Department concerned shall intimate the Department for Promotion of Industry and Internal Trade (DPIIT) and National Security Council Secretariat (NSCS) of their decision to waive the requirement of registration. Ministries/ Departments of the Government of India are not required to consult the DPIIT/ NSCS before deciding and are only required to intimate the decision to DPIIT/ NSCS. If any point is raised by DPIIT/ NSCS, it should be considered in future procurements; ongoing procurement for which the waiver was granted need not be interrupted or altered.

Sr. No.	Schedule I	Schedule II	Schedule-III
	Category-I Sensitive sectors	Category-II Sensitive sectors	Sensitive Technologies
(i)	Atomic Energy	Power and Energy (including exploration/ generation/ transmission/ distribution/ pipeline)	Additive Manufacturing (e.g. 3D Printing)

(ii)	Broadcasting/ Print and Digital Media	Banking and Finance including Insurance	Any equipment having electronic programmable components or autonomous systems (e.g. SCADA systems)
(iii)	Defence	Civil Aviation	Any technology used for uploading and streaming of data including broadcasting, satellite communication etc.
(iv)	Space	Construction of ports and dams & river valley projects	Chemical Technologies
(v)	Telecommunications	Electronics and Microelectronics	Biotechnologies including Genetic Engineering and Biological Technologies
(vi)		Meteorology and Ocean Observation	Information and Communication
(vii)		Mining and extraction (including deep sea projects)	Software
(viii)		Railways	
(ix)		Pharmaceuticals & Medical Devices	
(x)		Agriculture	
(xi)		Health	
(xii)		Urban Transportation	

1.3.3 The above Clause 1.3 will not be applicable for cases following under Special Cases:

- A. In projects which receive international funding with the approval of the Department of Economic Affairs (DEA), Ministry of Finance, the procurement guidelines applicable to the project shall normally be followed, notwithstanding anything contained in this order and without reference to the Competent Authority. Exceptions to this shall be decided in consultation with DEA.
- B. This order shall not apply to procurement by Indian missions and by offices of government agencies/ undertakings located outside India.
- C. This order will not apply to bidders (or entities) from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. Updated lists of countries to which lines of credit have been extended or in which development projects are undertaken are given on the website of the Ministry of External Affairs.

- D. Procurement of spare parts and other essential service support like Annual Maintenance Contract (AMC)/ Comprehensive Maintenance Contract (CMC), including consumables for closed systems, from Original Equipment Manufacturers (OEMs) or their authorized agents, shall be exempted from the requirement of registration.

1.4 The work is proposed to be executed under the following relationship.

- a) Client/ Owner: As indicated in 'Key Information Table (KIT) in Para 1.1 of e-Procurement Notice'.

Chhattisgarh East Railway Limited
CSIDC Complex, Mahadev Ghat Road
Raipura Chowk, Raipur,
Chhattisgarh - 492001

- b) Employer/ Executing Agency:
IRCON INTERNATIONAL LIMITED
1st Floor, AKR Building, Opposite Zudio
Near CMD Chowk Link Road,
Bilaspur, Chhattisgarh-495001

- c) Contractor: The successful tenderer to whom the work is awarded shall become the contractor for the execution of this work

1.5 Throughout these bidding documents, the terms "bid" and "tender" and their derivatives ("bidder"/ "tenderer"), "bid/ tendered", "bidding"/ "tendering", etc.) are synonymous. Day means calendar day. Singular also means plural.

1.6 Scope of Work: As indicated in 'Key Information Table (KIT) in Para 1.1 of e-Procurement Notice'.

The scope given in the KIT is only indicative. The detailed scope has been described in the tender documents.

1.7 Approximate Estimated cost of the work is as indicated in the 'Key Information Table (KIT) in Para 1.1 of e-Procurement Notice.'

1.8 A bidder shall submit only one bid in the capacity of an Individual or Sole Proprietor, Partnership firm, or Company or Joint Venture (if permitted in the tender). In case joint venture is permitted in the tender in terms of sub-clause 1.2.2 above, a member of JV shall not be permitted to participate either in individual capacity or as a member of another JV in the same tender. Violation of this condition is liable to disqualify the tenders in which such bidder has participated and EMD of all such tenderers shall stand forfeited.

2 Cost of Bidding

- 2.1 The bidder shall bear all costs associated with the preparation and submission of the bid and the Employer will in no case be responsible or liable for these costs regardless of the conduct or the outcome of the bidding process.

B. The Bidding Documents

The tenderers must use the formats available in technical bid and financial sheets available in excel format in this Tender Document for submission of their Technical as well as Financial Bid. Any Bid not conforming to the prescribed format is liable to be declared non-responsive.

3 Content of bidding documents

- 3.1 The bidding documents include the following:

e-Procurement Notice
Form of Bid
Instructions to Tenderers
Appendix to Tender
Special Conditions of Contract
Technical Specifications
Drawings
Bill of Quantities

- 3.2 The bidder is expected to examine all instructions, terms, conditions, forms, specifications, corrigendum/ addendums and other information in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the bidders' risk and may result in rejection of his bid.

4 Understanding and Amendment of Tender Documents

- 4.1 The bidder must obtain for itself on its own responsibility and its own cost all the information including risks, contingencies & other circumstances in execution of the work. It shall also carefully read and understand all its obligations & liabilities given in tender documents.
- 4.2 The bidder is advised to visit and examine the site where the work is to be executed and its surroundings or other areas as deemed fit by the bidder and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and execution of the contract. The cost of visiting the site and collecting relevant data shall be at the bidder's own expenses. It is a condition of the tender that the tenderer is deemed to have visited the site and satisfied himself with all the conditions prevailing including any difficulties for executing the work.

- 4.3 Bidders will examine the various provisions of The Central Goods and Services Tax Act, 2017 (CGST)/ Integrated Goods and Services Tax Act, 2017 (IGST)/ Union Territory Goods and Services Tax Act, 2017 (UTGST)/ respective state's State Goods and Service Tax Act (SGST) also, as notified by Central/ State Government and as amended from time to time and applicable taxes before bidding. Bidders will ensure that full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.
- 4.4 The successful bidder who is liable to be registered under CGST/IGST/UTGST/SGST Act shall submit GSTIN along with other details required under CGST/IGST/UTGST/SGST Act to IRCON immediately after the award of contract, without which no payments shall be released to the contractor. The contractor shall be responsible for deposition of applicable GST to the concerned authority.
- 4.5 In case the successful bidder is not liable to be registered under CGST/IGST/UTGST/SGST Act, IRCON shall deduct the applicable GST from his/ their bills under Reverse Charge Mechanism (RCM) and deposit the same to the concerned authority.
- 4.6 At any time prior to the deadline for submission of bids, Employer may for any reason whether at its own initiative or in response to any request by any prospective bidder amend the bidding documents by issuing Corrigendum(s)/ Addendum(s), which shall be part of the tender documents.
- 4.7 Employer may at its discretion extend the deadline for submission of the bids at any time before the time of submission of the bids.

C. Preparation of the Bids

5 Language of Bid

- 5.1 The bid prepared by the bidder and all documents related to the bid shall be written in English.

6 Signing of All Bid papers and Completing Bill of Quantities

- 6.1 It shall be deemed that e-bid uploaded by the tenderer is digitally signed by his authorized representative holding the Power of Attorney.
- 6.2 While filling up the rates/ percentage in the Bill of Quantities, tenderer shall ensure that the rates/ percentage, as applicable, are filled up in figures only. System will automatically convert such filled up rates/ percentage into words. In case of item rate/percentage tenders, the system will automatically calculate the total price by multiplying the unit rate with quantity/ quoted percentage with estimated cost put to tender.

- 6.3 The bid should be submitted online only in the prescribed format given in the e-procurement portal of IRCON. No other mode of submission is accepted. The Technical and Financial Bid shall be digitally signed by the authorized signatory of the bidder & submitted “online” only. **No hard copy of Technical and Financial bid is required to be submitted except the documents as specified in Annexure VII of ITT.**

The tenderer may download financial bid form & Proforma for Statement of minor deviations (Annexure ‘IV(AA)’ to financial bid) and upload the same duly filled through online e-Procurement process.

The tenderer must fill and submit the prices as per instructions given in Bill of Quantities and Proforma for Statement of minor deviations. The system does not permit any addition or alteration in the tender documents. The requisite details should be filled in by the tenderer wherever required in the documents. Incomplete tender or tender not submitted as per instructions is liable to be rejected.

The price of each minor deviation mentioned in the Proforma for statement of minor deviations will be the price which the tenderer agrees to offer to the employer from his quoted offer in BOQ if deviation is agreed by the employer. Any such deviation without a price shall not be considered and will be treated as withdrawn by the tenderer. Any other deviation mentioned anywhere in the submission other than in Annexure-IV(A) of Instructions to Tenderer shall be considered as if mentioned inadvertently by the tenderer and shall be considered as withdrawn without any confirmation from the tenderer.

7 **Deviations**

- 7.1 The tenderer should clearly read and understand all the terms and conditions, specifications, drawings, etc. mentioned in the original tender documents.

The tenderer may submit minor deviations in Annexure IV(A) and a confirmation that price of every such minor deviation has been given in the financial bid/Bill of Quantity (BOQ). Minor deviation may be in the employer’s requirements or in any other tender requirement which do not alter the basic functionality of the work or part thereof. If there is no such minor deviation, then the tenderer must write “NIL” in this Annexure. Tenderer to note that such minor deviations may or may not be accepted by the employer and the tenderer shall not have any right to any claim on this account. The offer in BOQ shall be given without considering any deviation in tender conditions. The lowest bidder will be decided without considering any deviation in the tender conditions. If the lowest bidder has given some minor deviations, then the Employer has right to accept some or all such minor deviation and the offer of the lowest bidder will be reduced by the price of such accepted deviations (Tenderer to see note 1 of Annexure-IV(A) of ITT).

8 Submission of tender documents

Tender Documents will be received in electronic form only after payment of Tender Document fee.

9 Earnest Money:

9.1 The tenderer must furnish the Earnest Money as indicated in 'Key Information Table (KIT) in Para 1.1 of e-Procurement Notice' for the work as specified failing which the tender shall be summarily rejected. The Earnest Money may be in any one of the following forms:

- a) Pay Order/ Demand Draft of any Scheduled Bank in India in favour of Ircon International Limited payable at a place as given in Key Information Table (KIT) in Para 1.1 of e-Procurement Notice'. It is mandatory for bidders to provide their Banker's details (Name of Bank & Branch) along with their own bank details (Account No., Name of Account Holder, NEFT/RTGS details).
- b) Fixed Deposit Receipt issued by any Scheduled Bank in India endorsed in favour of IRCON INTERNATIONAL LIMITED.
- c) EMD value up to Rs.10.00 Lacs must be in the form of Pay Order/DD/FDR. In addition, EMD may also be paid through NEFT or RTGS in IRCON's bank account no.: 000705052131, IFSC Code: ICIC0000007, at ICICI Bank Ltd., Connaught Place Branch, New Delhi in favor of "IRCON INTERNATIONAL LIMITED" payable at New Delhi and email ID emdbg@ircon.org. In case of EMD amount being more than Rs.10.00 Lacs, it can also be deposited in the form of irrevocable Bank Guarantee (e-BG issued on NeSL Platform is also acceptable), issued by a Scheduled Bank as per the format enclosed at Annexure IX to 'SCC' / Insurance Surty Bond in the format annexed as Annexure IX A by an Insurance Company authorized to do so by IRDAI valid for minimum 180 days beyond the last date of submission of bid. B.G./Insurance Surety Bond not valid for 180 days beyond the last date of submission of bid, will not be considered a valid EMD instrument.
- d) The scheduled bank issuing the Bank Guarantee must be on the Structure Financial Messaging System (SFMS) platform. A separate advice of the B.G. shall invariably be sent by the issuing bank to the Employer's Bank through SFMS and only after this, the B.G. shall become operative and acceptable to the Employer.
- e) Earnest Money in the form of Pay Order/DD/FDR/BG/Insurance Surety Bond shall be scanned & uploaded through online e-Procurement process. Further EMD in original form (For BG along with a copy of 'SFMS – Messaging Report' sent by the BG issuing Bank) sealed in an envelope must be submitted in the tender box at the address given in Key Information Table (KIT) in Para 1.1 of e-Procurement Notice **not later than the prescribed date and time for e-bid submission (In case of e-BG issued on NeSL Platform, the original BG is not required to be**

submitted in the tender box).

- f) Proof of transaction towards payment of Earnest Money through NEFT or RTGS shall be scanned either in PDF or JPEG format such that file size is not more than 5 MB and uploaded during the online submission of the e-bid not later than the prescribed date and time for e-bid submission.
- g) No interest shall be allowed on Earnest Money Deposit.

9.2 Forfeiture of Earnest Money:

- 9.2.1 The Earnest Money of the tenderer shall be forfeited if he withdraws his tender after opening of the tender during the period of tender validity specified in the “Key Information Table (KIT) in Para 1.1 of e-Procurement Notice” or extended validity period as agreed to in writing by the tenderer.
- 9.2.2 The Earnest Money of the successful tenderer is liable to be forfeited if he fails to;
 - i) sign the Contract Agreement in accordance with the terms of the tender, or
 - ii) furnish Performance Guarantee in accordance with the terms of the tender, or
 - iii) commence the work within the time period stipulated in the tender.
- 9.2.3 In case of forfeiture of EMD, the tenderer shall be debarred from bidding in case of re-invitation of the tenders.

9.3 Return of Earnest Money:

- 9.3.1 The Earnest Money of the unsuccessful tenderers in the form of FDR/ BG/Insurance Surety Bond shall be discharged and returned as promptly as possible and the Earnest Money in the form of DD/ Pay Order/ NEFT or RTGS shall be directly credited to his bank account through Electronic Fund Transfer, under advice to the bidder.
- 9.3.2 The Earnest Money Deposit of the successful tenderer shall be dealt as under:
 - i) The Earnest Money Deposit of the successful tenderer shall be returned after submission of the Performance Bank Guarantee in the acceptable form as per relevant contract conditions and verification of the same from the issuing bank/Insurance company.

- ii) In case, there is no provision in the contract for submission of Performance Guarantee:
- a) If the Earnest Money Deposit (EMD) is in the form of Demand Draft/ Pay Order/ NEFT or RTGS, the same shall be retained towards retention money and further deduction of retention money from the bills shall commence after adjusting this EMD amount.
- b) If the Earnest Money Deposit is in the form of Fixed Deposit Receipt (FDR)/ Bank Guarantee (BG)/Insurance Surety Bond, the FDR/BGBG)/Insurance Surety Bond shall be returned after deduction of an equivalent amount from the on account bills towards retention money and further balance amount of retention money shall continue to be recovered from on account /Final bills as per relevant contract conditions.

10 Integrity Pact (IP) :

- 10.1 Integrity Pact will be applicable for all tenders/ contracts (for works & supply) of value Rs 5 Crore & above at all Indian projects. Integrity Pact attached as Annexure-VI to 'Instructions to Tenderers' shall become a part of tender.
- 10.2 Integrity Pact shall be signed by the authorized signatory of the tenderer and witnessed in the format attached as Annexure-VI at the time of signing Contract Agreement. Bidders shall abide by the provisions of Integrity Pact by signing the Affidavit attached as Annexure – IV to Instructions to Tenderers.
- 10.3 This Pact shall be signed by all the partners of Partnership firm and all the members of Joint Venture (JV)/ MOU (if participation of JV/ MOU is permitted in the tender).
- 10.4 Only those vendors/ bidders who sign the Affidavit shall be qualified to participate in the bidding process.
- 10.5 The Integrity Pact will be signed by IRCON at the time of execution of Agreement with the successful tenderer.
- 10.6 Name, Designation & Address of Tender Inviting Authority of IRCON :
Name: Shri Surender Singh
Executive Director/ Projects
Address: Ircon International Limited,
C-4, District Centre, Saket,
New Delhi-110017
Mobile: +91-9560595025
Email ID: surender.singh@ircon.org
- 10.7 Name & Address of IEMs:

- (i) Name: Virendra Kumar Saksena, IRS(Retd),
Address: Flat No. C-175, kendriya Vihar
Sector-51, Noida- 201301
Email: iem.reference@ircon.org
- (ii) Name: Shri Madhusudan Prasad, IAS(Retd)
Address: M-11, Green Park Main
New Delhi – 110016
Email: iem.reference@ircon.org
- (iii) Name: Lt. Gen Harsha Gupta,
PVSM, UYSM, AVSM, YSM, VSM(Retd)
Address: Apartment No A-113, India Bulls Enigma
Dwarka Expressway, Sector-110,
Gurugram (Haryana) – 122017
Email: iem.reference@ircon.org

10.8 IEM(s) shall not be made party to any dispute between the parties to the agreement for this work.

11 Period of validity of the tender

- 11.1 The tender shall remain valid for the period indicated in “Key Information Table (KIT) in Para 1.1 of e-Procurement Notice” after the date of the opening of the tender. If the tenderer gives validity period less than that fixed/ prescribed by Employer, the tender shall be liable to be rejected.
- 11.2 Notwithstanding the above clause, Employer may solicit the tenderer’s consent to extend the validity period of the tender. The request and the response shall be made in writing.

D. Submission of Bids

12 Deadline for submission of tender

- 12.1 Earnest Money Deposit required in physical form, as per sub-clause 9.1 of “Instructions to Tenderers” must be submitted in the tender box at the address specified in the Key Information Table (KIT) in Para 1.1 of “e-Procurement Notice” **not later than the prescribed date and time for e-bid submission.**
- 12.2 Any tender related documents received after opening of the tender shall be rejected.

Tenderers must upload the good scanned copy of relevant documents required to be submitted on e-Procurement website as mentioned in the tender documents. The document which is not readable or legible will not be given cognizance. E-Bids which are not supported by relevant documents shall not be considered during evaluation of bid.

13 Modification / Substitution / Withdrawal of tender

- 13.1 The tenderer may modify, substitute or withdraw his e-bid after online submission prior to the date and time of e-bid opening.
 - 13.2 For modification of e-bid, bidder has to upload / resubmit digitally signed modified e-bid in the CPP Portal (<https://etenders.gov.in/eprocure/app>).
 - 13.3 For withdrawal of e-bid, bidder can withdraw his e-bid by clicking on withdrawal icon at e-procurement portal.
 - 13.4 Before withdrawal of an e-bid, it may specifically be noted that after withdrawal of an e-bid for any reason, tender fee will not be refunded. The bidder trying to re-submit the e-bid will have to pay the cost of tender document again.
- 14 Submission of an e-bid by a tenderer implies that he had read all the tender documents including amendments if any, visited the site and has made himself aware of the scope and specifications of the work to be done, local conditions and other factors having any bearing on the execution of the work.

15 Parts of tenders

- 15.1 All documents/ forms/ instructions/ specifications etc. listed in item 3.1 of this 'Instructions to Tenderers' and those attached as per the Annexure VII are deemed to be a part of the bid/ tender and accepted by the bidder.
- 15.2 In case of any ambiguity, IRCON will be free to seek confirmation of information from the issuer of the document.

E. e-Bid opening and Evaluation

16 Opening of the tender

- 16.1 Tenders will be opened at the address mentioned in "e-Procurement Notice" in presence of tenderers or authorized representatives of tenderers who wish to attend the opening of tenders. Physical presence during e-bid opening is optional.
- 16.2 Tenderers or their authorized representatives who are present shall sign register in evidence of their attendance.
- 16.3 Tenderer's name, presence or absence of requisite Earnest Money, total cost of work quoted or any other details as Employer may consider appropriate will be displayed with list to all participating bidders online after bid opening.

17 Clarification of the tenders

- 17.1 To assist the examination, evaluation and comparison of the tenders, Employer may at his discretion ask the tenderers for any clarifications as considered essential. All such correspondence shall be in writing and no change in price or substance of the tender shall be sought or permitted. The above clarification for submission of the details shall form part of the tender and shall be binding on tenderer.

18 Preliminary examination of bids

- 18.1 The Employer shall examine the bids to determine whether they are complete, whether physical copy of all the relevant documents have been scanned, uploaded and Earnest Money Deposit in original form received **not later than the prescribed date and time for e-bid submission** and generally they are in order.
- 18.2 Prior to the detailed evaluation, Employer shall determine whether each bid is of acceptable quality, is generally complete and is substantially responsive to the bidding documents. For purposes of this determination, a substantially responsive bid is one that conforms to all the terms, conditions and specifications of the bidding documents without material deviations, objections, conditionality or reservation and for minor deviation details have been submitted in Annexure 'IV(A)' in terms of clause 7.1 above and cost of withdrawal of minor deviations (if any) has been quoted in the Proforma for statement of minor deviation attached with the financial bid. A material deviation, objections, conditionality or reservation is one;
- i) That affects in any substantial way the scope, quality or performance of the contract.
 - ii) That limits in any substantial way, inconsistent with the bidding documents, the Employers' rights or the successful Bidder's obligations under the contracts; or
 - iii) whose rectification would unfairly affect the competitive position of other Bidders who are presenting substantially responsive bids.
- 18.3 If an e-bid is not substantially responsive, it shall be rejected by the Employer.
- 18.4 In case of tenders containing any conditions or deviations or reservations about contents of tender document, Employer may ask for withdrawal of such conditions/ deviations/ reservations. If the tenderer does not withdraw such conditions/ deviations/ reservations, the tender shall be treated as non-responsive. Employer's decision regarding responsiveness or non-responsiveness of a tender shall be final and binding.

19 Evaluation and comparison of tenders

- 19.1 Bids, which are determined as substantially responsive, shall be evaluated based on ~~Essential-Qualifying~~ Criteria as given in the tender document. The tenderer must scan and upload all necessary authentic data with necessary supporting certificates of the various items of evaluation criteria failing which his tender is liable to be rejected.
- 19.1.1 The lowest bidder will be decided without considering any deviation in the tender conditions. If the lowest bidder has given some minor deviations, then the Employer has right to accept some or all such minor deviation and the offer of the lowest bidder will be reduced by the price of such accepted deviations (Tenderer to see note 1 of Annexure-IV(A) of ITT).
- 19.2 The Employer/ Engineer reserves the right to negotiate the offer submitted by the tenderer to withdraw certain conditions or to bring down the rates to a reasonable level. The tenderer must note that during negotiations of rates of items of BOQ can only be reduced and not increased by the tenderer. In case the tenderer introduces any new condition or increases rates of any item of BOQ, his negotiated offer is liable to be rejected and the original offer shall remain valid and binding on him.

20 Canvassing

- 20.1 No tenderer is permitted to canvass to Employer on any matter relating to this tender. Any tenderer found doing so may be disqualified and his bid may be rejected.

21 Right to accept any tender or reject all tenders

Employer/ Engineer reserves the right to accept, split, divide, negotiate, cancel or reject any tender or to annul and reject all tenders at any time prior to the award of the contract without incurring any liability to the affected tenderers or any obligation to inform affected tenderer, the grounds of such action.

- 22 If the tenderer, as individual or as a partner of partnership firm, expires after the submission of his tender but before award of work, the Employer/ Engineer shall deem such tender as invalid.

23 Award of Contract

- 23.1 Employer/ Engineer shall notify the successful tenderer in writing by Courier/ Speed Post or per bearer or delivering the same by e-mail.

- 23.2 Letter of Acceptance after it is signed by the Contractor in token of his acceptance shall constitute a legal and binding contract between Employer/ Engineer and the contractor till such time the contract agreement is signed.

24 Contractor Performance Feedback and Evaluation System

The employer will have a 'Contractor Performance Feedback and Evaluation System' for periodic evaluation of Contractors performance during execution of Contract. In case contractor's overall performance is found unsatisfactory (<85% for Works Contracts and <75% for Consultancy Contracts) based on the parameters as listed in Annexure 'II' and 'III' respectively, the Contractor is liable to be declared a 'non-performer', and will become ineligible for participation in future tenders of this Organization for a period of 2 (two) years from the date of such decision. This decision is to be conveyed to the Contractor in writing. The non-performer status may be revoked during currency of the contract on improvement of performance parameters during the next annual review.

This is without prejudice to any other recourse available to the Employer under the Conditions of Contract.

25 Ineligibility to participate in re-tenders/ future cases

Notwithstanding anything contained in the Qualification Clauses of ITT, if a bidder withdraws from an offer after having been declared a preferred bidder or after Notification of Award or does not sign the Contract Agreement pursuant to the Letter of Acceptance or does not submit an acceptable Performance Security which results in tender being annulled then such bidder shall be treated as ineligible for participation in re-tendering of this particular work and also for any other work for a period of 6 months. A repeat incident of similar type within a period of 2 (two) years will render the bidder ineligible for participation in all future tenders for a further period of 2 (two) years.

26 Bidder non-eligibility for participation in tender & Declaration of non-performance or ban status or termination

- 26.1 Tenderers including any partner of JV/MOU (in case of JV/MOU permitted in the tender) are not eligible to participate in the tender process under the following conditions:
- a. They have been declared a non-performer by Central/ State Government Department in India including authority controlled by them during the last two years prior to the date of bid submission.
 - b. They are currently debarred for tendering, blacklisted, suspended in Central/ State Government Department in India including authority controlled by them.

- c. Any previous contract awarded to them has been terminated by IRCON or its subsidiaries, during the last two years prior to the date of bid submission.
- d. The bidder (any partners of JV, in case JV is permitted in the tender) is in Corporate Insolvency Resolution Process (CIRP)/ liquidation/ Winding up/ CDR/SDR/S4A/Flexible Structuring or any other restructuring scheme due to financial stress and is in default on any debt obligations on the bid due date. An undertaking of bidder (All partners of JV in case JV is permitted in the tender) (duly certified by the statutory auditor of the bidder with UDIN where the accounts are audited. In other cases, the same may be certified by Chartered Accountant with UDIN) must be submitted along with the bid.

26.2 Declaration of non-performance or ban status or termination

Accordingly, tenderers are required to sign an Affidavit as per the enclosed pro-forma in Annexure-'IV', declaring their status of non-performance or debarment/ termination or Corporate Resolution Process/ liquidation/ Winding up/ CDR/SDR/S4A/ Flexible Structuring or any other restructuring scheme due to financial stress or in default on any debt obligations.

27. Tenderer to be fully responsible for the consequences of misrepresentation

- a. Any suppression of information and misrepresentation will render the tenderer ineligible for the tender along with the forfeiture of Earnest Money. The tenderer will also be liable for disqualification for future tenders of IRCON and its subsidiaries for a period of 2 years.
- b. If any suppression of information and misrepresentation is found after the award of Contract, the Contract may be terminated with forfeiture of EMD, PG and SD (if any). The Contractor will also be disqualified for future tenders of IRCON and its subsidiaries for a period of 2 years.

Annexure -'I'

DETAILS OF THE BIDDER

1. Name of the Bidder & authorized signatory :

1.1 Registered Address of the bidder :

Land Line Telephone Number with STD Code :

FAX Number with STD Code :

Mobile Number :

Email address :

1.2 Address for communication :

Land Line Telephone Number with STD Code :

FAX Number with STD Code :

e-mail Address :

2. Banker's Details for Payment through Electronic Clearing System (ECS):

Name of bank :

Address of bank :

Account No. :

Name of Account Holder :

IFSC :

Telephone No. of Bank with STD Code :

e-mail Address :

Annexure -'II'

(Ref. Clause 24 of 'Instructions to Tenderers')

ASSESSMENT OF PERFORMANCE OF WORKING CONTRACTOR

S. No.	Description	Weightage		Remarks
		Assigned	Obtained	
1	Resource Management/ Financial Status			
1.1	Timely mobilization of manpower, as per the requirement of work and/or as suggested by Engineer in writing	5		
1.2	Timely mobilization of machinery, as per the requirement of work and/or as suggested by Engineer in writing	5		
2	Physical Progress /Project Execution Capability	75		
2.1	Target Vs Achieved review of the progress and adherence to milestones of the work as per above submitted & approved programme (may be judged as below, to be modified depending on availability of front/site or as indicated in Contract) A At 33% time: >20% B At 50% time: >40% C At 100% time: >98% D At 125% time: ≥100%			
3	Quality Assurance Capability			
3.1	Documentation of procedures, work instructions, check list and adherence to the requirements of ISO 9001	2		
3.2	Rectification of defects/non-conformity to quality standards within 7 days: (Nos. mentioned in writing/Rectified within 7 days of writing)	4		
3.3	Implementation of corrective and preventive measures to control non-conformities/ rejections	4		
4	Claims and Disputes			
4.1	Raising unnecessary claims and litigation (Shall be graded negative)	5		
	TOTAL:	100		

Annexure-'III'

(Ref. Clause 24 of 'Instructions to Tenderers')

ASSESSMENT OF PERFORMANCE OF WORKING CONSULTANT

S. No.	Description	Weightage		Remarks
		Assigned	Obtained	
1	Resource Management	15		
1.1	Mobilization time	5		Shall be immediate as per the submission
1.2	Deputation of qualified team leader -overall co-ordination	5		Person so nominated at the time of submission shall not be changed
1.3	Deputation of experienced staff for specific job/ trade	5		Persons identified at the time of submission may not be changed
2	Quality Assurance	20		
2.1	Methodology of submission of drawing	5		There has to be a document stating the methodology of forwarding the drawing
2.2	Methodology to ensure that integrated drawings are issued and not in isolation	5		Working on the same platform and on the same corrected drawing
2.3	Formats for delivery stages of project	5		So as to segregate the drawings for info, tender and working drawings
2.4	Quality of submission – adequate detailing	5		Is there in-house cross-checking facility
3	Physical Progress	65		
3.1	Submission of detailed schedule of delivery with number of drawings to be submitted	5		This needs to be tweaked with construction programme
3.2	Adherence to Milestones for various submissions	10		Important to ensure smooth working
3.3	Capability of change management and incorporation of changes	10		
3.4	Timely response to the queries			Important for execution and is measure of seriousness about the project
A	During design stage	5		
B	During execution stage	5		
3.5	Quality and detailing of Report	20		Speaks about the effort and sincerity
3.6	Timely submission of the reports/ details/ calculations etc.	10		Mandatory for timely execution of the project
	TOTAL:	100		

Annexure-'IV'

(Ref. Clause 1.3 of Instructions to Tenderers)

(Ref. Sub-clause 10.2, 10.4 and Clause 26 of ITT and Clause 5. of Essential Qualifying Criteria)

**FORMAT
AFFIDAVIT**

(On non-judicial stamp paper of ₹ 100/- duly notarized)

I/ We, the undersigned, do hereby solemnly affirm and declare that-

1. Neither our firm nor any of the members/ partners in any form/manner as an individual or the constituent partner in case of partnership firm/JV/MOU have been declared non-performer by Central/ State Government Department in India including authority controlled by them during the last two years prior to the date of bid submission.
2. As on date our bid submission, neither our firm nor any of the members/ partners in any manner as an individual or the constituent partner in case of partnership firm/JV/MOU are debarred for tendering, blacklisted, suspended in Central/ State Government Department in India including authority controlled by them.
3. As on date of our bid submission, neither our firm nor any of the members/ partners in any form/manner as an individual or the constituent partner in case of partnership firm/ JV/MOU are in Corporate Insolvency Resolution Process (CIRP)/ liquidation/ Winding up/ CDR/ SDR/ S4A/ Flexible Structuring or any other restructuring scheme due to financial stress and have not been in default on any debt obligations on the bid due date.
4. No contract agreement between IRCON or its subsidiaries and either our firm or any of the members/ partners in any form/manner as an individual or the constituent partner in case of partnership firm/JV/MOU have been terminated during the last two years prior to the date of our bid submission.
5. We have no objection to IRCON requesting to any bank, person, firm or body and any such agency furnishing pertinent information as deemed necessary or to verify this statement or regarding our competence and general reputation.
6. We understand that further qualifying information may be requested by IRCON and we agree to furnish any such information at the request of IRCON within the prescribed time.
7. We bind ourselves with all the stipulations of the Bidding Document including period of completion, provision of adequate equipment, personnel and other resources required for completion within the stipulated completion period and agree to augment any resources, if found necessary for timely completion of the project, as desired by the IRCON.

8. Certification on submitted/ Attached Documents/ Credentials:

- 8.1 That the facts stated and documents enclosed by us in the Bid are true and correct and we have not concealed/ suppressed any facts/ record/ documents and/ or misrepresented the facts/ record/ documents.
- 8.2 I/ We further declare and certify that I/ We have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
- 8.3 I/ We also understand that my/ our offer will be evaluated based on the documents/ credentials submitted along with the offer and same shall be binding upon me/ us.
- 8.4 I/ We declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.
- 8.5 I/ We understand that if the certificates regarding eligibility criteria submitted by us are found to be forged/ false or incorrect or any suppression of information and misrepresentation is noticed at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender EMD besides disqualification for future tenders of IRCON & its subsidiaries for a period of two years. Further, I/ We (insert name of the tenderer) ** and all my/ our constituents understand that my/ our offer shall be summarily rejected.
- 8.6 I/ We also understand that if the certificates submitted by us are found to be false/ forged or incorrect or any suppression of information and misrepresentation is noticed at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of EMD/ SD and Performance Guarantee besides any other action provided in the contract including disqualification for future tenders of IRCON & its subsidiaries for a period of two years.
- 9. We have read and understood all the provisions included in the Integrity Pact and undertake to abide by them, if applicable.
- 10. We have read and understood all the provisions included in the bid documents and undertake to abide by them.

11.1 Model Certificate for Tenders

"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 a country or, if from such a county, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration with the Competent Authority shall be attached.]"

11.2 Model Certificate for Tenders for Works involving possibility of sub-contracting

"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-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration with the Competent Authority shall be attached.]"

11.3 Model Certificate by Bidder in cases of specified Transfer of Technology (ToT)

"I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that this bidder does not have any ToT arrangement requiring registration with competent authority"

OR

"I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that this bidder has valid registration to participate in this procurement." [where applicable evidence of valid registration with the competent authority shall be attached.]

12. The information furnished by us is true and correct and we understand the consequences, in case, any of the information furnished is not found to be true/ correct and /or any suppression/ concealment of facts/ record or misrepresentation of facts/ record is noticed.

(Signed by the Authorized Representative of the Firm)

Name of the Authorized Representative.

Name of the Firm

Dated:

This Affidavit shall be signed by all the partners of Partnership firm and all the members of Joint Venture (JV)/ MOU (if participation of JV/ MOU is permitted in the tender).

ANNEXURE – IV(A)

PROFORMA FOR STATEMENT OF MINOR DEVIATIONS
(Refer Clause 6 & 7 of ITT)

The following are the particulars of minor deviations from the requirements of the Tender Document:

Sr. No	Clause	Deviations	Remarks (including justification)	Confirming that price of adjustment of each deviation/s is given in Annexure-IV(AA) of financial package (Yes/No)

Note :

1. The Tenderer shall indicate price adjustment against each deviation in Annexure-IV(AA) of BOQ. This price is the price which the tenderer shall reduce from his tender price if deviation(s) is/are accepted by the Employer.
2. Where there is no deviation, the statement should be returned duly signed with an endorsement indicating 'No Deviations'. In case, Performa of deviations is not submitted or submitted as blank, it will be construed that the tenderer has not proposed any deviations from tender documents.
3. If the tenderer proposes deviations in tender documents and/or any other terms and conditions of the tender, other than in this Annexure, it will have no effect.

Signature of authorized signatory on behalf of Tenderer

ANNEXURE – V

(Ref. Clause 3.0 of e-Procurement Notice & sub-clause 19.1 of ITT)

Essential Qualifying Criteria

Deleted

ANNEXURE – VI

(Ref. Clause 10 of Instructions to Tenderers)

INTEGRITY PACT

General

This Agreement (hereinafter called the Integrity Pact) is made on ----- day of the month of----- 202..., between Ircon International Limited (hereinafter called "IRCON"), a government company under the Ministry of Railways, and M/s ----- (hereinafter called the "BIDDER")Description of Bidder.

The expressions "IRCON" and "BIDDER" shall 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 IRCON intends to award, under laid down organizational procedures, contract(s) for(Name of the Tender/ Work) (hereinafter referred to as the 'Contract').

WHEREAS IRCON necessarily requires full compliance with all relevant laws of the land, rules, and regulations, economic use of resources, and fairness/ transparency in relations with its Bidder(s) and/or Contractor(s).

WHEREAS In order to achieve these goals, IRCON has appointed Independent External Monitors (IEMs), as detailed in Para 6 of this Pact, to monitor the entire tender process till the final completion of the contract for compliance with the Integrity Pact by all the parties concerned for all works covered in the Contract.

NOW, THEREFORE,

To Avoid all forms of corruption by following a system that is fair, transparent, and free from any influence/ prejudiced dealings prior to, during, and subsequent to the currency of the contract to be entered into;

To Enable IRCON to obtain the desired works/ stores/ equipment at a competitive price in conformity with defined specifications by avoiding high cost and distortionary impact of corruption on public procurement, and

To Enable BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that IRCON will commit to prevent corruption, in any form, by its officials by following transparent procedures.

THE PARTIES HERETO HEREBY AGREE TO ENTER INTO THIS INTEGRITY PACT AND AGREE AS FOLLOWS:

1. Scope

The Integrity Pact, in respect of the said contract, would be operative from the stage of invitation of bids till the final completion of the contract. Any violation of the same would entail disqualification of the BIDDERS and exclusion from future business dealings as specified in this Integrity Pact.

2. Commitments of IRCON

- 2.1 No official of IRCON, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, any benefit, or any other advantage from the BIDDER, either for themselves or for any person, organization, or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting, or implementation process related to the contract.
- 2.2 IRCON will, during the entire tender process stage, treat all BIDDERS with equity and reason. It will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.

- 2.3 IRCON shall obtain bids from only those party/ parties who have been short-listed or pre-qualified or through a process of open advertisement/ web publishing or any combination thereof.
- 2.4 In case any misconduct on the part of any official(s) of IRCON is reported by the BIDDER to the Chairman & Managing Director of IRCON with full and verifiable facts and the same is prima facie found to be correct by the Chairman & Managing Director of IRCON, necessary disciplinary proceedings, or any other action as deemed fit, may be initiated by IRCON and such a person shall be removed from further dealings related to the subject contract process. In such situations of misconduct, while an enquiry may stand initiated or may be going on, the progress of bidding, execution, etc. under the contract shall not be stalled.

3. Commitments of BIDDERS

- 3.1 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means, and illegal activities during any stage of bid including pre-contract, contract, or post-contract stage. In particular the BIDDER undertakes to abide by the measures given in the following paragraphs.
- 3.2 The BIDDER will not offer, directly or through intermediaries, any bribe, benefit, or any other advantage like commission, fees, brokerage or inducement to any official of IRCON, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting, and implementation of the contract.
- 3.3 The BIDDER has not given, offered, or promised to give, directly or indirectly, any bribe or any benefit or other advantage like commission, fees, brokerage, or inducement to any official of IRCON or their family

members or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract.

- 3.4 The BIDDER will disclose the name and address of its agents and representatives, if any, in India and/ or abroad.
- 3.5 The BIDDER will disclose the payments to be made by them to agents/ brokers or any other intermediary, in connection with this bid/ contract.
- 3.6 The BIDDER further confirms and declares to IRCON that the BIDDER has not engaged any individual or firm or company, whether Indian or foreign, to intercede, facilitate, or in any way to recommend to IRCON or any of its functionaries, whether officially or unofficially, award of the contract to the BIDDER, nor has any amount been paid, promised, or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation, or recommendation.
- 3.7 The BIDDER will not collude with other parties interested in the contract to impair the competition, transparency, fairness, and progress of the bidding process, bid evaluation, contracting, and implementation of the contract.
- 3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means, and illegal activities.
- 3.9 The BIDDER will not use for purposes of competition or personal gain, or pass on to others, any information provided by IRCON as part of the business relationship, regarding plans, technical proposals, and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate lest any such information is divulged.
- 3.10 The BIDDER commits to refrain from making any complaint, directly or

through any other manner, without supporting it with full and verifiable facts. If the BIDDER submits frivolous or false complaint(s), it will be liable to attract sanctions as mentioned in Para 5 of this Pact.

- 3.11 The BIDDER will not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of IRCON, or alternatively, if any relative of an officer of IRCON has financial interest/ stake in the BIDDER's firm, the same will be disclosed by the BIDDER at the time of filing of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956 or any amendment thereto (Annexure-A).

- 3.13 The BIDDER will not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of IRCON.
- 3.14 **All disclosures required under this Pact shall be included as Annexures/ Appendices thereto as an integral part of this Pact.**
- 3.15 If the BIDDER/ Contractor is a partnership or a consortium, this Pact will be signed by all partners or consortium members.

4. **Previous Transgression**

- 4.1 The BIDDER declares that no previous transgression has occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

- 4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract and, if already awarded, can be liable to attract sanctions under this Pact.

5. **Sanctions for Violations**

- 5.1 Any breach of the provisions of this Pact by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle IRCON to take all or any one of the following actions, wherever required: -

5.1.1 To disqualify the BIDDER in pre-award stage without assigning any reason and without any compensation to the BIDDER. However, the proceedings with other BIDDER(s) would continue.

5.1.2 To take such actions/ steps as per provisions made in the tender documents/ contract, if contract already signed, without giving any compensation to the BIDDER.

5.1.3 To debar the BIDDER from participating in future bidding processes as per IRCON's policy on "Suspension/ Banning of Business Dealings" with Agencies" (Annexure-B).

5.1.4 To forfeit, either fully or partially, the Earnest Money Deposit (in pre-contract stage) and/ or Security Deposit/ Performance Bond (after the contract is signed), without assigning any reason therefor.

- 5.2 IRCON will also be entitled to take all or any of the actions mentioned under this Para 5 in the event of commission by the BIDDER, or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860, or Prevention of Corruption Act, 1988, or any other statute enacted for prevention of corruption.

- 5.3 The decision of IRCON to the effect that a breach of any provision of

this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER.

- 5.4 The BIDDER shall be liable to pay compensation for any loss or damage to IRCON in the event of any action under this Para 5 and IRCON shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

6. **Independent External Monitors (IEMs)**

- 6.1 IRCON has appointed Independent External Monitors (hereinafter referred to as IEMs) for this Pact in consultation with the Central Vigilance Commission Names and Addresses of the IEMs are given below:

- 6.1.1 Name: Virendra Kumar Saksena, IRS(Retd),
Address: Flat No. C-175, kendriya Vihar
Sector-51, Noida- 201301
Email: iem.reference@ircon.org
- 6.1.2 Name: Shri Madhusudan Prasad, IAS(Retd)
Address: M-11, Green Park Main
New Delhi – 110016
Email: iem.reference@ircon.org
- 6.1.3 Name: Lt. Gen Harsha Gupta,
PVSM, UYSM, AVSM, YSM, VSM(Retd)
Address: Apartment No A-113, India Bulls Enigma
Dwarka Expressway, Sector-110,
Gurugram (Haryana) – 122017
Email: iem.reference@ircon.org

- 6.2 The task of IEMs shall be to review independently and objectively whether, and to what extent, the Parties comply with the obligations under this Pact.
- 6.3 The IEMs shall not be subject to instructions by the representatives of the Parties and perform their functions neutrally and independently.
- 6.4 Both the Parties accept that the IEMs would have a right to access, without restriction, to all Project documentation of IRCON and the BIDDER upon request and demonstration of a valid interest by the

IEMs. The same is also applicable to sub-contractors of the BIDDER. The IEMs shall be under contractual obligation to treat the information and documents of all the parties with confidentiality.

- 6.5 In case of non-compliance of the provisions of the Integrity Pact, any complaint/ non-compliance can be sent by an aggrieved party, giving specific details of non-compliance with supporting documents, to the designated Nodal Officer of IRCON appointed by the CMD. The Nodal Officer, after verification of the complaint, shall refer the complaint/ non-compliance so received by him to the aforesaid IEM(s). Alternatively, as soon as the IEM notices a violation of this Pact, or has reason to believe that a violation has occurred, or had received a complaint, he will so inform the CMD of IRCON in the first instance.
- 6.6 The IEMs would then examine all complaints, other than anonymous/ pseudonymous complaints, received by them and give their written report to the CMD of IRCON within 6 weeks from the date of reference or intimation to him by IRCON/ BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

7. **Law and Place of Jurisdiction**

This Pact shall be applicable to all tenders invited and finalized in India. This Agreement is subject to Indian Law and the place and jurisdiction for resolving any issue shall be New Delhi.

8. **Other Legal Actions**

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

9. **Validity**

- 9.1 The validity of this Integrity Pact shall be from the date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both IRCON and the BIDDER including Defect Liability/

Warranty period, whichever is later. In case BIDDER(s) is (are) unsuccessful, this Integrity Pact shall cease to be valid on the expiry of two months from the date of award of the contract.

- 9.2 Should any provision of this Pact turn out to be invalid, the remaining parts of this Pact shall remain unaffected which shall be honoured and implemented by the Parties in its intent and spirit.

10. The Parties hereby sign this Integrity Pact at -----on-----

(Full name & Registered Office address)

For and on Behalf of
Ircon International Limited

For and on Behalf of
BIDDER (Full name of
Bidder & regd. address)

Name of the Authorized Officer.
Designation

Name of the Authorized Officer
Designation

(SEAL)

(SEAL)

Witness

Witness

1. _____

1. _____

2. _____

2. _____

Annexure-A

LIST OF RELATIVES

Section 2(77) of the Companies Act, 2013
[Effective from 1st April, 2014]

“Relative”, with reference to any person, means anyone who is related to another, if –

- (i) they are members of a Hindu Undivided Family;
- (ii) they are husband and wife; or
- (iii) one person is related to the other in such manner as may be prescribed;

List of Relatives in terms of Section 2 (77) [as prescribed under Rule 4 of Companies (Specification of Definitions Details) Rules, 2014]

A person shall be deemed to be the relative of another, if he or she is related to another in the following manner, namely:-

1. Father:

Provided that the term “Father” includes step-father.

2. Mother:

Provided that the term “Mother” includes the step-mother.

3. Son:

Provided that the term “Son” includes the step-son.

4. Son's wife.

5. Daughter.

6. Daughter's husband.

7. Brother:

Provided that the term “Brother” includes the step-brother;

8. Sister:

Provided that the term “Sister” includes the step-sister.

Annexure-B

Procedure for Suspension/Banning of Business Dealings with agencies in IRCON

**(Issue No.:01 Date: 10.06.2013)
(Revision:01 Date: 19.10.2022)**

IRCON INTERNATIONAL LIMITED
(A Govt. of India Undertaking)
C-4, DISTRICT CENTRE, SAKET,
NEW DELHI-110017

PHONE: +91-11-26530266; FAX: +91-11-26522000, 26854000

Web: www.ircon.org

CIN: L45203DL1976GOI008171

PROCEDURE FOR SUSPENSION/ fBANNING OF BUSINESS DEALINGS

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1 Introduction

- 1.1 IRCON is a specialized construction organization covering the entire spectrum of construction activities and service in the infrastructure sector, especially Railways. The primary objective of IRCON is timely and efficient execution of projects assigned to it and at the same time ensuring the quality thereof. As a commercial organization IRCON is expected to adopt ethics of highest standards and a very high degree of integrity, commitment and sincerity towards the work undertaken. Accordingly, it is not in the interest of IRCON to deal with such Agencies who commit deception, fraud or other misconduct in the execution of contracts awarded/ orders issued to them. Appropriate action needs to be taken against them in accordance with the procedure prescribed herein.
- 1.2 This procedure shall be applicable for effecting suspension/ banning of business dealings with Agencies working for IRCON. It is incumbent upon IRCON to ensure compliance with the laws and principles of natural justice for banning the business dealings with any Agency. After issue of the Ban order for dealings in IRCON the Management may consider whether or not to refer the matter to the Indian Railways to consider imposition of similar ban by Indian Railways.
- 1.3 Since banning of business dealings involves severe consequences for the Agency concerned, it is essential that an adequate opportunity is provided to the Agency to present its case and any explanation, if tendered, is properly considered. If necessary, a personal hearing may be given to the Agency, before passing an order of banning based on the facts and circumstances of the case on record.

2 Scope

- 2.1 The procedure for (i) Suspension and (ii) Banning of Business Dealings with Agencies, is laid down in these guidelines.
- 2.2 It is clarified that these guidelines do not cover the process for declaring an Agency as “Non Performer” for which instructions have been issued separately.
- 2.3 The suspension/ banning shall be with prospective effect, i.e., it will affect future business dealings only.
- 2.4 These guidelines shall apply to all the Projects/ Regional Offices of IRCON.

3 Definitions

3.1 In these Guidelines, unless the context otherwise requires:

- i) 'Agency' means a 'Bidder/ Contractor/ Supplier/ Consultant'
- ii) 'Competent Authority' and 'Appellate Authority' shall mean the following:
 - a) 'Competent Authority' shall be the concerned Director of IRCON and
 - b) 'Appellate Authority' shall be CMD, IRCON

Note: 'Competent Authority' and 'Appellate Authority' shall not be the same person.

iii) 'Investigating Agency' shall include Central Vigilance Commission (CVC), the Vigilance Departments of IRCON/ Ministry of Railways, Central Bureau of Investigation, or any Central/ State Government Department having powers to investigate into the propriety of working of the Agency for IRCON.

iv) Other Terms used in this Circular shall have the same meaning as assigned to them in Clause 1102 of Chapter-XI of Vigilance Manual of Indian Railways.

4 Grounds on which Suspension/ Banning of Business Dealings can be initiated:

4.1 For security considerations, including suspected disloyalty of the Agency to the State or IRCON, as the case warrants;

4.2 If any Director/ Owner/ Proprietor or partner of the Agency, is convicted by a Court of Law for an offence involving moral turpitude in relation to its business dealings with IRCON, any Government Department/ Ministry or any other Public Sector Enterprise.

4.3 If there is strong justification for believing that any Director, Proprietor, Partner, owner of the Agency has been guilty of malpractices, such as bribery, corruption, fraud, substitution of tenders, interpolations, etc.

4.4 If the Agency engages a public servant dismissed/ removed from service on account of corruption or employs a person convicted for an offence involving corruption, moral turpitude or abetment of such offence; in a position where he could corrupt government servants.

4.5 If the Agency has resorted to corrupt, fraudulent malpractices including misrepresentation of facts;

- 4.6 If the Agency uses intimidation/ threats or brings outside pressure on the Company (IRCON) or/ on its officials in acceptance of Tender or performance of the job under the contract;
- 4.7 Based on the findings of the investigation report of the Investigating Department against the Agency that it has resorted to mala-fide/ unlawful acts or improper conduct on its part in matters relating to IRCON, any Government Ministry/ Department or any other PSU;
- 4.8 If the Agency has submitted a false or wrong Affidavit along with its bid with regard to the credentials of the firm or misrepresented/ manipulated the facts in regard to or in connection with any bid submitted to IRCON.
- 4.9 Established litigant nature of the Agency to derive undue or benefit.
- 4.10 If the Agency misuses the premises or facilities of the IRCON, forcefully occupies or damages the IRCON's properties including land, water, resources, forests/ trees or tampers with documents/ records etc.
- 4.11 If the business dealings with the agency have been banned by the Ministry of Railways.

(Note: The above grounds are illustrative only and not exhaustive. The Competent Authority may decide to suspend/ ban business dealings for any other reasonable cause and sufficient reason)

5 Initiation of Suspension/ Banning:

5.1 Suspension of Business dealing

- 5.1.1 Action for suspension may be initiated by the concerned Coordinating Officer/IRCON on receipt of a report from the Project Head/ Functional Head/ Investigating Department and if it is considered that allegations are of a serious nature, which may warrant banning of business dealings with the Agency. The report should also bring out whether pending banning of business proceedings it would be in the interest of IRCON to enter into fresh business dealings with the Agency or order immediate suspension of further business dealings with the Agency. The Coordinating Officer shall submit his report to the Competent Authority.
- 5.1.2 As far as possible, the existing contract(s) with the Agency may be continued unless the Competent Authority, having regard to the circumstances of the case decides otherwise in the interest of IRCON.
- 5.1.3 If the Competent Authority, after consideration of the matter, including the recommendations of the Investigating Department/ report of the Coordinating Officer, decides that it would not be in the interest of IRCON to enter into business dealings with the Agency pending investigations, he may order suspension of business dealings with the Agency.

- 5.1.4 The Investigating Department may be advised to complete their investigations and submit a final report within a period of three months.
- 5.1.5 The order of suspension of business dealings would not remain effective for a period beyond three months from the date of the issue of the suspension order unless show cause notice for banning of business is issued to the Agency within this period. However, if the final investigation report is not received within this period, the Competent Authority may extend the period of suspension by another three months, during which period the show cause notice must be issued. Once the show cause notice is issued the suspension order will continue till decision by Competent Authority.
- 5.1.6 In case of suspension the Agency must be informed immediately of the suspension order with brief charges under investigation. It is not necessary to enter into correspondence with or offer explanations to the Agency at this stage.
- 5.1.7 The order of suspension can be issued without giving any show cause notice or personal hearing to the Agency. However, the suspension cannot be continued for an indefinite period, unless a show-cause notice for banning of business is issued within 6 (six) months, the period of suspension will either be extended or the suspension shall be revoked.

5.2 Banning of Business Dealings

- 5.2.1 A decision to ban business dealings with any Agency shall normally apply throughout IRCON and its subsidiaries.
- 5.2.2 An Investigating committee not below the CGM level nominated by Competent Authority shall look into the charge(s) against the agency. The functions of the committee shall, inter-alia include:**
- i. To study the report of the Project Head/ Functional Head/ Investigation agency and decide if a prima-facie case for banning exists, if not, send back the case to the Competent Authority.
 - ii. To recommend for issue of show-cause notice to the Agency by the competent authority as per clause 5.2.3.
 - iii. To examine the reply to show-cause notice and call the Agency for personal hearing, if required.
 - iv. To submit final recommendations to the Competent Authority for banning or otherwise.
- 5.2.3 On receipt of the report of the Investigating Committee if the Competent Authority is prima-facie of the view that action for banning of business

dealings with the Agency is called for, a show-cause notice may be issued to the Agency after approval by the Competent Authority.

- 5.2.4 The show cause notice, duly approved by the Competent Authority, may be issued by Regd. A.D./ Speed Post by concerned Coordinating Officer in charge of the project along with a statement containing the imputation of misconduct or malpractice and the Agency should be asked to submit its written explanation or statement in defence within 30 days of the date of notice. If no reply is received, a decision may be taken ex-parte by the Investigating Committee based on facts and evidence on record.
- 5.2.5 If the Agency requests for inspection of any relevant document mentioned in the show cause notice in possession of IRCON, the facility for inspection of such documents may be provided.
- 5.2.6 After considering the reply of the Agency and other circumstances and the recommendation of the investigating committee, a final decision shall be taken by the Competent Authority, if considered necessary after giving an opportunity for personal hearing to the Agency. The Competent Authority may then consider and pass an appropriate speaking order:
- a) exonerating the Agency, if the charges are not established;
 - b) banning the business dealings with the Agency along with the period for which the ban would be operative, if the charges are proved.
 - c) whether or not to refer the matter to the Indian Railways to consider imposition of similar ban by Indian Railways.
- 5.2.7 The order for banning of business dealings by all units of IRCON shall be applicable to the Agency including its allied firms as defined in Para 1102 of IR Vigilance Manual.
- 5.2.8 Decision of Competent Authority will be intimated to the concerned Project Head/ Coordinating Officer, who will convey the same to the delinquent Agency and its allied firms and circulate it to the corporate office and all Project Head / Functional Head/ Project Coordinator for applying these orders uniformly in IRCON. The reasons may not be disclosed in such communications. However, the fact that the representation has been considered should invariably be mentioned in the communication.
- 5.2.9 The validity of the banning order shall be for a specified time period, on expiry of which, the banning order shall cease to operate, unless extended further by competent authority.

6 Appeal against the Decision of the Competent Authority:

- 6.1 The Agency may file an appeal against the order of the Competent Authority for suspension continuing beyond six months or order of banning business dealings with the Agency. The appeal shall lie with the Appellate Authority. Such an appeal shall be preferred within one month from the date of receipt of the order banning of business dealings or order of continuance of suspension order beyond six months.
- 6.2 Appellate Authority shall consider the appeal and pass an appropriate order which shall be communicated to the Agency as well as the Competent Authority.

If the decision of the Competent Authority is modified by the Appellate Authority the same will be intimated by concerned Project Head/ Project Coordinator to the delinquent agency and its allied firm and circulate it with advice to all Project Heads and Corporate Office of IRCON.

ANNEXURE – VII

CHECK LIST for list of documents duly page numbered, signed, stamped by authorized signatory of the Bidder to be scanned, uploaded (in PDF/ JPG format such that file size is not more than 5 MB) with the e-tender and submitted online not later than the prescribed date and time for e-bid submission:

(A) Documents in Original to be submitted in tender box at the address mentioned in the Key Information Table (KIT) Para 1.1 of e-Procurement Notice.

(i) Earnest Money Deposit in the form of Pay Order/DD/FDR/BG as referred in clause no. 9.0 of 'Instructions to Tenderers'. **However, in case of e-BG issued on NeSL platform, the original BG is not required to be submitted in the tender box.**

(B) Documents to be uploaded:

1. Forwarding Letter of the bidder
2. Form of Bid duly filled signed and stamped
3. Program for deployment of man power (Format - 3).
4. Program for deployment of Plant & Machinery on the project (Format - 4).
5. Attested copies of the constitution of its firm such as Partnership Deed, Registration Certificate, MOU/ Joint Venture Agreement, Memorandum and Articles of Association, etc.
6. GSTIN
7. ISO certificates (if any).
8. Schedule of start and completion of work in the form of Bar Chart.
9. Methodology for execution of works.
10. Proof of transaction towards payment of Cost of Tender Document/ Earnest Money through NEFT or RTGS and copy of Earnest Money Deposit of requisite amount in the prescribed form.
11. **Power of Attorney** duly attested by Notary Public in favour of the person signing the e-bidding documents digitally as well as manually.
12. Bankers details (name of bank and branch) along with bidders own bank details (Account No., Name of Account Holder, NEFT/RTGS details) as per Format given in Annexure-I).
13. Affidavit (as per Format given in Annexure-IV)
14. Scanned copy of EMD in prescribed form.
15. Integrity Pact (as per format given in Annexure-VI)
16. Any other details sought through ITT, NIT and tender conditions.

Note :

- i) **Hard copy of uploaded documents listed at (B) above, in original must be presented to IRCON, if requested so, either during the process of finalization or after finalization of the tender.**
- ii) **Financial bid submitted by any bidder in physical form shall not be considered and the same will be left un-opened.**

Tender for CERL II (Urga to Dharamjaigarh including ROR line)

FORMAT-1

Deleted

Tender for CERL II (Urga to Dharamjaigarh including ROR line)

FORMAT-2

Deleted

Tender for CERL II (Urga to Dharamjaigarh including ROR line)

FORMAT-3 <i>(Ref. Sr. No. 5. of Annexure-VII to Instructions to Tenderers)</i> PROGRAMME FOR DEPLOYMENT OF MAN POWER					
S. No.	Name	Qualification	Designation	Total Experience (in years)	Programme for Deployment
1					
2					
3					

Tender for CERL II (Urga to Dharamjaigarh including ROR line)

FORMAT-4

(Ref. Sr. No. 6. of Annexure-VII to ITT)

PROGRAMME FOR DEPLOYMENT OF PLANT AND MACHINERY PROPOSED TO BE ENGAGED ON THE PROJECT

S. No.	Description	Make	Model & Year of manufacture	Capacity	Condition	Nos. proposed to be deployed	Programme of Deployment	Remarks
1								
2								
3								
4								

Tender for CERL II (Urga to Dharamjaigarh including ROR line)

FORMAT- 5
Deleted

Tender for CERL II (Urga to Dharamjaigarh including ROR line)

Existing commitments and on-going construction works:

FORMAT-6

Deleted

SECTION - IV
Appendix to Tender

APPENDIX TO TENDER (ATT)

<u>DESCRIPTION</u>	Reference Clause			
Following materials shall be supplied by the Engineer to the Contractor free of cost :- NIL	NIL			
Following Plant & Machinery shall be issued by the Engineer to the Contractor on hire basis:- NIL	NIL			
The operators for running / operating following Plant & Machinery shall be provided by the Engineer:- Nil Hire charges shall be worked out accordingly.	NIL			
For Price Variation Clause: %age weightage of various component depending upon nature of works:-	Clause 9.0 of Special Conditions of Contract			
Work Classification Components	Earthwork / Blanketing & Ballast supply work	Bridge Works	Service building, staff quarters and platform works	Other works
i) Labour component (L)	20%	10%	10%	20%
ii) Materials component (M) (Other than Bitumen, Cement, Steel – Reinforcement Steel, Structural Steel, HTS wires)	20%	5%	10%	25%
iii) Plant, Machinery and Spares Component (P)	30%	10%	10%	30%
iv) POL (Fuel and Lubricants) Component (F)	30%	10%	10%	25%
v) Cement Component (C)	0%	30%	10%	0%

vi) Reinforcement Steel (S _R)	0%	35%	50%	0%
vii) Structural Steel (S _s)	0%	0%	0%	0%
Star Item Component: *Bitumen - HTS wires (as the case may be) are star items for which price variation will be calculated separately.	Relevant Special Conditions of Contract			
<u>Address of IOCL/ BPCL/ HPCL refinery nearest to the project site for taking price of Bitumen for PVC:-</u>	N/A			

SECTION - V
Special Conditions of Contract

SPECIAL CONDITIONS OF CONTRACT
(Table of Clauses)

Clause No.	Description
1.0	Order of priority of Contract Documents
2.0	General Information
3.0	Scope of Work
4.0	Mobilization Advance
5.0	Procurement of Materials, Approval & Tests
6.0	Plant & Machineries
7.0	Laboratory
8.0	Taxes and Duties
9.0	Price Adjustment
10.0	Completion period, Programme Submission, Commencement of work and Delay & extension of contract
11.0	Defect Liability Period
12.0	Insurance
13.0	Performance Security and Retention Money
14.0	Deployment of Engineers
15.0	Contract agreement
16.0	Approval / Clearances - General obligations of the Contractor
17.0	Measurement of Works and Payments
18.0	Mode of payment and Tax deduction at source
19.0	Quantity Variation
20.0	Updation of Labour data on Indian Railways shramikkalyan portal by Contractor.
21.0	Waste Management

The Conditions of the Contract shall be IRCON's General Conditions of Contract Feb **2021 version dt 17.02.2021 updated upto correction slip No. 7 dated:16.09.2025** with (herein after called as the General Conditions) as modified and added to by the following Special Conditions of Contract which shall be read and construed with the General Conditions as if they were incorporated therewith.

Insofar as any of the conditions of Special Conditions of Contract conflict or be inconsistent with any of the General Conditions, the Special Conditions shall prevail.

SPECIAL CONDITIONS OF CONTRACT

1.0 ORDER OF PRIORITY OF CONTRACT DOCUMENTS:

Where there is any conflict between the various documents in the contract, the following order of priority shall be followed i.e. a document appearing earlier shall override the document appearing subsequently:

- 1) Agreement
- 2) Letter of Acceptance of Tender
- 3) Notice Inviting Tender
- 4) Instructions to the Tenderers
- 5) Appendix to Tender
- 6) Form of Bid
- 7) Special Conditions of the Contract
- 8) General Conditions of Contract
- 9) Technical Specifications
- 10) Relevant codes and Standards
- 11) Drawings
- 12) Bill of Quantities

1A.0 Definitions

"Client/ Owner" means the Department, Organization, Individual, Firm, Company, J.V. or Consortium who awarded the work to Ircon International Limited for execution/ Project Management Consultancy (PMC) of the project of which the works is a part, and shall include its heirs, executors, legal representatives etc.

2.0 GENERAL INFORMATION

- 2.1** IRCON is executing the construction works of new BG Electrified Single Railway line for Chhattisgarh East Rail Corridor Phase-II between Urga to Dharamjaigarh via Bhaisma, Dongaama, Dhinara, Dhaskamunda, Hati and Khadgaon with approximate length 62Km. East Corridor also includes ROR line and Y line for connectivity.
- 2.2** IRCON intends to engage an experienced and resourceful agency who can carry out Civil Works Including Earthwork in excavation and filling for Railway Formation, RCC drain work, Minor Bridges, RUBs and ROBs for the Urga to Dharamjaigarh (0 Km to 62 Km) including RoR line (6.2 km) in connection with the construction of New BG Electrified Single Railway Line Chhattisgarh East Rail Corridor Phase-II From Urga (Km 0) To Dharamjaigarh (Km 62) including RoR line (Km 0 to 6.2) via Bhaisma, Dongaama, Dhinara, Dhaskamunda, Hati and Khadgaon stations in the state of Chhattisgarh over South East Central Railway.
- 2.3** The subject tender envisages Civil Works Including Earthwork in excavation and filling for Railway Formation, RCC drain work, Minor Bridges, RUBs and ROBs for the Urga to Dharamjaigarh (0 Km to 62 Km) including RoR line (6.2 km) in connection with the construction of New BG Electrified Single Railway Line Chhattisgarh East Rail Corridor Phase-II From Urga (Km 0) To Dharamjaigarh (Km 62) including RoR line (Km 0 to 6.2) via Bhaisma, Dongaama, Dhinara, Dhaskamunda, Hati and Khadgaon stations in the state of Chhattisgarh over South East Central Railway.

2.4 Position of Land Acquisition / work front availability:

- 2.4.1** This is a new BG line project where the substantial land is being acquired to execute the project. The contractor can execute the work in Government/Owner Land. However, Land/formation shall be made available progressively.
- 2.4.2** If any stretch of land/formation is not handed over within 06 months of date of start, time extension proportionate to the stretch and held up work will be granted on client's account. No other compensation for delay will be admissible. Further action may be in accordance with the relevant clause of SCC.
- 2.4.3** The contractor should note that Land acquisition is being done. Contractor must deploy resources like manpower, material, and PMV (plant, machinery & vehicles) etc. as per the land availability with the consent of IRCON. Contractor may revise construction/ execution program with the consent of IRCON as per the Land availability. It is contractor's obligation that he has to execute and complete the works (part/All) on available land or so.
- 2.4.4** It is understood that contractor will not submit request for any claim other than time extension with relevant clause on account of "Land acquisition/Land availability for work" and "Design & Drawings of structures". Any claim, on account of this, will not be entertained or payable by IRCON. Contractor may submit his own request/plea for closure of the part or balance works on the site not handed over for a period more than 06 (Six) months beyond the planned date. However, decision of IRCON in the above regard shall be binding to the contractor.
- 2.4.5** The contractor should also note that "No other land will be provided for disposal of unusable excavated material". Contractor should arrange this at his own cost.
- 2.4.6** The contractor should also note that within forest area, construction work is allowed to be done only in day time (6AM-6PM) and no labour camp is allowed in night within forest area.
- 2.4.7** Establishment of Labour camp is not allowed in forest land.

3.0 SCOPE OF WORK

The scope of the work shall comprise broadly of the following:

3.1 Earthwork in Formation, Blanketing & Bridge Work:

- 3.1.1** The scope described hereunder is only indicative in nature and shall be deemed inclusive of all items to be executed for its completion as per specifications and drawings. The contractor shall satisfy himself/herself regarding all aspects of site conditions and collect all site information necessary for the construction and completion of the works. No claim will be entertained by the employer on account of any error or insufficiency in site information given in tender documents. Site information provided is given in good faith by the employer.
- 3.1.2 Formation**
- 3.1.3** Earthwork in Formation (compaction by mechanical means), cutting, and Blanketing with suitable materials as per RDSO guidelines, technical specifications, drawings

and as approved by the Engineer. Earthwork shall be executed with the contractor's own Earth/Excavated earth as per the instructions of the Engineer.

- 3.1.4 The top width of the proposed new alignment for embankment/cutting shall normally be 7.85m in straight and 8.0m on curves with 2 (H): 1 (V) side slopes.

- Hard rock : ¼ (H): 1(V)
- Soft rock : 1/4(H): 1(V)
- Moorum / Hard soil / Ordinary soil : 1 (H): 1 (V)

Note: However, the cutting slope shall be governed by Indian Railway's Guideline for Cutting in Railway Formations Guidelines-2 (latest version)

- 3.1.5 Formation in embankment shall be provided with side slopes of 2 (H): 1(V) or flatter as required. Side slopes and berm shall be turfed. Bank of height more than 6 Mts shall be designed for slope stability and the slope shall be adopted accordingly. Earthwork shall be provided with contractor's own earth / excavated earth as per instruction of the engineer.

3.1.6 **Blanketing:**

The blanketing work will be done as per the technical Specification based on RDSO Guidelines and Specifications for Design of Formation "Comprehensive guidelines and specifications for Railway Formation" Specification No. RDSO/2020/GE:IRS-0004 September-2020, Corrected upto ACS No.1 issued by RDSO, Lucknow (with latest amendments upto date correction slips) or as per the latest specifications and guidelines in-force by RDSO.

3.1.7 **Bridges:**

a) Scope of work for section between 0-30Km broadly includes:

Details of different type of structures are as under:

SI No	Br No.	Chainage	Type of structure	Size of Box	Present Status	Scope under this tender
1	4A	2405	MNB	1x2x2	Yet to Start	Complete Structure
2	5A	3500	MNB	1x3x3	Yet to Start	Complete Structure
3	15A	14250	MNB	1x2x2	Yet to Start	Complete Structure
4	42-A	28623	MNB	1x3x6	Yet to Start	Complete Structure
5	24	16577	MNB	1x2x2	Yet to Start	Complete Structure
6	35	22777	MNB	1x3x3	Yet to Start	Complete Structure
7	23	16262	EOP	1x7.25x7.957	Yet to Start	Complete Structure
8	37	23945	RUB	1x 5.5x4.15	Yet to Start	Complete Structure
9	14	12+314	RUB	1x5.5x4.15	Box Completed	Return wall
10	20	15+237	RUB	1x5.5x4.15	Box Completed	Return wall
11	4	2+033	RUB	1x6.0x5.65	Wall in progress	U-Through
12	16	14+278	RUB	1x6x5.65	Box Completed	U-Through
13	22	15+927	RUB	1x5.5x4.15	Box Completed	U-Through

14	Side Drain	Km 31-36 Km 47-50 Km 51-61	19376 Meter			19376 Meter
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b) The scope of work for section between 30-62 Km broadly includes :

1. Formation work tentatively between Km 40 & Km 62.
2. Concrete works:
 - RCC Drain work:
 - Hati Yard drain – KM 41+075 to Km 46
 - Standard side drain work – 19.37 linear Km in cutting sections.
3. Return wall work of EOPs (EOP-48, 57, 99 & 100) including backfilling, boulder packing & pitching works for all 6 EOPs
4. Approach road works towards station yards at Dhaskamunda, Hati & Khadgaon as well as approach roads at RUBs.
5. RUB approach roofing work at RUB 52, 55, 61, 68, 78 & 91

c) Scope of work for RoR Line broadly includes:

Major scope of works includes:

Sr No	Details of works	Location
1	Concrete works, boulder packing, filter media etc	Bridge No- 5,5A,6,6A,7,8,9,10,11,12
2	Backfill material behind abutment	Bridge No -10,11&12
3	Stone Pitching	Bridge No -07,09 & Y line
4	40mm Expansion Joints	Bridge No -10,11&12

Note:

1. Above scope, type of structure, location & span arrangements are tentative and indicative only and may change during execution of work as per site requirements.
 2. Tenderers are expected to review all the available reports, drawings and information, site details already available and consider the same while planning & executing the work.
 3. The above scope will also include any associated works to enable completion of above works.
- 3.1.8 Checking approved General Arrangement Drawing (GAD) & all other relevant drawings for subject formation/bridges and informing the Engineer for necessary correction for incorporation, if required. In case of any modification in drawings, the contractor shall incorporate the changes in the drawings and always keep a corrected copy of drawings to follow at the site. Planning & executing the construction of all activities relevant to the completion of formation, blanket layers and bridges duly complying with all requirements of Indian Railway Standard Codes and Manuals issued by Ministry of Railways (RDSO & Railway Board), IRC, MORTH, IS and BIS specifications as applicable & as directed by Engineer.
- 3.1.9 It is expected that the contractor selected based on the previous experience of executing the similar work/s is well acquainted with the extent of enabling/ temporary works

required but not specifically indicated in the scope above and not covered for payment in the bill of quantities.

- 3.1.10 Safety bands, ribbons and other gadgets for construction site & workmen shall be maintained as per scheme approved by the Engineer. Safety sign boards duly written with desired logo & safety slogans shall be displayed for information of workers so that they do not enter restricted premises. The quoted rates are deemed to include the cost of all such bands, ribbons, gadgets etc. and nothing extra shall be paid for such items.
- 3.1.11 Construction of temporary approach roads/diversions may be required for transportation of machineries, materials etc. to the site(s) of work. The same has to be constructed and maintained by the contractor at his own cost without any extra financial implication.
- 3.1.12 Based on the approved drawings & design, the contractor will organize surveys and shall prepare detailed layout plans showing approach of railway line, piers, abutments, walls & approaches of bridges etc. and execute the work based on detailed engineering drawings for all items of works. The working drawings shall be prepared by the contractor on computer in standard CAD formats. The contractor has to carry out accurate survey with modern instruments to establish co-ordinate, layout and proper verification system of provided data at site.
- 3.1.13 The contractor shall submit quantities with calculations for any item mandatory for execution, but not covered in subject contract, along with its justification, analysis of rates (AOR) and detailed specifications for any/all such items for finalizing rates & obtain instructions from the Engineer for its execution. Awaiting approval of rates for any such item, the work will not be stopped at site. The AOR is to be prepared based on SECR SOR (latest) and/or MORTH standard codes or practice, MORTH Standard Data Book and/or as per contract conditions.
- 3.1.14 a) The contractor shall submit a detailed work program for each major element of the work and method of statement, using the modern networking techniques for project monitoring, for approval of the Engineer, for all works covered under the contract along with schedule of matching resource deployment proposed within **7 days** from issue of Letter of Acceptance (LOA).
b) The Contractor shall submit **Periodical Drone recording (once in a quarter) to review the progress of work at his own cost.**
- 3.1.15 The contractor shall carry out construction of all components of formation and bridges based upon approved drawings, design & approved methodology, following codal provisions and requirements etc. for safe & sound completion of the formation, foundation, substructure and superstructure of the bridge by providing his own manpower, machineries, and materials etc. complete. The work shall be carried out in terms of specifications of latest editions (and up-to-date correction/amendment/errata) of RDSO/Railways and/or BIS (Bureau of Indian Standard), & other relevant codes, whatever/wherever applicable and as directed by the Employer/ Client.
- 3.1.16 The contractor shall provide complete design for any/all load test e.g. Plate load test, Pile load test, Bridge load test etc. for the required numbers & desired location(s) during construction stage including all temporary works & arrangements etc. for the same, as per specifications and as desired by the Engineer, without claiming any extra cost. Load tests shall be payable as per relevant items of BoQ.

- 3.1.17 Procurement of all types of nuts, bolts, rivets, welding, fixtures, paints etc. as per the technical specifications from approved manufacturers required for the fabrication of girder as per the drawings provided by Employer.
- 3.1.18 To organize, conduct & maintain required & proper quality control test and records for day-to-day work on regular basis. The contractor shall ensure that the work is executed conforming to the approved design, drawings and specifications. For the period for execution of proposed work, the contractor has to follow the quality Assurance, Safety, Health & Environment Manual/Specification (Sub-contracts) of IRCON. The Engineers to be deployed by the Contractor shall work under the direction of the Engineer-in-charge. They shall be bound to carry out all duties related with the work assigned by the Engineer-in-charge or his representative. All facilities & equipment required for proper construction & quality control during execution of entire work such as survey instruments including Total Station, testing equipment, laboratory facilities etc. shall be arranged by the contractor at his own cost.
- 3.1.19 Vertical & Horizontal Clearances shall be maintained for corresponding construction/components of formation and bridges, within/outside Railway/Construction limits for maintaining desired safety/construction requirements.
- 3.1.20 The approaches of the bridges will be compacted earthwork, reinforced earthwork or/and viaduct depending upon the site conditions and requirements of the approved design & drawings. The decision of the Engineer shall be final in this regard.
- 3.1.21 Construction of side drain, drainage scheme & spouts, footpath, smooth transition to and from the bridge approaches, removal & clearing of all left-over material & Debris within/from formation/bridge limits, completion of approaches & adjoining service roads etc., all activities essential for completion of formation and bridges.
- 3.1.22 The contractor shall submit free of cost all "As-Built Drawings (in hard copies and soft copies)" in appropriate size & sufficient number of copies, as directed by the Engineer.
- 3.1.23 **Storage of Material:** All the material at site will have to be properly stacked & stored so as to facilitate inspection. The material should be properly protected from the detrimental effects of nature and fire, damage, theft etc. The contractor shall be responsible for watch & ward and any loss or deterioration on account of above shall lead to rejection of material and contractor has to replace the same at his own cost.
- 3.1.24 The details of works are also indicated elsewhere in the tender documents/drawings. The scope described here is only indicative in nature and shall be deemed as inclusive of all items to be executed for its completion as per Specifications and Drawings.

3.2 Inspection Vehicle:

The contractor shall provide 3 (Three) nos. inspection vehicle (Model- Toyota Innova/Mahindra XUV 500 - 01 No & Mahindra Scorpio / TUV/ Marazzo or similar- 2 Nos) in good condition (model not older than 03 years) for site movement of Engineer or Engineer's representative and bear all expenditure in this regard including running cost up to 4000 km/month/Vehicle or Cumulative 35,000 Km/year/Vehicle during the entire period of contract till completion of work including time extension, if any, and issue of certificate thereof.

Out of above 3 vehicles, 01 vehicles (Model- Mahindra Scorpio / TUV/ Marazo or similar- 1 No) to continue during Defect Liability Period (DLP) with same terms and conditions as stated above.

No separate payment shall be admissible on this account. In case, the vehicles are not provided by the contractor, it will be hired from open market and charges will be recovered from the contractor's bills/dues as decided by the Engineer.

3.3 Site Office

The contractor will set up reasonably furnished site offices at two location (as decided by Engineer) with in project reach of about 80 sqm each by hiring a building or by erecting temporary building/Pre-fab-building with the proper electric arrangement, water supply and sanitary fittings with good roofing & flooring for the exclusive use of the Engineer. Contractor shall also provide two bell boys in office for official working in the site office. In case, the office and/ or bell boys are not provided by the contractor, suitable recovery at the prevailing rate of state Govt's minimum wages per bell boy per month or part there off will be made from the contractor's bills/dues. Location of site offices will be decided by the Engineer.

3.4 Any other incidental / ancillary works required for completion of the work under this contract as per direction of Engineer-in-charge.

3.5 The scope given above is only indicative and not exhaustive.

3.6 SITE REQUIREMENTS

3.6.1 Water Supply

The contractor shall be responsible for the arrangements to obtain water supply for drinking and necessary for execution of work in all respect. IRCON shall not supply water. Rates quoted by the contractor shall include the cost of arranging water supply at the site of works.

3.6.2 Power Supply

Any electric supply required at the site of works for whatsoever purpose shall be arranged by the contractor. The contractor shall make his own arrangements for electric power supply/installation of Diesel generating sets etc. as required for the work at his own cost and the rates quoted shall include the cost of providing such electric supply arrangements required for the works and offices/accommodations etc.

3.6.3 Service Road

The contractor shall make his own arrangements for service roads, paths etc. for carrying his tools and plants labour and materials etc. and will also allow IRCON and other Govt. bodies the use of such paths and service roads etc. for plying its vehicles free of any charges. The contractor is deemed to have included the cost of making any service roads, roads or paths etc. that may be required by him for plying his/ project vehicles for the carriage of men and materials, tools, plants and machinery for successful completion of the work.

Similarly, any other feeder road connecting any of the existing roads will be made by the contractor at his own cost including any compensation that may be required to be paid for the temporary and or private land and without in any way involving IRCON in any dispute for damage and/or compensation.

In case IRCON has its own paths, service roads, the contractor will be allowed to use such paths or service roads free of any charges.

The contractor shall, however, in no way involve IRCON in any claims or dispute whatsoever due to the inaccessibility of such paths or service roads or due to its poor condition and/or maintenance or it being blocked and/or closed.

In case at some locations, sufficient land is not available, the contractor is to arrange stacking ground at his own cost.

3.6.4 Lighting

If lighting is required as per instructions of the Engineer, the contractor shall abide by the directions of the Engineer in this regard. The rates quoted by the contractor shall include the cost of arranging such lighting and nothing extra shall be paid.

3.6.5 Labour Camp

The contractor must establish proper labour camps with a proper water supply and toilet facilities and should keep the areas in a neat and hygienic condition. If female labourers are employed, crèches for their children must also be organized.

The Engineer will have the right to impose a fine up to Rs. 10,000/- on each occasion he finds the contractor at the default of proper arrangements in the labour camp and such amounts of fine will be deducted from the bills of the contractor.

3.6.6 Enabling Works

The rates quoted shall be inclusive of all enabling works such as construction vats, stores, godowns, workshops, maintenance places, offices, housing, labour camp, access roads, service roads, transport arrangements, drinking water facility, lighting etc. whether expressly specified or not. All temporary access facility created during execution of works including ramps in earthwork, concrete or masonry steps, ladders, etc. shall be treated as enabling works.

The contractor shall engage local labour for unskilled work as far as practicable.

3.7 Interfacing & Integration of work:

- 3.10.1 During the currency of this contract, other agencies will also be deployed for execution of signalling and electrification works. The contractor may be required to plan and phase his activities as per the directions of the Engineer for accommodating

simultaneous execution of other works. This has to be accommodated by the contractor without any extra cost to the Employer.

- 3.10.2 The contractor shall take full responsibility in terms of organizing, managing, coordinating and administering the interfacing of all components of works including all issue 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.
- 3.10.3 Under consideration and application of the above clause, the contractor shall and has also the obligation to interact 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, engineer 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.
- 3.10.4 Needless to say, that construction of railway lines requires close coordination among various agencies executing the works in this section, Engineer, Employer and the Railway authorities/IRCON. The contractor shall therefore plan all his works requiring interfacing with other agencies, meticulously, in consultation and coordination with all concerned parties, in advance, for expeditious execution, without causing and delay either to his works or those of others. 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.
- 3.10.5 If the contractor fails 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.

4.0 MOBILISATION ADVANCE

(Applicable for Contracts with value more than Rs 25 Crores)

4.1 Conditions for Payment:

If requested by the Contractor in writing, the Employer/ Engineer shall make an interest-bearing mobilization advance payment to the Contractor for an amount not more than 10 (Ten) percent of the original contract value. The Mobilization Advance shall be interest bearing at the rate of Marginal Cost of Fund Based Lending Rate (MCLR) (1-Year or for the tenor as applicable) of State Bank of India plus 1% or Interest charged by the client whichever is more as effective on the date of approval of payment of Mobilization Advance by the Competent Authority. Interest will be compounded annually on reducing balance. Payment of such advance shall be made after fulfillment of the following conditions to the satisfaction of the Engineer: -

- i) Execution of the Agreement between the Engineer and the Contractor.
- ii) Submission of Performance Security by the contractor in accordance with Clause 8.2 of General Conditions of Contract.
- iii) Submission of an unconditional Bank Guarantee (e-BG issued on NeSL platform is also acceptable) in the format annexed as Annexure-VIII from a Scheduled Bank in India for an amount equal to 110% of the Mobilization Advance being paid. The Bank Guarantee may be submitted into four parts subject to each having a minimum value of 2.5% of the contract value. Such Bank Guarantee shall remain effective until the advance payment along with the interest has been recovered from the Contractor. Bank Guarantee(s) for the amount recovered from the Contractor shall be released to the Contractor progressively.

4.2 **Payment:**

After fulfillment of the pre-conditions as described in para 4.1 above, the mobilization advance shall be released to the Contractor in following stages:

Stage-I- Maximum 5% of contract value on fulfillment of the conditions described in clause 4.1 above.

Stage-II- Maximum 5% of contract value on establishment of site camps and offices, mobilization of necessary Plant and Machinery and man power and other facilities for commencement of work.

Satisfactory Utilization certificate from the contractor for stage-I mobilization advance should be obtained before releasing stage-II advance.

4.3 **Recovery:**

The recovery of mobilization advance along with upto date interest thereon shall commence from the Contractor's on account bills when the value of the work executed under the contract reaches 15% of original contract value, and shall be completed when the value of work executed reaches 85% of the original contract value. The installments on each "on account bill" shall be on pro-rata basis.

- 4.3.1 In the event of amount of outstanding advance with interest thereon becoming more than the available B.G., the Contractor shall have to provide a fresh B.G. with increased amount or provide a separate B.G. to cover additional amount likely to be overdue beyond the existing value of Bank Guarantee.

4.4 **Calculation of Interest:**

Interest shall be compounded on diminishing balance basis on the amount of advance outstanding. The date of issue of cheque/ RTGS/ NEFT shall be reckoned as the date on which the recovery has been made for purpose of computing the outstanding advance and working out the interest.

5.0 PROCUREMENT OF MATERIALS, APPROVAL AND TESTS (Ref.:GCC Clause '34.0' and '56.0'):

5.1 Procurement for works:

Contractor shall make his own arrangements at his cost for all materials required for execution, completion and maintenance of all items of work included in his scope of work to the complete satisfaction of the Engineer. Engineer shall not supply any materials nor shall assist for procurement of any materials required for execution, completion and maintenance of works.

5.2 Procurement of Materials by the Contractor:

5.2.1 Cement: Cement for use in the works will be procured by the contractor from the reputed manufacturers/authorized dealers of OPC-43/53 grade confirming to IS: 8112 /IS: 12269 with latest amendment/ correction for OPC in accordance with the specification of the contract with the prior approval of the Engineer. Cement shall be brought in bags, weight of each shall be deemed to be 50 kg nominal.

The Contractor shall submit the proof of procurement of cement from the agency approved by the Engineer. The Contractor shall also submit the test certificates regarding the quality of the materials.

Cement older than 3 months from the date of manufacture as marked on the bags shall not be accepted.

Use of PPC is subject to approval of Engineer/ Employer.

5.2.2 Steel Reinforcement:

Reinforcement steel (Fe:500) shall be procured by the contractor at their own cost conforming to IS: 1786 with latest correction/amendments.

Steel can be procured from any Primary Steel Producers having Integrated Steel Plant (ISP) and using iron ore as the basis raw material and having in house Iron rolling facilities, followed by production of steel through any one of the processes of DRI-EAF, BG-BOF and Corex-BOF only.

The contractor shall provide certificate issued by plant manufacture/plant consultant (with documentary proof of process) for establishing process being used at plant. It must be ensured that steel being supplied is produced by any one of the processes i.e., DRI-EAF, BF-BOF and Corex-BOF route only, for manufacturing TMT reinforcement bar using iron ore as basis raw materials.

The contractor shall disclose the source from where supplies of Steel is received by him and maintain a detailed record of receipt of steel from different sources and shall keep the challan, receipts number of lorry number, etc. and store balance in a register as directed by the Engineer-in-charge and produce the same to the Engineer as and when demanded. IRCON reserves the right to inspect the plant / works of contractor's supplier.

Material Material to be used should be purchased from authorized and approved sources only. The contractor must submit Manufacturer's Test Certificates and Vouchers. All steel shall be free from rust, scales, laminations, cracks and other surface defects.

The contractor may approach & request The Engineer / Employer, with supporting test certificates satisfying the required quality standards, to approve the source. This will be at sole discretion of The Engineer to accept/reject contractor's request as in the interest of work.

Binding wires used for binding the reinforcement shall be of approved quality soft GI wire not less than 1 mm (18 SWG) size, conforming to IS: 280 & IS: 4826.

5.2.3 **Structural Steel:**

Structural steel shall be procured by the contractor shall be from reputed manufacturer:

The Contractor shall procure structural steel from the manufacturers in accordance with the specifications of the contract. The Contractor shall submit the proof of procurement of structural steel from the agencies. The Contractor shall also submit the test certificates regarding the quality of the steel.

The contractor may approach & request the Engineer / Employer, with supporting test certificates satisfying the required quality standards, to approve the source. This will be at sole discretion of The Engineer to accept/reject contractor's request after ascertaining the genuineness in the interest of work.

However as per guidelines of Railway Board Circular no. 2007/CE-I/CT/8 dated 1st May 2012, all Reinforcement Steel (TMT Bars) and Structural steel shall be procured as per specifications mentioned in BIS's documents IS: 1786 and IS: 2062 respectively. Independent tests shall be conducted, wherever required, to ensure that the materials procured conform to the specifications. All cost of such testing (as per QAP and /or as directed by Engineer) will be borne by the contractor.

These steels shall be procured only from those firms which are Established, Reliable, Indigenous & primary producers of Steel having Integrated Steel Plants (ISP), using iron ore as the basic raw materials and having in-house iron rolling facilities, followed by production of liquid steel and crude steel, as per Ministry of Steel's guidelines.

Only certain isolated sections of structural steel, not being rolled by ISPs, can be procured from the authorized re-rollers of ISPs or authorized licensee of BIS having traceability system and who use billets produced by ISPs. Traceability shall be

ensured by an officer specially authorized by the Engineer-in-Charge on case-to-case basis for this purpose.

In all cases of such procurement prior approval is necessary from the Engineer-in-Charge.

The contractor has to arrange at his own cost cement & steel after taking approval from engineer-in-charge for samples he intends to use. The material must be conforming to the specifications and suitability of the site.

5.2.4 **PAINTS:**

- a) All All Paints/ primers etc. should be procured from reputed brands.

The final coat of paint at site shall be of same brand and of color and shade used by the contractor at the workshop. Before doing final coat, all the damaged shop paint, if any, shall be duly attended and touched up properly to the satisfaction of Engineer.

- b) All paints/ primers shall be brought in sealed drums and each drum shall be opened in the presence of the Engineer-at-site before use. All paints/primers should be used before their date of expiry as provided by its manufacturer.
- c) Samples of any paints/ primers supplied by the contractor shall be got tested at the contractor's cost in any recognized laboratory preferably NABL approved laboratories. The testing frequency shall be as detailed in QAP or batchwise.

5.2.5 **WELDING ELECTRODES, MIG WIRE, SAW WIRE & FLUX**

All welding consumables to be used in the work should conform to IRS approved quality and should be procured from the approved firm as listed in the then current list of approved vendors of RDSO. All welding consumables shall be kept under dry conditions. Any electrode with parts of its flux coating broken away or otherwise damaged shall be rejected. Any electrode older than six months from the date of manufacture or older than the date of expiry as specified by manufacturer should not be used.

5.2.6 **FASTENERS (RIVETS AND BOLTS):**

All fasteners to be used in the work should conform to IRS/IS approved quality and should be procured from the approved firm as listed in the then current list of approved vendors of RDSO. Usage of rivets or/and HSFG bolts will be as per direction of engineer in charge. Since the components of the steel girders are comprising of mild steel as well as high tensile steel both, rivets of only high tensile bar conforming to the relevant IS code shall be used. HSFG Bolts to be used as per guideline of IRS Steel Bridge Code, IRS-B1 and BS-111 (guidelines for use of High Strength Friction Grip (HSFG) bolts for bridges on Indian Railways) and as approved by Engineer.

All other materials required to complete the work shall be supplied by the contractor at their own cost for the works covered by this tender document, conforming to specifications. The Contractor shall state the actual source of supply of materials to be supplied by them and shall submit test certificate & samples for prior approval. The contract will also bear all charges towards testing and approval of such samples for getting the source approval from Employer / Engineer/ Client.

During the execution of work, all materials brought to site by the contractor must be offered for inspection and passed by the engineer or his representative before being used in the work and such approval shall be recorded in a register maintained for that purpose. Only passed material shall be used by the contractor.

5.2.7 TEST CERTIFICATES:

5.2.8 The contractor shall submit the manufacturer's test certificates (MTC) of all materials brought to site like cement, steel rods, structural steel, welding consumables, fasteners, aluminum wire, paints, primers, concrete admixtures etc. The sampling and testing of all materials, after being brought at site, shall be done as per approved QAP or technical specifications and the testing shall be done from Govt. approved (NABL) laboratories/Institutions. All cost towards this sampling and testing will be borne by the contractor. Besides, the Engineer will have the right to get the above materials (even the stone aggregates, sand, water etc.) tested from any Govt. approved lab/Institutions, as and when required at contractor's cost.

5.2.9 STORAGE AND CONSUMPTION OF MATERIALS AT SITE:

- a) The Engineer shall not be responsible for providing, at his own cost, suitable storage facilities for the materials brought/arranged by the contractor and/or for any materials issued/provided by the Engineer/Employer. Nothing extra shall be payable on this account.
- b) Cement in bags shall be stacked by the contractor in godowns constructed by him with weatherproof roofs, suitable floors and walls as acceptable to the Engineer.
- c) Contractor shall construct suitable godowns and storage facilities at site(s) of work, at his own cost, for storing other materials ensuring safety against damage by sunlight, rain, dampness, fire, theft etc. and also deploy necessary watch & ward and other establishment for the purpose at his own cost.
- d) The contractor shall not remove any material, brought for the subject work, from the site or site godowns / storage facilities without written permission of the Engineer.

5.2.10 RECORD OF MATERIALS

The contractor will maintain record of all materials brought and consumed in proper formats / registers and as approved by Engineer.

The contractor shall on demand produce to the Engineer original receipts/vouchers/invoices in respect of the materials brought to site by him. As far as practicable, the contractor shall ensure the materials brought to site are in sealed containers/packings bearing manufacturers marking.

Nothing extra shall be payable on this account of maintain proper records of the materials and its challans, test certificates, consumption etc. to the satisfaction of the Engineer.

5.2.11 DRAWINGS TO BE SUPPLIED BY ENGINEER

The Engineer shall supply drawings to the contractor from time to time during the progress of the works. The contractor shall carry out the work in accordance with the said drawings or any modification thereof as decided by the Engineer. In case, there is some discrepancy in the drawings or some drawings/details have not been made available to the contractor, the contractor shall inform the Engineer in advance with minimum notice period of 15 (fifteen) days.

6.0 SUPPLY OF PLANT AND MACHINERY BY EMPLOYER/ ENGINEER (Ref.: G.C.C. Clause '35.0' and '56.0')

Contractor shall make his own arrangements at his cost for all Plant, Tools and Machinery required for execution, completion and maintenance of all items of work included in his scope of work to the complete satisfaction of the Engineer. Engineer shall neither supply any Plant and Machinery nor assist for procurement of any Plant and Machinery required for execution, completion and maintenance of works.

7.0 LABORATORY

- 7.1 The contractor shall establish a self-sufficient quality control laboratory before physical start of work to carry out necessary test for the quality control of the earthwork, design and quality control of concrete mix such other related tests as may be necessary and desirable in the interest of the work. In the event of failure of the contractor even after giving 7 days' notice to contractor to provide a site laboratory with necessary equipment and technical personnel, IRCON shall be within its rights to take further action in terms of GCC. Further, cost of tests and all incidental and departmental charges etc. carried out at any other approved laboratory/test house shall be borne by the contractor.
- 7.2 The laboratory should have the following items of laboratory equipment with accessories for testing.
- i) Modified AASHTO compaction apparatus as per IS:2720.
 - ii) Lab CBR testing equipment for conducting CBR testing on soils

- iii) Sieve Analysis, Slump Test, Impact & Crushing Value Test, etc. on aggregates
- iv) Compression and flexural strength testing machine for concrete

The laboratory should also be well equipped for the following testing facilities.

- i) Earthwork
 - a. Grain Size Analysis
 - b. Atterberg Limited
 - c. Modified Procter density (OMC & MDD)
 - d. Field Density
- ii) Coarse Aggregates
 - a. Water absorption
 - b. Gradation
 - c. Aggregate impact Value (AIV)
 - d. Elongation & Flakiness Index
- iii) Fine Aggregates
 - a. Gradation
 - b. Bulking
- iv) Cement
 - a. Initial/ Final setting time
 - b. Soundness
- v) Concrete
 - a. Slump Test
 - b. Temperature
 - c. Workability
 - d. Compressive and Flexure Strength
 - e. Flowability

7.3 The laboratory shall have facility for carrying out all tests required, as per specifications or as stated elsewhere in the contract, including supply of laboratory equipment and also provision of adequate number of qualified personnel, erection, maintenance and running of laboratory including all consumable like chemicals and reagents. If the laboratory is not provided, a deduction of Rs.50,000/- per month for first 2 months and thereafter Rs. 2,00,000/- per month will be made on monthly basis. In addition of these, field testing equipment are also to be arranged wherever required and instructed by Engineer.

7.4 The Engineer may however; at his discretion for work costing more than Rs.50.00 lakhs, allow the tests to be carried out in any other approved laboratory under the supervision of his representative. All the tests, in such

case, shall be got done by the contractor at his own cost including cost of transporting the specimen to the laboratory, and any other incidental charges.

- 7.5 The decision of the Engineer in regard to the selection of the laboratory shall be final.
- 7.6 Departmental officials concerned with contract shall be entitled at any time to inspect and examine materials intended to be used in or on the works, either on the site or at factory or workshop or other place(s) where such materials are assembled, fabricated or manufactured or at any place(s) where these are lying or from which these are being obtained and the contractor shall give such facilities as may be required for such inspection and examination.
- 7.7 No payment shall be made to the Contractor for setting up laboratory or getting any tests in-house (in the workshop premises) or from the outside laboratory approved by the Engineer. Contractor shall quote their rate accordingly keeping in view that no any extra payment shall be made over and above the rate quoted by the Contractor.
- 8.0 TAXES AND DUTIES (Ref.: G.C.C. Clause '56.0','57.0', '62.0' '64.0'and sub-clause no. 4.3, 4.4 and 4.5 of 'Instructions To Tenderers')**
- 8.1 The Contractor shall get registered with the concerned Goods and Services Tax Department of the relevant state(s) of the project and submit a copy of the same to the Employer/ Engineer. He shall be responsible for filing Goods and Services tax returns and assessments, as necessary as per prevalent Laws, Rules and Regulations and shall also furnish necessary certificates to Employer/ Engineer from time to time. (Refer clause 56.0 (v) of GCC).
- 8.2 Wherever certain exemptions/ benefits are available on custom duty the Contractor shall consider the same while quoting his rates. For instance, materials/ Plant and Machinery etc. used for execution of the projects financed by International organizations enjoy exemption from custom duty under Foreign Trade Policy as Deemed Export on fulfilling the conditions as per Govt. notifications. Similarly the Contractor shall ensure that whenever any benefits are available under any other law, these shall be considered while quoting the rates.
- 8.3 The contractor shall ensure that whenever any benefits are available under GST after the date of submission of the tender, these shall be passed on to the employer
- 8.4 "If there is any Change to the existing rates of Royalties of the state / Central Governments or levy of any new type of Royalties or substitution of existing Royalties after the last date of submission of tender, it shall be borne by

Employer/Engineer. The increase or decrease in the liability on this account will be dealt with accordingly. Increase in liability shall be reimbursed as per actual on submission of computation of increased liability statement with documentary evidences in the form of challans / returns of the Contractors/ suppliers to the satisfaction of Employer/Engineer. Similarly, in case of reduction, the benefits of reduction in liability shall be passed on to Employer/Engineer immediately commencing from the first periodical return falls due. Computation of decrease in liability shall be submitted by the contractors/ suppliers/ service providers, examined and agreed by Employer/Engineer. All the changes in rules and consequent payments should be supported by documentary evidences.

In case the contractor fails to intimate and does not pass on the benefit to Employer, he may be liable to a penal interest for the period for which benefit has not been passed on at the rate of SBIMCLR+3%. In addition to this penalty equal to 10% of amount of benefit shall also be levied in case benefit fallen due has not been intimated to Employer.

Any Amount/Interest/penalty which is required to be paid by Employer/Engineer due to the default by the Contractor / Supplier / service provider to comply with Royalties provisions as prescribed in laws, rules and regulations shall be recovered from the Contractor / Supplier / service provider and adjustment shall be made when mismatch is attended and solved and credit is extended to Employer/Engineer.

The contractor shall be liable to submit the Royalty payment receipt as per the applicable norms and the prevailing rate to the extent materials are used on the project. IRCON shall be free to deduct suitable amount from RA Bill of the contractor if the Royalty payment receipt is not submitted by the contractor before releasing payment. Amount deducted by the Engineer on account of Royalty shall only be released on submission of Royalty payment receipt/ Royalty Clearance Certificate by the contractor. However, Contractor shall be liable to submit Royalty Clearance Certificate from the concerned authority before releasing the final bill.

8.5 QUOTING OF RATES

- 8.5.1 This tender is invited on single percentage rate basis. The rates are to be quoted as per the instructions in 'Bill of Quantities 'and contained in the tender documents.
- 8.5.2 The quoted rates shall be deemed to include all the cost towards the scope of work of contractor as detailed in the tender documents including cost of all materials, labour, plant and machinery, supervision, overhead, profit, insurances including transit insurance, replacement/ correction of defective works, incidentals etc. and all the taxes and duties etc complete. Nothing extra over the accepted rates will be payable unless noted expressly otherwise in the tender documents.

9.0 PRICE ADJUSTMENT FOR CIVIL & COMPOSITE WORKS (Ref.: G.C.C. Clause '57.0')

- 9.1 Price adjustment shall be applicable for tenders of value more than Rs 2.00 Crore.
- 9.2 The price adjustment, if any, as admissible in terms of the above clauses, shall be made for increase or decrease in rates and prices of labour, materials, Plant, Machinery and Spares, fuels and lubricants, Bitumen, Cement, Steel and other materials in accordance with the following principles and procedures as per formula given below. The amount certified in each payment certificate shall be adjusted by applying the respective price adjustment factor to the payment amounts.

The percentages of various components other than star items as given in Appendix to tender shall govern for working out the price adjustment:

- i) Labour component (L)
- ii) Materials component (M)
(Other than Bitumen, Cement, Steel – Reinforcement Steel, Structural Steel, HTS wires)
- iii) Plant, Machinery and Spares Component (P)
- iv) POL (Fuel and Lubricants) Component (F)
- v) Cement Component (C)
- vi) Reinforcement Steel (S_R)
- vii) Structural Steel (S_s)

Star Items: As specified in the Appendix To Tender

The weightage of above components shall vary depending upon the nature of the tender.

The price adjustment in various components shall be worked out, on monthly basis, as under:

9.2.1 Adjustment for Labour Component:

Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the following formula:

$$V_L = 0.85 \times L/100 \times R_G \times (L_I - L_O)/L_O, \text{ where}$$

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

L = Percentage of labour component of the work.

R_G = Total value of work done excluding GST during the month excluding the cost of star items. It would include the value of the materials on which secured advance has been paid, if any, during the month, less the value of the materials in respect of which the secured advance has been recovered, if any, during the month. This will exclude cost of works on items for which

rates were fixed under sub-clause 59.3 of General Conditions of Contract. (If applicability of PVC and separate Base month for items for which rates were fixed under sub-clause 59.3 of GCC has been agreed at the time of fixing of rates of such items then separate price variation shall be calculated for the value of work done (excluding GST) against these items.)

L_o = The Consumer Price Index for industrial workers - All India, published in Reserve Bank of India Bulletin for the base month.

L_i = The Consumer Price Index for industrial workers - All India published in Reserve Bank of India Bulletin for the month one month prior to the period of payment under consideration.

9.2.2 **Adjustment for Materials** (Other than Bitumen, Cement, Steel – Reinforcement Steel, Structural Steel, HTS wires) Component:

Price adjustment for increase or decrease in the cost due to Materials shall be paid in accordance with the following formula:

$$V_M = 0.85 \times M/100 \times R_G \times (M_i - M_o)/M_o, \text{ where}$$

V_M = Increase or decrease in the cost of work during the month under consideration due to changes in rates for Materials.

M = Percentage of Materials component of the work.

R_G = Total value of work done excluding GST during the month excluding the cost of star items. It would include the value of the materials on which secured advance has been paid, if any, during the month, less the value of the materials in respect of which the secured advance has been recovered, if any, during the month. This will exclude cost of works on items for which rates were fixed under sub-clause 59.3 of General Conditions of Contract. (If applicability of PVC and separate Base month for items for which rates were fixed under sub-clause 59.3 of GCC has been agreed at the time of fixing of rates of such items then separate price variation shall be calculated for the value of work done (excluding GST) against these items.)

M_o = Wholesale price index in India (Average) - All Commodities published in Reserve Bank of India Bulletin for the base month.

M_i = Wholesale price index in India (Average) - All Commodities published in Reserve Bank of India Bulletin for the month one month prior to the period of payment under consideration.

9.2.3 **Adjustment for Plant, Machinery and Spares Component:**

Price adjustment for increase or decrease in the cost due to Plant, Machinery and Spares shall be paid in accordance with the following formula:

$$V_P = 0.85 \times P/100 \times R_G \times (P_I - P_O)/P_O, \text{ where}$$

V_P = Increase or decrease in the cost of work during the month under consideration due to changes in rates for Plant, Machinery and Spares.

P = Percentage of Plant, Machinery and Spares component of the work.

R_G = Total value of work done excluding GST during the month excluding the cost of star items. It would include the value of the materials on which secured advance has been paid, if any, during the month, less the value of the materials in respect of which the secured advance has been recovered, if any, during the month. This will exclude cost of works on items for which rates were fixed under sub-clause 59.3 of General Conditions of Contract. (If applicability of PVC and separate Base month for items for which rates were fixed under sub-clause 59.3 of GCC has been agreed at the time of fixing of rates of such items then separate price variation shall be calculated for the value of work done (excluding GST) against these items.)

P_O = Index Number of Wholesale prices in India by Groups and Sub Groups (Averages) for 'Manufacture of machinery for mining, quarrying and construction' - published in Reserve Bank of India Bulletin for the base month.

P_I = Index Number of Wholesale prices in India by Groups and Sub Groups (Averages) for 'Manufacture of machinery for mining, quarrying and construction' - published in Reserve Bank of India Bulletin for the month one month prior to the period of payment under consideration.

9.2.4 Adjustment for POL component:

Price adjustment for increase or decrease in the cost due to POL shall be paid in accordance with the following formula:

$$V_F = 0.85 \times F/100 \times R_G \times (F_I - F_O)/F_O, \text{ where}$$

V_F = Increase or decrease in the cost of work during the

month under consideration due to changes in rates for POL.

F = Percentage of POL component of the work.

R_G = Total value of work done excluding GST during the month excluding the cost of star items. It would include the value of the materials on which secured advance has been paid, if any, during the month, less the value of the materials in respect of which the secured advance has been recovered, if any, during the month. This will exclude cost of works on items for which rates were fixed under sub-clause 59.3 of General Conditions of Contract. (If applicability of PVC and separate Base month for items for which rates were fixed under sub-clause 59.3 of GCC has been agreed at the time of fixing of rates of such items then separate price variation shall be calculated for the value of work done (excluding GST) against these items.)

F_o = Wholesale price index in India (Average) for Fuel, Power, Light and Lubricants published in Reserve Bank of India Bulletin for the base month.

F_I = Wholesale price index in India (Average) for Fuel, Power, Light and Lubricants published in Reserve Bank of India Bulletin for the month one month prior to the period of payment under consideration.

9.2.5 **Adjustment for Cement:**

Price adjustment for increase or decrease in cost due to Cement shall be paid in accordance with the following formula:

$$V_C = C/100 \times R_G(W_c - W_{co})/W_{co}, \text{ where}$$

V_C = Increase or decrease in the cost of work during this month under consideration due to changes in rates of Cement.

C – Percentage of Cement Component of the work

R_G = Total value of work done excluding GST during the month excluding the cost of star items. It would include the value of the materials on which secured advance has been paid, if any, during the month, less the value of the materials in respect of which the secured advance has been recovered, if any, during the month. This will exclude cost of works on items for which rates were fixed under sub-clause 59.3 of General Conditions of Contract. (If applicability of PVC and separate Base month for items for which rates were fixed under sub-clause 59.3 of

GCC has been agreed at the time of fixing of rates of such items then separate price variation shall be calculated for the value of work done (excluding GST) against these items.)

W_C = Wholesale price index in India (Average) for sub-group (Cement) published in Reserve Bank of India Bulletin for one month prior to the period of payment under consideration.

W_{CO} = Wholesale price index in India (Average) for sub-group (Cement) published in Reserve Bank of India Bulletin for the base month.

9.2.6 **Adjustment for Steel:** Price adjustment for increase or decrease in cost due to Steel shall be paid in accordance with the following formula:

$$V_S = V_{SR} + V_{SS}$$

V_S - Increase or decrease in the cost of work during this month under consideration due to changes in rates of Steel.

9.2.6.1 For Reinforcement Steel (V_{SR})

$$V_{SR} = S_R / 100 \times R_G (S_{RC} - S_{RB}) / S_{RB}$$

S_R - Percentage of Reinforcement Steel Component of the work

V_{SR} = Increase or decrease in the cost of work during this month under consideration due to changes in rates of Reinforcement Steel.

R_G = Total value of work done excluding GST during the month excluding the cost of star items. It would include the value of the materials on which secured advance has been paid, if any, during the month, less the value of the materials in respect of which the secured advance has been recovered, if any, during the month. This will exclude cost of works on items for which rates were fixed under sub-clause 59.3 of General Conditions of Contract. (If applicability of PVC and separate Base month for items for which rates were fixed under sub-clause 59.3 of GCC has been agreed at the time of fixing of rates of such items then separate price variation shall be calculated for the value of work done (excluding GST) against these items.)

S_{RB} = Index number of Monthly Whole Sale Price Index for the relevant category of mild steel item as mentioned in Note: i), published by Office of Economic Adviser, Government of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP), for the base month.

S_{RC} = Index number of Monthly Whole Sale Price Index for the relevant category of mild steel item as mentioned in Note: i), published by Office of Economic Adviser, Government of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP), for the month one month prior to the period of payment under consideration.

9.2.6.2 For Structural Steel (S_s)

$$V_{SS} = S_s / 100 \times R_G (S_{SC} - S_{SB}) / S_{SB}$$

V_{SS} = Increase or decrease in the cost of work during this month under consideration due to changes in rates of Structural Steel.

S_s - Percentage of Structural Steel Component of the work.

R_G = Total value of work done excluding GST during the month excluding the cost of star items. It would include the value of the materials on which secured advance has been paid, if any, during the month, less the value of the materials in respect of which the secured advance has been recovered, if any, during the month. This will exclude cost of works on items for which rates were fixed under sub-clause 59.3 of General Conditions of Contract. (If applicability of PVC and separate Base month for items for which rates were fixed under sub-clause 59.3 of GCC has been agreed at the time of fixing of rates of such items then separate price variation shall be calculated for the value of work done (excluding GST) against these items.)

S_{SB} = Index number of Monthly Whole Sale Price Index for the relevant category of mild steel item as mentioned in Note: i), published by Office of Economic Adviser, Government of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP), for the base month.

S_{SC} = Index number of Monthly Whole Sale Price Index for the relevant category of mild steel item as mentioned in Note: i), published by Office of Economic Adviser, Government of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP), for the month one month prior to the period of payment under consideration.

Note: i) Relevant categories of steel for the purpose of operating the above Price Variation formula as mentioned in this Clause shall be as under:

Sl. No.	Category of Steel Supplied for the 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)
(A)	For Reinforcement Steel	Index number of Monthly wholesale Price Index for the "MS Bright Bars" individual commodity of group item (d) Mild Steel-Long Products under (N) MANUFACTURE OF BASIC METAL"
(B)	For Structural Steel	Average of following 2 categories

		(i) 'Angles, Channels, Sections, Steel' individual commodity of group item (d) Mild Steel-Long Products under (N) MANUFACTURE OF BASIC METAL
		(ii) 'e. Mild Steel – Flat Products' of (N) MANUFACTURER OF BASIC METAL

9.2.7 Base month shall be considered as one month prior to the due date of submission of the tender.

9.2.8 Price Adjustment for increase or decrease in the cost of star items component.

Price adjustment for increase or decrease in the cost of respective star items for the quantity certified in each payment certificate shall be adjusted on the basis as under:

(i) Bitumen:

Price adjustment for increase or decrease in the cost of Bitumen shall be paid in accordance with the following formula:

$$V_B = Q(W_B - W_{BO}), \text{ where}$$

V_B = Amount of Price Variation in Bitumen payable/ recoverable.

Q = Weight of Bitumen in tons supplied by contractor as per the on account bill for the month under consideration

W_B = IOCL's, BPCL's, HPCL's ex-works price (in Rupees per tonne) for the relevant grade of bitumen supplied by the contractor as prevailing on the 1st day of the month in which the bitumen was purchased by the contractor or as prevailing on the 1st day of the month in which bitumen was brought to the site by the contractor, whichever is lower.

W_{BO} = IOCL's, BPCL's, HPCL's ex-works price (in Rupees per tonne) for the relevant grade of bitumen supplied by the contractor as prevailing on the first day of the month in which the tender was opened.

Note: Prices of IOCL/ BPCL or HPCL refinery whichever is nearest to the project site as identified by the project in Appendix to Tender at the time of calling tender shall be considered for the purpose of PVC.

(II) HTS WIRE:

The formula for calculating the amount of variation on account of variation in prices of HTS Wire would be as indicated below:

$$V_H = Q (W_H - W_{Ho}), \text{ where}$$

V_H = Amount of Price Variation in HTS Wire payable/ recoverable

Q = Weight of HTS Wire in tons used by contractor as per the on account bill for the month under consideration

W_H = M/s Usha Martin's/ TATA STEEL's ex-works price (in Rupees per tonne) for the relevant dia of HTS Wire whichever is used in the work by the contractor as prevailing on the 1st day of the month in which the HTS Wire was purchased by the contractor or as prevailing on the 1st day of the month in which HTS Wire was brought to the site by the contractor whichever is lower.

W_{HO} = M/s Usha Martin's/ TATA STEEL's ex-works price (in Rupees per tonne) for the relevant dia of HTS Wire supplied by the contractor as prevailing on the first day of the month in which the tender was opened.

The contractor shall have to produce the self attested copy of challans/ gate pass/ proforma invoices/ bill of procurement, manufacturer's test certificate along with originals for verification during payment of the star items.

If any discrepancy found in the rate of procurement of bitumen/ HTS wire from the proforma invoices/ bill produced by the Contractor, in such a case, the lowest rate of approved make/ brand for the specific dia, section and grade on the date of material brought to site shall be considered. In this regard, decision of the Engineer shall be final and binding.

- 9.3 To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of this clause, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingencies of such other rise or fall of costs.

9.4 Price adjustment during extended period of Contract:

The price adjustment as provided hereinabove shall be applicable upto the stipulated date of completion of work including the extended period of completion, for the reason not attributable to the contractor.

However, in case extension of time is granted to the contractor for the reasons attributable to the contractor, the price adjustment for the said period of extension shall be done as below:

- 9.4 (a)** In case the indices increase above the indices applicable to the last month of original completion period or the extended period not attributable to the contractor's account, as the case may be, the price adjustment 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 not attributable to the contractor's account, as the case may be.
- 9.4 (b)** In case the indices fall below the indices applicable to the last month of original completion period or the extended period not attributable to the

contractor's account, as the case may be, then the lower Indices shall be adopted for the price adjustment for the period of extension granted to the contractor for the reasons attributable to the contractor.

10.0 COMPLETION PERIOD

- 10.1 The work is required to be completed within a period as specified in the Key Information Table in Para 1.1 of e-Procurement Notice from the date of issue of letter of acceptance i.e. **07 months from date of issue of Letter of Acceptance including monsoon period.**
- 10.2 The work has to be executed in co-ordination with other agencies working on or near the project.
- 10.3 It shall be obligatory for the tenderer to submit his program of work and time schedule in such a form as to facilitate monitoring of the work using the modern networking techniques, as to how he proposes to complete the work within the stipulated date.
- 10.4 Within 7 (Seven) days of the acceptance of the tender and before the work is commenced; the contractor shall have to submit a detailed program for each major element of the work, using the modern networking techniques for project monitoring, for approval of the Engineer. The construction program will show the general methods, arrangements, order and timing for all the significant activities in the works identifying the critical path for the work clearly, along with monthly cash flow. The program shall clearly provide for and indicate the time required for the preliminaries before starting the work and shall indicate the dates of commencement and completion of the various sections of the work.
- 10.5 The agreement or the approval of the program by the Engineer shall not relieve the contractor of any of his responsibilities to complete the whole works within the stipulated completion period.
- 10.6 The contractor shall submit to the Engineer, for approval, an updated Program, whenever the Engineer may so direct, to take account of the actual progress of the works under the contract so as to achieve completion either before the due date for completion or by the due date for completion or as soon as practicable thereafter. The Engineer may further require the contractor to indicate the means by which the programmed progress will be achieved. If the Contractor does not submit an updated program within a reasonable period as indicated by the Engineer, the Engineer may withhold the payment of next on account bill until the overdue program is submitted.
- 10.7 In case of any delay in the completion period, the extension of the same shall be dealt as per the clause 49.0 of General Conditions of the contract.

10.8 DELAY AND EXTENSION OF CONTRACT PERIOD

As per Clause no. 49 of General Conditions of contract.

11.0 Defect Liability Period

The Contractor shall maintain, rectify and make good at his own cost any defect/ deficiencies, which may develop in the work or as notified by the Engineer during Defect Liability Period as specified in the Key Information Table in Para 1.1 of e-

Procurement Notice **which shall extend for a period of twelve (12) months commencing from the date of completion of the Works.**

Notwithstanding the foregoing, any defect(s) arising in the supplied sleepers after the expiry of the Defect Liability Period shall be covered under the Indemnity Bond furnished by the Contractor, in accordance with the Guarantee/Warranty provisions stipulated elsewhere in the Tender Document.

However, maintenance during the Defect Liability Period shall not include day-to-day upkeep, cleaning, custody, or security of the work.

The Contractor shall be obligated to replace, at his own expense, any defective Works or materials, including sleepers, as may be notified by the Engineer within the aforesaid Defect Liability Period. In the event of the Contractor's failure to promptly replace such defective Works or materials, the Engineer shall have the absolute right and liberty to withhold any payments due to the Contractor and/or to invoke and encash any Bank Guarantees furnished by the Contractor, without prejudice to any other rights or remedies available under the Contract

12.0 Insurance (Ref.: G.C.C. Clause '9.0'):

Before commencement of works, it shall be obligatory for the contractor to obtain, at his own cost, insurance cover in the joint name of the following parties:

1. Chhattisgarh East Railway Limited
2. The President of India represented by Chief Traffic Planning Manager, South East Central Railway.
3. SBI CAP Security Trustee Company Ltd. (acting as security Trustee)
4. Escrow Account No. 6584303176 with Indian Bank, New Delhi Main Branch, G-41, Connaught Circus, New Delhi.
5. Ircon International Limited
6. The Contractor to whom this work is awarded from reputed companies for the following requirements:
 - (a) Contractor's All Risk (CAR) Policy,
 - (b) Liability for death of or injury to any person or loss of or damage to any property (other than the work) arising out the performance of the Contract.
 - (c) Construction Plant, Machinery and Equipment brought to site by the Contractor.
 - (d) Any other insurance cover as may be required by the law of the land.

Other terms and Conditions are as per **Clause no. 9.0 of General Conditions of contract.**

13.0 PERFORMANCE SECURITY & RETENTION MONEY

13.1 Performance Security:

Refer Clause no. 8.1 of General Conditions of Contract.

13.2 Retention Money:

Refer Clause no. 8.2 of General Conditions of Contract.

13.3 Release of Performance Security:

Refer Clause no. 8.3 of General Conditions of Contract.

13.4 Release of Retention Money:

Refer Clause no. 8.4 of General Conditions of Contract

14.0 DEPLOYMENT OF ENGINEERS

- 14.1 The Contractor shall provide and keep on the works, during the execution of the works during Contract Period/extended Contract period, efficient and competent Engineers to ensure that the work is executed strictly as per provisions of the Contract. It shall be the obligation on the part of the Contractor to provide the following minimum Engineering staff at site:

Sn.	Position/Qualification	Minimum Requirement
1	Project Manager – Graduate/ Diploma Engineer having minimum experience of 10/15 years in Earthwork and / or bridge work for railway projects.	1 No.
2	Site Engineer (Civil) – Graduate / Diploma Engineer having minimum experience of 3/5 years in Concrete works Concrete works for railway/highway Bridges and/or Structural steel works for railway bridges.	3 No.
3	Site Engineer (Civil) – Graduate / Diploma Engineer having minimum experience of 3/5 years in construction of Railway formation.	1 No.
4	Engineer (Survey, Planning & Quantity Survey) – Graduate / Diploma Engineer with Minimum of 3 years relevant experience	1 No.
5	Engineer (Quality Control, Environment & Safety) – Graduate / Diploma Engineer with Minimum of 3 years relevant experience	1 No.

In addition to the above, requisite number of staffs for testing and other supervisory staff shall be deployed by the Contractor. Contractor should deploy one survey team with requisite equipment for planning, marking layout and checking alignment, levels etc. during construction.

The technical staff shall be got approved in writing from the Engineer (whose approval may be withdrawn any time by the Engineer) for supervision of works and to receive direction from the Engineer for the work on behalf of the contractor. The supervisory staff of the contractor will not be changed without approval of the Engineer.

- 14.1.1 In case, the Contractor fails to deploy sufficient Engineers as described above, the Engineer/ Employer shall be entitled to recover the following amounts from the dues of the Contractor:

1	Non-Deployment of Project Manager.	Rs. 1,50,000/- per month per person or part thereof
2	Non-Deployment of Quality / Site Engineer/ Planning Engineer/Surveyor	Rs. 70,000/- per month per person or part thereof

The decision of the Engineer as to the period for which the required technical staff was not employed by the contractor and as to reasonableness of the amount to be deducted on this account shall be final and binding on the contractor.

- 14.1.2 The details of skilled manpower/workers trade wise i.e. skilled, semiskilled workers, labour, arrangement for boarding/lodging along with details of permanent staff shall be submitted by the contractor within 7 days after the award of work to him. This shall be submitted along with the programme of works.
- 14.1.3 Also, in case of failure of contractor to provide Project Manager/Engineers, IRCON reserves the right to engage them of its own out of the penal amount recovered as per above rate against specific category.

15.0 CONTRACT AGREEMENT

The Contractor shall enter into and execute the Contract agreement in the form of agreement as annexed with tender documents, within 28 days from the date of issue of Letter of Acceptance. The stamp papers of the requisite value as per the prevailing laws shall be provided by the Contractor at his own cost. Original agreement shall be retained by the Employer/Engineer and a certified copy shall be made available to the Contractor.

16.0 GENERAL OBLIGATIONS OF THE CONTRACTOR

As per Clause no. 12 of General Conditions of Contract.

17.0 MEASUREMENTS OF WORK AND PAYMENTS

17.1 Measurements:

The contractor shall be paid for the works at rates in the accepted Bill of Quantity of the contract and extra items of work at rates determined under relevant clauses of contract documents. The measurement shall be taken by the Engineer or his representative in the presence of the contractor or his authorized representative.

17.2 Measurement of work at regular intervals:

The measurements of the work shall be taken in accordance with the contract during progress of work and at such intervals, as in the opinion of the Engineer or Engineer's Representative shall be proper, having regard to the progress of the work. On an agreed date and time, the Engineer or his Representative shall take the on account or final measurements in the presence of the Contractor or his authorized representative. The Engineer or his authorized representative shall sign the

measurements, which shall also be signed by the Contractor or his authorized representative as an acceptance of the measurements. If the Contractor or his representative fails to turn-up at the time of taking measurements inspite of notice to do so, the Engineer or his representative shall be entitled to record the measurements ex-parte and these shall be final and binding on the Contractor.

- 17.2.1 The payment will be made on submission of the proper documents (including RA bill, measurement sheet, tax Invoice, Test Certificates etc as required). Payment will be made only after certification by IRCON representative/Engineer/Employer.

17.3 Measurement of works as per records and drawings:

- i. For the purpose of measuring such permanent works, as are to be measured by records and drawings, the Contractor shall prepare records and drawings at regular intervals and submit to the Engineer or Engineer's representative for his scrutiny.
- ii. In case, there is a discrepancy in the measurements of work done and the measurements as per drawings, measurements for the minimum of the two shall only be accounted for, provided the executed work is acceptable to the Engineer.
- iii. The Engineer or the Engineer's representative shall have the right to rectify any incorrect measurements and delete/correct any measurements if it is found at a later stage that the work is incomplete, defective and/or not conforming to the specifications.

17.4 Payment subject to receipt from the Client

- i. Ircon International Limited is executing the work as per the requirement and at the cost of the Client, M/s CERL as indicated in the Appendix to Tender.
- ii. Payment to the contractor will be released after receipt of the billed amount from the client M/s CERL. However, attempt will be made to release such payment generally not later than 56 days after acceptance of the measurement submitted by the contractor to the Engineer.
- iii. In case of delay in making payment to the Contractor beyond average 56 days, the Engineer will suitably extend the target date of completion of the affected activity. No other claim what so ever will be entertained on this account.

18.0 MODE OF PAYMENT AND TAX DEDUCTION AT SOURCE

- 18.1 As per Clause no. **64** of General Conditions of Contract.

19.0 QUANTITY VARIATION [Both for Items included in BOQ and Not included in BOQ separately]

To be dealt as per clause no. **58 & 59** of General Conditions of Contract.

20.0 Updation of Labour data on Indian Railways shramikkalyan portal by Contractor.

- 20.1 Contractor shall abide by the provisions of Payment of Wages Act & Minimum Wages Act in terms of clause no. 40.0 : "Wages of Labour" of IRCON's General Condition of

Contract. In order to ensure the same, an application has been developed and hosted on website 'www.shramikkalyan.indianrailways.gov.in'. Contractor shall register his firm/ company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation of 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. Engineer shall approve the contractor's registration on the portal within 7 days of receipt of such request.
 - b) Contractor once approved by the 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 the LOA for approval of the concerned Engineer. 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 the 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 and payments made thereof after each wage period.
- 20.2 While processing payment of any 'On Account bill' or 'Final bill' 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."
- 21.0** The provision of Construction and Demolition Waste Management Rule 2016 issued by Ministry of Environment Forest and Climate Change dated 29.03.2016 and published in the Gazette of India, Part – II, Section -3, Sub-section (ii) are binding upon the Contractor. Contractor shall implement these provisions at worksites, for which no extra payment will be payable."

ANNEXURE-VIII

(Ref. Sub-clause 4.1 iii) of Special Conditions of Contract)

(to be executed on a non-judicial stamp paper of Rs. 100/- only)

BANK GUARANTEE FOR ADVANCE PAYMENT

To

IRCON INTERNATIONAL LIMITED,

[Acting through (Tender Inviting Authority) & Address] Designation & Address

_____ *[name of Contract]*

Gentlemen:

In accordance with the provisions of the Conditions of contract, Sub-Clause _____
("Advance Payment") of the above-mentioned contract, _____ *[name and
address of the Contractor]* (hereinafter called "the Contractor") shall deposit with
_____ *[name of Employer]* a bank guarantee to guarantee his
proper and faithful performance under the said Clause of the Contract in an amount
of _____ *[amount of Guarantee]*, _____ *[amount in
words]*.

We, the _____ *[name of bank]*, as instructed by the Contractor,
agree unconditionally and irrevocably to guarantee as primary obligator and not as
Surety merely, the payment to IRCON INTERNATIONAL LIMITED on their first
demand without whatsoever right of objection on our part and without his first claim
to the Contractor, in the amount not exceeding _____ *[amount of
Guarantee]*, _____ *[amount in words]*.

We further agree that no change or addition to or other modification of the terms of
the Contract or of Works to be performed there under or of any of the Contract
documents which may be made between IRCON INTERNATIONAL LIMITED and
the Contractor, shall in any way release us from any liability under this guarantee,
and we hereby waive notice of any such change, addition, or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract upto _____ (until IRCON INTERNATIONAL LIMITED receives/ recovers full repayment of advance along with interest accrued thereon from the Contractor).

We, the _____ Bank further agree that this guarantee shall be invokable at our place of business at New Delhi/ NCR/ Bilaspur (Indicate detail address of branch with Code No.)*. The branch at New Delhi/ NCR/ Bilaspur (Chhattisgarh) is being advised accordingly.

This Bank Guarantee shall be operative only if it is accompanied by a separate advice sent by _____ (Name of Issuing Bank, with address) on _____ (Name of Employer's Bank, with address) IFS Code _____ through Structured Financial Messaging System (SFMS) and authenticated by the Employer's Bank.

Yours truly,

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank: _____
Address: _____
Date: _____

*The Bank should indicate detailed address of New Delhi/ NCR/ Bilaspur Chhattisgarh branch along with its Code No.

ANNEXURE-IX

(Ref. Sub-clause 9.1 c) of Instructions to Tenderers)

(to be executed on a non-judicial stamp paper of Rs. 100/- only)

BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

(Tender Notice No. and date)

Ref: (Bank Guarantee No. and Date)

To

IRCON INTERNATIONAL LIMITED,

[Acting through _____ (Tender Inviting Authority) Designation & Address]

WHEREAS, _____ [name of Bidder] (hereinafter called "the Bidder") intends to submit his bid dated _____ (date) for _____ [name of work] (hereinafter called "the Bid").

AND WHEREAS it has been stipulated by you in the Bid Document that the Bidder shall furnish you a Bank Guarantee by a scheduled bank for the sum specified therein as Earnest Money Deposit as a precondition of submission of the Bid;

AND WHEREAS we have agreed to give the Bidder such a Bank Guarantee as required;

NOW THEREFORE we hereby affirm that;

1. KNOW ALL PEOPLE by these presents that We _____ [name of bank] of _____ (name of country) having our registered office at _____ (hereinafter called "the Bank") are bound unto IRCON INTERNATIONAL LIMITED (hereinafter called "the Employer") in the sum of Rs. _____ * [amount of Guarantee], _____ [amount in words] for which payment well and truly to be made to IRCON INTERNATIONAL LIMITED. The Bank binds itself, its successors and assigns by these presents with the Common Seal of the Bank this _____ day of _____ 20__ and undertake and agree to pay unconditionally, without any demur or protest, at once to the Employer up to the above amount upon receipt of their first written demand, without IRCON INTERNATIONAL LIMITED having to substantiate their demand.
2. We, the _____ [name of bank], and our branch at _____ (Indicate detail address of branch with Code No.), undertake to pay to IRCON INTERNATIONAL LIMITED up to the above

amount upon receipt of their first written demand, without IRCON INTERNATIONAL LIMITED having to substantiate their demand, PROVIDED THAT in their demand IRCON INTERNATIONAL LIMITED will note that the amount claimed by them is due to them owing to the occurrence of one or any of the conditions, provided in the Bid documents as precondition for encashment of the Earnest Money Deposit , specifying the occurred condition or conditions. .

3. This guarantee will remain valid and in full effect upto and including the date _____ ^{**}. *Any demand in respect of this Guarantee should reach the Bank not later than the above date.*
4. This Bank Guarantee shall be operative only if it is accompanied by a separate advice sent by _____ (Name of Issuing Bank, with address) on _____ (Name of Employer's Bank, with address) IFS Code _____ through Structured Financial Messaging System (SFMS) and authenticated by the Employer's Bank.

DATE _____ SIGNATURE OF THE BANK _____

SEAL _____

WITNESS _____

[Signature, name and address]

*. The Bank should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as mentioned in the Tender Notice named on top.

** . Date to be filled in keeping a margin of minimum 180 days after the last date for submission of Bids as stated in the "Notice Inviting Tenders" or as executed by IRCON INTERNATIONAL LIMITED (through corrigenda).

ANNEXURE-IX(A)

Insurance Surety Bond for Earnest Money Deposit/Bid Security

Name of the issuer of surety bond:

To

IRCON INTERNATIONAL LIMITED,

Acting through _____ (Tender Inviting Authority, Designation and Address)

Date.....

Surety Bond No:

Issue Date: . . .

Amount of Bond:

Expiry Date:

WHEREAS, M/s XXXXXX (hereinafter called "The Bidder") intends to submit his bid for the work of "xxxxxxxx" under invitation of Bid notice No. XXXXXX Dated XXXXXX (hereinafter called "The Bid")

AND

WHEREAS, it has been stipulated by IRCON INTERNATIONAL LIMITED acting through _____ (Name, Designation and Address of the Tender Inviting Authority) (hereinafter called "The IRCON") in the Bid Document that the Bidder shall furnish to the IRCON surety bond for the sum of ₹XXXXXXX (Rupees XXXXXX Only) as Earnest Money Deposit/Bid Security as a precondition of submission of the bid

WHEREAS, we, _____, (Name of insurance company) hereinafter called "The Surety", acting through [Name, Designation and Address of the authorised person of the Surety], have, at the request of M/S.XXXX bidder, agreed to give Bond for Earnest Money Deposit/Bid Security as hereinafter contained:

1. KNOW ALL MEN by these present that I/We, the undersigned [Insert name(s) of authorized representative of the Surety], being fully authorized to sign and incur obligations for and on behalf of the Surety, confirm that the Surety, hereby, unconditionally and irrevocably bond to pay the IRCON the full amount in the sum of ₹XXXXXXX (Rupees XXXXXXXXXX Only) as above stated.
2. The Surety undertakes to immediately pay on presentation of demand by the IRCON any amount up to and including aforementioned full amount without any demur, reservation, recourse, contest or protest. Any such demand made by the IRCON on the Surety 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 Bidder or the Surety.
3. On payment of any amount less than aforementioned full amount, as per demand of the IRCON, the Bond shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the IRCON.
4. The Surety shall pay the amount as demanded immediately on presentation of the demand by IRCON without any reference to the Bidder and without the IRCON

being required to prove or to show grounds or give reasons for its demand or the amount demanded.

5. The Surety Bond shall be unconditional and irrevocable.
6. The Bond hereinbefore shall not be affected by any change in the constitution of the Surety or in the constitution of the Bidder/IRCON or winding up of the Bidder/IRCON or the Surety or any absorption, merger or amalgamation of the Bidder/IRCON or the Surety with any other party or entity.
7. The Surety agrees that no change, addition, modifications to the terms of the Bid Documents or to any documents, which have been or may be made between the IRCON and the Bidder, will in any way release the surety from the liability and obligation under this Bond; and the Surety, hereby, waives any requirement for notice of any such change, addition or modification to the Surety.
8. This Bond is valid and effective from the date of its issue, which is [insert date of issue]. The Bond and our obligations under it will expire on XXXX (Expiry Date, a date 180 days after the last date for submission of Bids as stated in the Notice Inviting Bids/Tenders or as extended by the IRCON through corrigendums /addendums to the bid documents). All demands for payment under the Bond must be received by us on or before that date.
9. The Surety agrees that the IRCON's right to demand payment of aforementioned full amount in one instance or demand payments in parts totalling up to the aforementioned full amount in several instances will be valid until either the aforementioned full amount is paid to the IRCON or the Bond is released by IRCON before the Expiry date.
10. The Surety agrees that its obligation to pay any amount demanded by the IRCON before the expiry of this Bond will continue until the amount demanded has been paid in full.
11. *The expressions Surety, Bidder and IRCON hereinbefore used shall include their respective successors, administrators and assigns.*
12. *The Surety hereby undertakes not to revoke the Bond during its currency, except with the previous consent in writing of the IRCON. This Bond is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758 except that the supporting statement under Article 15(a) is hereby excluded.*
13. *We, the Surety, further agree that the IRCON shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents including, inter alia, the failure of the Bidder to keep its Bid open during the Bid validity period set forth in the said Documents, and the decision of the IRCON that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between the IRCON and the Bidder or any dispute pending before any Court, tribunal, arbitrator or any other authority or by the discharge of the Bidder for any reason whatsoever.*
14. *The IRCON shall have the fullest liberty without affecting in any way the liability of the surety under this surety bond from time to time to vary any of the terms and conditions contained in the said bidding documents or to extend time for submission of the bids or the bid validity period or the period for conveying acceptance of Letter of Award by the Bidder or the period for fulfilment and compliance with all or any of the terms and conditions contained in the said bidding documents by the said bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said bidding documents or the securities available to the IRCON, and the Surety shall not be released from its liability under these presents by any exercise by the IRCON of the liberty with reference to the matters aforesaid or by reason of time*

being given to the said Bidder or any other forbearance, act or omission on the part of the IRCON or any indulgence by the IRCON to the said Bidder.

15. *The Bond shall be in addition to and without prejudice to any other security Bond (s) of the Bidder in favour of the IRCON available with the IRCON. The Surety, under this Bond, shall be deemed as Principal Debtor of the IRCON.*
16. *This Surety Bond shall also be operable at our , branch at New Delhi, from whom, confirmation regarding the issue of this Surety Bond or extension/renewal thereof shall be made available on demand. In the contingency of this Surety Bond being invoked and payment hereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.*
17. *Any notice by way of request, demand or otherwise hereunder may be sent by post (courier or registered post) or by authorized e-mail addressed to the Surety at its above referred branches, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the IRCON that the envelope was so posted shall be conclusive.*

Dated the day of 20--

Place.....

Surety's Seal and authorized signature(s)

[Name in Block letters] .

[Designation with Code No.]

.....

[P/Attorney] No.

Witness

1.

2.

[Note: All italicized texts are for guidance on how to prepare this Insurance Surety Bond and shall be deleted from the final document.]

ANNEXURE-X

(Ref. Sub-clause 62.2 of GCC)

ONLY A SAMPLE

(to be executed on a non-judicial stamp paper of Rs.100/-)

INDEMNITY BOND

THIS INDEMNITY BOND is made this ____ day of _____ (Month) 20____ BY _____ (Agency name with detail address and registration, if any) (hereinafter called the "Contractor" Or the "Indemnifier "which expression shall include it successors and permitted assignees) IN FAVOUR of IRCON International Limited, C-4, District Centre Saket, New Delhi - 110017 And its Work/Project _____ (Name of Work in detail) (Hereinafter referred as "IRCON" Or the "Indemnity Holder" which expression shall include its successors and assignees).

WHEREAS IROCN has awarded the work for _____ (hereinafter referred as the "Work") to the Contractor vide Letter of Award/Acceptance No. _____ Dated _____ (hereinafter referred as the "LOA").

AND Whereas subsequent to issuance of LOA both the parties, IROCN and the Contractor has entered into a contract agreement on _____ (hereinafter referred as the "Agreement").

AND Whereas in terms of conditions of the Agreement IRCON is required to pay cost of the materials to be used in the execution of the Work (Non-perishable) as per Clause ____ of _____ to the Contractor.

AND Whereas IRCON is willing to release an amount of _____ (in Figures and Words) towards materials advance as the cost of materials, on the Indemnifier furnishing to IRCON an Indemnity Bond for a like sum for a period valid upto _____.

AND Whereas the Indemnifier has agreed to execute an Indemnity Bond for an amount of _____ (in Figures and Words).

NOW Therefore the above-named Indemnifier does solemnly affirm and declare as follows:

1. That the above mentioned materials advance of _____ (in Figures and Words) will be adjusted against progressive bill(s) in terms of conditions of the Agreement by the Indemnity Holder.

2. That the Indemnifier shall not raise any objection of whatsoever nature and shall refund the whole or part of such advance so received by the Indemnifier as claimed by the Indemnity Holder within the _____ days of the claim being made.
3. That the Indemnifier will be released from obligation under the Indemnity Bond after the claimed amount is paid or the materials advance is adjusted by the Indemnity Holder in full from the running bill(s) as per conditions of the Agreement.
4. That the Indemnity Bond shall remain in force until _____. However, in case the advance is not fully adjusted as aforesaid, notwithstanding what is stated hereinabove, the Indemnity Bond shall continue to be in force until the whole amount is adjusted in full in subsequent _____ month. This Indemnity Bond shall expire and become ineffectual after the entire advance is recovered by the Indemnity Holder as per conditions of the Agreement.

It is undertaken and declared that the Indemnifier has the power and authority for execution of this Indemnity Bond for the value of _____ (in Figure and Words) towards materials advance as provided under Clause ____ of the _____ of the Agreement.

IN WITNESS WHEREOF the Indemnifier has signed and has delivered this Indemnity Bond to the Indemnity Holder on the day, month and year first herein above written.

DEPONENT

**For & Behalf of
(Agency name)**

(Authorized signatory)

WITNESS

1. _____ (Signatory, Name & Address)
2. _____ (Signatory, Name & Address)

ANNEXURE-XI

(To be executed on a non-judicial stamp paper of Rs. 100/-)

BANK GUARANTEE FOR STAGE PAYMENT
(Sample Only)

To,
IRCON International Limited,

[Acting through (Tender Inviting Authority) & Address]

_____[Name of
Contract/Work]

Bank Guarantee No. _____

Date _____

Amount _____ (In Figures & Words)

Valid Upto _____

Claim Period Upto _____

In accordance with Clause ____ ("Stage Payment") of _____ the above-mentioned _____ Contract, _____ M/s _____ [*name and address of the Contractor*] (hereinafter called "the Contractor") shall deposit with IRCON International Limited a Bank Guarantee to guarantee for his proper and faithful performance under the said Clause of the Contract for an amount of Rs. _____ [*amount of Guarantee*], (Rupees _____) [*amount in words*].

We, the _____ Bank [*Full Name and Address of Bank*], its successors and assigns, as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary Obligor and not as Surety merely, to make payment to IRCON International Limited on their first written demand without whatsoever right of objection on our part and without first claim to the Contractor, the amount not exceeding _____ [*amount in Figures & Words of Guarantee*].

We, the _____ Bank [*Full Name and Address of Bank*], its successors and assigns, further agree that no change or addition to or other modification of the terms of the Contract or Works to be performed there under or of any of the Contract documents which may be made between IRCON International Limited and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition, or modification.

This guarantee shall remain valid and in full effect from the date of the stage payment under the Contract upto _____ (until IRCON International is satisfied that the

fabricated material reaches the concerned bridge site in good conditions and certified by authorized representative of Employer/Engineer to this effect).

We, the _____ Bank further agree that this guarantee shall be invokabled at our place of business at _____ (indicate detail address of Branch with Code No.). The branch at _____ is being advised accordingly.

This Bank Guarantee shall be operative only if it is accompanied by a separate advice sent by _____ (Name of issuing Bank, with address) on _____ (Name of Employer's Bank, with address) IFS Code _____ through Structured Financial Messaging System(SFMS) and authenticated by the Employer's Bank.

Yours truly,

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank: _____

Address: _____

Date: _____

SECTION -VI

SAFETY, HEALTH AND ENVIRONMENT MANAGEMENT SYSTEM (Sub-Contracts)

ATTACHMENT FOR CLAUSE 44.2 OF GCC

[Uploaded Separately]

SECTION -VII

General Conditions of Contract (GCC)

[Uploaded Separately]

General Conditions of Contract (GCC)

1. Additional definitions mentioned in these tender documents elsewhere will be followed for GCC Feb 2021 version dt 17.02.2021 (Updated upto Correction Slip No.7, Dated:16.09.2025)
2. In case of any ambiguity in any definition, the decision of IRCON regarding the interpretation shall be final and binding.
3. Wherever there is conflict in any condition between General Conditions of Contract (GCC) and Special conditions of Contract (SCC) mentioned in the bid documents, the conditions mentioned the Special conditions of Contract will prevail. However, Engineer's decision in this connection shall be final and binding.

SECTION -VIII

TECHNICAL SPECIFICATIONS

1.0 GENERAL

These specifications shall apply to all such works as are required to be executed under the contract or otherwise directed by the Engineer. In every case the work shall be carried out to the satisfaction of the Engineer and shall conform to grades and cross sections shown on the drawings or as indicated by the Engineer. The quality of the work and materials shall comply with the requirements set forth in the succeeding sections. Where the drawings and specifications describe any portion of the work only in general terms and not in complete details, it shall be understood that only the best general practices are to prevail. Materials and workmanship of the best quality are to be employed and that the instructions of the Engineer are to be fully complied with and shall be binding on the contractor. The contractor shall be fully responsible to ensure that the finished works are free from any defects, weakness, cracks etc.

1.1 GENERAL CLIMATIC CONDITIONS

i) **Seismic Conditions:**

The proposed alignment lies in Seismic Zone –III as per Indian Standard Seismic Zoning map of the country and Chhattisgarh have very low rates of seismic activity.

ii) **Temperature:**

The climate in Kharsia to Dharamjaigarh is moderate. Large parts of the elevated land are covered under thick forest. The cold season is moderate during winter. The temperature is within 42.60 degree Celsius maximum and 13degree Celsius minimum. The maximum humidity during rainy season is 86% and minimum was 73%.

iii) **Rainfall:**

The rainy season is between July to October for a period of four months. The average yearly rainfall in this area is about 1602 mm.

1.2 CODES OF PRACTICE AND SPECIFICATIONS:

The abbreviations mentioned elsewhere for standard specifications and code of practices shall be considered to have the following meaning.

IS	:	Indian Standard of the BIS (Bureau of Indian Standards).
IRS	:	Indian Railway Specifications and Code of Practices.
IRC	:	Indian Roads Congress.
RDSO	:	Research, Designs and Standards Organizations (RDSO) (Ministry of Railways).

1.3 Reference of standard specification and relevant IS codes

Railways/IRS Books of References

1. IRS Rules Specifying the Loads for Design of Super-Structure and Sub-Structure for Bridges (Bridge Rules)
2. Indian Railways Works Manual
3. Indian Railways Schedule of dimensions for Broad Gauge -2005
4. IRS Bridge Manual
5. Indian Railways Permanent Way Manual (IRPWM).
6. Indian Railways Track Manual.
7. Indian Railways Engineering code for Engineering department
8. IRS Concrete Bridge Code- 2014
9. IRS code of practice for design of substructure and foundation of bridges (Bridge substructure and foundation code) – 2013
10. IRS code of practice for plain concrete construction – 1982 and IRS Concrete Bridge Code 1997 (with latest revision).
11. Guidelines for Earthwork in Railway Projects GE: G-1; July 2003. (With all correction/ amendment slips).
12. Guidelines and Specifications for Design of Formation for Heavy Axle Load GE: G-0014; Nov. 2009. (With all correction/ amendment slips).
13. Guidelines for Design /Construction of formation on Indian Railway track vide RDSO letter no. RS/G/108/Heavy Axle Load; Dated: 19.10.2015.
14. Guidelines for cuttings in Railway Formations – August 2005
15. Rationalization of formation layer thickness of Indian Railway Track, Specification No. RDSO/2020/GE: IRS-0004(D) Part-IV, September-2019
16. IRS Manual on the Design and Construction of Well and Pile Foundations (Well and Pile Foundation Code)
17. Indian Railways Standard Code of Practice for the Design of Steel or Wrought Iron Bridges Carrying Rail, Road or Pedestrian Traffic (Steel Bridge Code)
18. BS- 111 Guidelines for use of High Strength Friction Grip (HSFG) bolts on bridges on Indian Railways
19. IRS code for earthquake resistant design of Railway Bridges (Seismic Code) adopted - 2017

Indian Road Congress Codes and specification

1. IRC-5: Standard specifications and Code of practice for Road Bridges –Section – I – General features of design
2. IRC-78: Road Bridges.
3. IRC-6: Standard specifications and Code of practice for Road Bridges – Section –II- Loads & stresses.
4. IRC-21: Standard specifications and Code of practice for Road Bridges- Sections –III- Cement concrete (Plain & reinforced)
5. IRC-24: Standard specifications and Code of Practice for Road Bridge –Section –V- Steel Road Bridges.
6. IRC- 83: Bearings for bridges.

7. IRC-87: Design and erection of false work for road bridges

Indian Standard Codes and Specification:

1. IS: 1786- High strength deformed steel bars & wires for concrete reinforcement. (grade Fe 415/ Fe 500)
2. IS: 456- Plain and reinforced concrete.
3. IS: 2386 (all 8 parts) – Tests for aggregates for concrete.
4. IS: 3025 (all 49 parts) – Methods of sampling and test for water and waste water.
5. IS: 1791 – Batch type concrete mixers.
6. IS: 4634- Methods of testing performance of batch type concrete mixers.
7. IS: 6925- Methods of test for determination of water-soluble chlorides in concrete admixtures.
8. IS: 9103 – Admixtures for concrete.
9. IS: 4031 (all 15 parts) - Physical tests for hydraulic cement.
10. IS: 5513- Vicat's apparatus.
11. IS: 10080- Vibration machine for casting standard cement mortar cubes.
12. IS: 875 (all 5 parts) – design loads (other than earthquakes) for buildings and structures.
13. IS: 2720 (all 41 parts)-Method of tests for soils.
14. IS: 786- Conversion factors and conversion tables.
15. IS: 1893- Earthquake resistant design of structures.
16. IS: 3085- Method of test for permeability of cement mortar and concrete.
17. IS: 7320 – Concrete slump test apparatus.
18. IS: 5515- Compaction factor apparatus.
19. IS: 3955- Design and construction of well foundations.
20. SP 6, 7, 16, 21, 22, 23, 24, 34, 36, 52, 60.
21. IS: 2911- Design and construction of pile foundation.
22. IS: 5624- Foundation bolts.
23. IS: 8112- 43 Grades OPC.
24. IS: 4326- Earthquake resistant design and construction of buildings.
25. IS: 13920- Ductile detailing of reinforced concrete structures subjected to seismic forces.
26. IS: 4081- Safety code for blasting and related drilling operations.
27. IS: 7293- Safety code for working with construction machinery.
28. IS: 1200 (all relevant parts)- Method of measurement of building and civil engineering works.
29. IS: 2132- Thin walled tube sampling of soils
30. IS 2131- Standard penetration test for soils.
31. IS: 800 General constructions in steel.
32. IS: 2911 (all parts) latest revisions
33. IS: 3764-1992 code for safety for excavation work.
34. IS 13416: 1992 Code for preventive measures at work place.
35. IS 4926(Ready Mixed Concrete)
36. IS:3558-1983 Code for use of vibrator
37. IS 7861 Part I & II Code for extreme weather concreting
38. IS 12468:1988 Code for general requirement for vibrators for mass concreting

39. IS 9013 -1978 Code for method for making curing and determining compressor strength of concrete test.
40. IS:516 - 1959 Code for test of concrete
41. IS Code of practice for use of structural steel in general building construction (IS-800-1984).
42. IS:10262 Indian standard for Concrete mix proportioning
43. IS specification for fine and coarse aggregate from natural sources for concrete IS-383-1970 and IS-515 & 516-1959 latest with up-to-date correction slips.
44. IS: 2430:1986 Code for sampling of aggregate for concrete
45. IS: 2386-1983 all relevant parts (Code for testing aggregate for concrete.
46. IS: 2720 (Part 16) – Code for testing for CBR
47. IS Specifications for medium quality galvanized mild steel continuous welded cables conforming to IS-1239-1979. (latest edition)
48. IS:226-1975 specifications for structural steel latest edition.
49. IS:9595 & IS:816-1989 specifications for welding procedure.
50. IS: 1161:2014 specifications for structural steel pipe section.
51. IS: 1367 specifications for bolts.
52. IS: 277-2008 specifications for Galvanized Steel Sheets.

The above list is indicative and the items in the BOQ governed by standard specification /code are to be executed accordingly.

Wherever a reference is made to any of the standard specifications and code of practice it shall be taken as a reference to the latest versions/revision of the same and shall include all the ERRATA/corrections made in the same from time to time.

1.4 MEASUREMENTS

All measurements shall be made in the metric system. Different items of works shall be measured in accordance with the procedures set forth in the relevant sections read in conjunction with relevant codes and specifications.

- 1.5 Site clearance wherever involved shall be undertaken and the same shall be considered incidental to the earthwork items and rates for the same shall be deemed to be inclusive of all clearing operations.
- 1.6 Specifications not specified in the bid documents for this work, shall be in accordance with SECR Railway standard specifications 2021 edition corrected up-to-date and the contractor shall be bound by them for the performance of the contract.
- 1.7 The contractor should verify the centerline, curves and levels along the alignment by running survey instruments & confirm the same along with the Engineer. TBMs may be fixed if required and contractor should go on verifying co-ordinates, centerlines, curves and levels during the course of execution. The correctness & accuracy will rest with the contractor. The contractor should have skilled manpower with required sufficient survey instruments to carry out these activities.

Particular Technical Specifications

PART-1 : Earthwork & Blanketing

PART-1 : Earthwork & Blanketing

1.0 EARTHWORK AND BLANKETTING

- 2.1** The chainages mentioned in the bid documents are field chainages meant for guidance only. For the purpose of payment, actual lengths will be measured on ground.
- 2.2** It shall be the responsibility of contractor to ensure that no work on the embankment or cutting is commenced until the existing ground levels at different cross sections have been recorded after clearing & grubbing and such records of levels have been jointly signed and dated by the contractor and the Engineer or his authorized representative. Cross-sectional profiles plotted on the basis of the recorded ground levels shall also be jointly signed by the contractor and the Engineer. The points at which the cross-sectional ground levels are to be recorded and the extent of levelling work to be done shall be decided by the Engineer. As stated above taking guidance from the design drawings showing plan and 'L' section, typical cross section, blanket details etc., which form part of the bid, and detailed field inspection, the contractor shall prepare working drawings before commencing the work. The working drawings that will be prepared by the contractor, should clearly indicate the details of alignment, formation levels, formation width at ground level, cross sections of catch water drains & side drains, cross sections indicating levels of sub grade, blanket etc., to facilitate smooth execution of work at site. Such working drawings should be submitted to the Engineer for his approval. Any suggestions and modifications by the Engineer and or the Employer shall be duly incorporated by the Contractor in these drawings. The work of execution of embankment shall be commenced only after the approval of these working drawings including drawings showing the cross sections, by the Engineer. Such representation, however, should be made before the commencement of any earthwork. The Engineer's decision thereon shall, however, be final and binding on the contractor.
- 2.2.1** Contractor shall sign every page of the level book and cross section sheets where original ground and final level of completed work are recorded as token of his acceptance of these levels and cross sections for the purpose of computation of quantities of payments. The contractor will be entirely responsible for accurate setting out of the works and safeguarding all survey pillars/monuments, bench marks, beacons, etc. The work of setting out shall be deemed to be a part of the general works preparatory to the execution of work and no separate payment shall be made for the same. No dispute whatsoever shall be entertained on this account.
- 2.3** Contractor shall clear all shrubs and jungles on the existing ground up to a distance of 3m from the proposed toe of the embankments. All tree stumps will have to be uprooted from the area to be covered by the formations embankment and it will not be paid for separately and the rate of earthwork includes such uprooting of tree stumps.

- 2.3.1 No extra payment will be admissible for filling up the hollows left after uprooting of tree stumps in the area covered by the embankment. Initial ground levels as represented by the cross sections taken before commencement of work will not be deemed to be vitiated, and will hold good for the assessment of the earthwork quantities, even though there may be some loss of earth in marshy/bed area due to shrinkage.
- 2.4 The type of soil to be used in the embankment which will be brought from out-side the owner's land will be got approved from the Engineer in advance. Organic clay, silts, peat and shrinkable soils of low bearing capacity shall not be used for making the embankment.
- 2.5 Contractor should set out the work according to the plan and as directed by the Engineer or his representative. Reference pegs are to be made permanent and kept clear of all obstructions. He should obtain the approval in writing from the Engineer, for the correctness of the setting out and the reference marks, before commencing the actual execution of the works.
- 2.6 While carrying out the filling work the contractor will take all necessary precautions to see that no infringement is caused. In course of doing work if infringements are likely to arise he shall intimate the Engineer in advance of his programme in writing so that necessary arrangements can be provided for carrying out such items.
- 2.7 The side slopes will be as designs as per RDSO Specification, Guidelines and drawings approved by the Engineer.
- 2.8 If any blasting operations are necessary, they are to be carried out in accordance with the provisions of General Conditions of Contracts- February2020 (with latest correction /amendment) of IRCON.
- 2.9 No extra payment towards cost of bailing or pumping out water from borrow pits or water from cutting or water from foundations excavation will be made. In case the embankment is to be made for such work, it should be clearly understood that the rates quoted are inclusive of all charges for such items incidental to earth work.
- 2.10 SPECIFICATIONS FOR FORMING EMBANKMENT WITH MECHANICAL COMPACTION**
- 2.10.1 This section deals with the Design of Railway Formation, Selection of Materials for Construction, Execution of Earthwork in formation, Quality Control of the Earth work, Maintenance of Records and Quality Assurance. The earth work should be carried out as described below based on as per the provisions of "Comprehensive guidelines and specifications for Railway Formation" Specification No. RDSO/2020/GE:IRS-0004 September-2020, Corrected upto ACS No.1 issued by RDSO, Lucknow (with latest amendments upto date correction slips).
- 2.10.2 After site clearance all pockets and depressions left in the soil, if any, shall be made level and compacted.
- 2.10.3 The work of execution of earth work in embankment shall be carried out and completed by the contractor as per these approved drawings, Guidelines &

specification with latest amendments. Execution of earth work has to be carried out in systematic manner so as to construct formations of satisfactory quality which would give trouble free service. The activities and adoption of good practices involved in execution of earthwork are covered under following headings:

- a) Preliminary works - Taking of initial levels and plotting cross sections
- b) General aspects
- c) Compaction of earth work
- d) Placement of Back-Fills on Bridge Approaches and Similar Locations
- e) Drainage Arrangement in Bank/Cutting
- f) Erosion control of slopes on banks & cuttings
- g) Other aspects

2.10.4 The soil classification shall be done as per IS 1498. To formulate the thicknesses of formation layers, various soil groups have been combined together to simplify the classification based on %age fines, in Table-1 below. (as per Rationalization of Formation thickness on Indian Railway Track, Dated July -2019)

Table -1 Description of soil quality class		
Soil Type	Description w.r.t. % are Fines (size <75 micron)	Equivalent soil group as per IS classification
SQ1	Soil containing fines >50%	CL, ML, CL-ML, CI, MI, CH, MH
SQ2	Soil containing fines from 12% to 50%	GM, GC, SM, SC, GM-GC, SM-SC
SQ3	Soil containing fines < 12%	GP, SP, GW-GC, GP-GM, GP-GC, SP-SM, SP-SC, SW-SC

2.10.5 Unsuitable soils for Construction of formation layers

Soils to be normally avoided are:

- a) Organic clays, organic silts, peat, chalks, dispersive soils, poorly graded gravel and sand with uniformity coefficient (C_u) less than 2,
- b) Clays and silts of high plasticity (CH & MH) in top 3m of embankment.

Use of material should be planned in such a way that soil with higher percentage of coarse-grained particle is placed on the upper layers of the embankment.

2.10.5 Formation in filling shall be done from borrowed earth brought by the contractor from outside owner's/railway land or from cutting earth from the alignment which must be got approved from the Engineer in both cases. Organic clays, organic silts, peat,

chalks, dispersive soils, poorly graded gravel and sand with uniformity coefficient (Cu) less than 2 will not be allowed in the embankment.

2.10.6 In cutting also, Blanket layer will be provided as per RDSO guidelines or as decided by Engineer in Charge.

2.10.7 Specification for Blanket Material

The blanketing work should be carried out as per provisions based on "Comprehensive guidelines and specifications for Railway Formation" Specification No. RDSO/2020/GE:IRS-0004 September-2020, Corrected upto ACS No.1 issued by RDSO, Lucknow (with latest amendments upto date correction slips).

2.10.7.1 The provision of **blanket layer shall not be needed** when formation/earth fill embankment have:

- (i) Rocky beds except those, which are very susceptible to weathering e.g. rocks consisting of shales and other soft rocks, which become muddy after coming into contact with water.
- (ii) Soils conforming to specifications of blanket material as given in Table no. 4 to 7 of *Specification no: RDSO/2020/GE: IRS-0004(D), September-2020*

2.10.7.2 For other conditions, the system of layered construction of embankment consisting of prepared subgrade shall normally be followed.

2.10.7.3 Specification and thickness of Formation layers:

Thickness of prepared sub grade and blanket layer has been rationalized based on UIC-719R calculation for ballast cushion as 350 mm

Soil type category in subgrade	Prepared subgrade		Recommended Thickness of Blanket Layer (mm)	Remarks
	Soil Type	Thickness (mm)		
SQ1	SQ1*	-	550	Single layer
SQ1	SQ2	500	400	Two Layer
SQ1	SQ3	500	300	Two Layer
SQ2	SQ2*	-	400	Single layer
SQ2	SQ3	350	300	Two Layer
SQ3	SQ3*	-	300	Single layer

*Subgrade soil is continuing up to blanket layer.

2.10.7.4 Formation for 25 T axle load.

Specifications and Thickness of formation layers for 25 T axle load single layer and two-layer table no:4 and table no:5 of Specification no: RDSO/2018/GE: IRS-0004(D), September-2020

2.10.7.5 Height of Embankment and formation layers:

Execution of height of embankment and formation layer thickness should be carried out as per provisions on “Comprehensive guidelines and specifications for Railway Formation” Specification No. RDSO/2020/GE:IRS-0004 September-2020, Corrected upto ACS No.1 issued by RDSO, Lucknow (with latest amendments upto date correction slips).

”.

2.10.7.6 Use of Geosynthetics (Geo textile/Geo grids) shall be considered at places where it is economical to use it in combination with blanket as it reduced the requirement of thickness of blanket. Use and selection of Geosynthetics should be done in consultation with RDSO.

2.10.7.7 Selection of layers for design of formation as well as for blanket material as given in above Paras and further deviations from these provisions can be finally decided on techno-economic considerations by the employer after approval from Client/Consultants.

2.10.7.8 The formation work, Blanketing work should be conforming as per provisions of “Comprehensive guidelines and specifications for Railway Formation” Specification No. RDSO/2020/GE:IRS-0004 September-2020, Corrected upto ACS No.1 issued by RDSO, Lucknow (with latest amendments upto date correction slips).

2.10.8 QUALIFYING AND QUALITY ASSURANCE TESTS

Qualifying tests as part of pre-selection of good earth for track sub-grade, embankment fill is required to be carried out. Also, quality of compaction is required to be done to ensure good quality construction.

- i) **Selection of soil:** For selection of soil to be used as embankment fill **CBR test** is required to be conducted on material, CBR test is conducted on ground soil, embankment fill, prepared sub-grade & blanket material to ensure the minimum specified CBR value of these materials to be used in construction. This test is carried out on soil sample in laboratory as per procedure given in IS: 2720 (Part 16):1987 & in field as per IS: 2720 (Part 31) - 1969.
- ii) **Quality Assurance Test on Compacted Layer:** Quality Assurance Tests are required to be conducted on part completion stages of formation, prior to clearing for further earthwork.

Heavy Proctor test is required to be conducted to determine the Maximum Dry Density of soil as per IS: 2720(Part 8). In-situ density is measured in the field by Sand Replacement Method (IS: 2720 – Part 28) or Core Center Method (IS: 2720 – part 29) to calculate the degree of compaction, this shall be determined in laboratory as per BIS procedure with the specified frequency of earthwork quantity as envisaged

in “Comprehensive Guidelines of Earthwork in Railway Projects”, (with all correction/ amendment slips).

2.10.9 Frequency of Quality Assurance Tests

- a) CBR test for selection of formation materials and other tests required for ensuring conformation of the materials (blanket, subgrade) as per specification e.g. size gradation, Cu, Cc, Los Angeles Tests, OMC/MDD etc. shall be conducted at following frequency:
 - i) Embankment Fill: one set of tests for every 5000 cum.
 - ii) Prepared subgrade: one set of tests for every 2000 cum
 - iii) Blanket material: one set of tests for every 500 cum.
- b) In-situ Degree of Compaction (Or In-situ dry density measurement) test shall be conducted on each compacted layer to random pattern at following frequency for the different layers:
 - i) Embankment Fill: one density measurement at every 500 sqm surface area of each compacted layers.
 - ii) Blanket and Prepared Subgrade: one density measurement at every 200 Sqm surface areas of each compacted layers.

2.10.9.1 A field trial for compaction on a test section shall be conducted on fill material to assess the optimum thickness of layer and optimum number of passes for the type of roller planned to be used to arrive at desired density. Procedure for field compaction trials is given in Annexure –IV of ‘RDSO Guidelines for Earthwork in Railway Projects’ for guidance.

Earthwork shall be done in layers not exceeding 300 mm in thickness in the loose state, and compacted preferably at or near the optimum Moisture Content (OMC) with suitable heavy vibratory rollers to obtain the specified density. The number of passes of the rollers and the optimum thickness of such layer will be fixed after carrying out field trails with the roller proposed to be used, from time to time, and from location to location, the main criteria being to obtain the maximum density achievable uniformly.

2.10.9.2 Coarse grained soils which contains fines passing 75 microns IS Sieve, upto 5 percent shall be compacted to get a maximum density Index (relative density) of 70% as obtained in accordance with IS:2720 (Pt.XIV-1983).

2.10.9.3 All other types of soils when compacted shall attain at least 98% of the max. Dry density as determined using heavy compaction in accordance with IS: 2720 (Part. VIII) 1983 followed by field trials as per IS: 10379-1982 which shall form the basis for actual densities with the approval of the Engineer.

2.10.10 Where the moisture content of the borrow soil in any layer is above OMC, it shall be left for drying for a suitable period to bring down the moisture content very near to OMC before rolling is commenced. If the soil is dry, water shall be sprinkled either in the borrow pit or over spread layer, as per convenience, in order to attain a moisture content near to OMC, before rolling is commenced. Where the natural moisture content of the borrowed soil is high, compaction at higher moisture contents up to plastic limit can be allowed with the permission of Engineer.

However, its effect on the design must be analyzed and, if necessary, bank profile should be revised.

- 2.10.11 Each layer shall be compacted to the desired density over the entire width commencing from the two sides, before another layer is started.
- 2.10.12 While compacting, it shall be ensured that there is a minimum overlap of 15 cm before each run of the roller.
- 2.10.13 Care shall be taken during the compaction operation to slope the surface of the bank to facilitate the siding and to minimize the absorption of rainwater, particular attention being given to prevention of pounding.
- 2.10.14 The density of each layer of compacted soil shall be ascertained by testing an adequate number of soil samples as decided by the Engineer.
- 2.10.15 The quality of works shall be determined by considering the mean density of the samples in each layer. The mean density shall be equal to or exceed the minimum specified density. Shall the density be less than the minimum specified by more than 2% further rolling shall be done at the appropriate location.
- 2.10.16 The contractor shall be allowed to lay a further layer of soil only after compaction of preceding layer has been satisfactory.
- 2.10.17 The top of the formation shall be finished to a slope of 1 in 30 away from the center.
- 2.10.18 In bank filling above or against structures such as bridges, the materials shall be deposited in layers not more than 200 mm in thickness sloping away from the structure with each layer carefully tamped. Only the best available materials approved by the Engineer shall be used for this purpose.
- 2.10.19 Beyond the theoretical profile of bank an extra width of 50 cm shall be rolled either side which after finishing the bank up-to final height shall be dressed by removing the loose earth on account of rollers not able to compact the soil at the edge of the formation width.
- 2.10.20 The additional earth, after finishing the bank up-to final height shall be removed and spread at the toe of the bank with proper slope for drainage. No extra payment will be made for providing and subsequent removal of this extra earth and contractor is to quote his rates accordingly.
- 2.11 No hand roller or hand ramming is permitted. However, where it is physically not possible to use the mechanical roller, the compaction may be done by using hand roller or hand hammer/tamper with prior written permission of the Engineer, in which case thickness of layer to be restricted to 150 mm in loose state, so as to achieve the prescribed degree to compaction.
- 2.12 Necessary arrangement for the testing at site will have to be organized by the contractor in accordance with these specifications as directed by the Engineer and no extra payment will be made to him on this account. The contractor shall also establish a self-sufficient laboratory for soil testing and quality control testing.

2.13 SETTING UP SOIL TESTING LABORATORY AT SITE

In each contract section field soil testing laboratory should be set up (Contractor should purchase equipment for soil testing) to carry out soil testing.

2.15 Under mentioned soil tests should be carried out: -

- (i) MDD & OMC of soil.
- (ii) CBR test
- (iii) Liquid limit and plastic limit test (for classification of soil),
- (iv) Sieve analysis to classify soil as coarse grained or fine grained soil,
- (v) Field density of compact soil in each layer at an interval of 50 m this should be minimum 98% of MDD as determined using heavy compaction in accordance with IS:2720 (Part. VIII) 1982.
- (vi) In each of coarse grained soil density index (relative density) of compacted soil in accordance with IS: 2720 (Part. XIV) – 1982.
- (vii) Any other test required in connection with the works.

2.16 List of equipment (sufficient in number) required for soil testing: -

- (i) Equipment for liquid limit and plastic limit test,
- (ii) Modified proctor test mould,
- (iii) CBR testing equipment
- (iv) Tube reamer weight 4.90 kg. Drop height 450 mm.
- (v) Infrared lamp and torsion balance meter,
- (vi) IS sieve Nos. IS 100, 63, 20, 10 and 4.75 for coarse grain sieve analysis and 2mm, 1.0 mm, 600 micron, 800 micron, 425 micron, 212 micron, 150 micron & 76 micron IS sieves for fine grain sieve analysis.
- (vii) Chemical balance with weight box.
- (viii) Physical balance with weight box.
- (ix) Knife,
- (x) Tray,
- (xi) Crucibles,
- (xii) Weight,
- (xiii) Measuring cylinder,
- (xiv) Any other equipment, devices required to perform required test.

2.17 List of Equipment (sufficient in number) for Field Compaction Test.

- (i) Core cutter with Dolly-Volume 10 (x) cum,
- (ii) Reamer,
- (iii) Moisture meter (Complete set)
- (iv) Physical balance with weight,
- (v) Knife,
- (vi) Tray, ETC.
- (vii) Nuclear Density Moisture Gauge
- (viii) Any other as required

- 2.18 Soil should be used on embankment only after passing by IRCON/Engineers after conducting tests. Soil testing should be done from borrow pits and graph should be plotted. Test results should be signed by IRCON/ Engineers.
- 2.19 Under mentioned registers should be maintained at site and contractor's signature obtained.
- (i) MDD & OMC of soil
 - (ii) CBR test records
 - (iii) Sieve analysis of soil
 - (iv) Plastic limit and liquid limit of soil,
 - (v) Record of passing soil,
 - (vi) Field compaction result layer-wise at 50 m interval.
 - (vii) Earthwork calculation registers
 - (viii) Site order book.
 - (ix) Log book of daily work done.
 - (x) Any other register required for work/ as instructed by Engineer.

All above register should be submitted to Project Engineer along with each CC bill.

2.20 PEGGING OUT OF ALIGNMENT

- 2.21 The alignment should be marked on the ground from apex to apex of adjoining curves, so that there is no possibility of having lateral shift in alignment produced from two ends. On straight pegs should be fixed at 50 m interval and on curve it should be fixed at 25 m interval and at all TPs.

All along the length of the proposed New Line at a intervals of about half a kilometer, alignment reference pillars have been set up the Employer using latest survey equipment such as DGPS and Total Stations; in addition five reference pillars have been erected for each of the curves to indicate the start & end of the overall length of the curve and its circular portion and apex, by the Employer. In the design drawings showing the plan and 'L' section, which forms part of the tender, the co-ordinates for these pillars have also been given. This has been done to facilitate setting of the alignment of the proposed line. The contractor along with the Engineer should verify the details of these alignment pillars, soon after taking possession of the site. If any mistakes are detected in these details, the same should be indicated to the Engineer before starting any other work. These detected mistakes should be corrected by the Contractor in consultation with the Engineer. These corrections should be got approved from the Engineer.

The contractor shall then in presence of the Engineer establish working alignment reference markers at shorter intervals, adequately connecting them to the reference pillars set up by the Employer in the Project length. The location of these subsidiary alignment markers should be got approved from the Engineer. An up to date record of all alignment pillars, and corrections, if any done, shall be maintained by the contractor and also the Engineer.

- 2.22 Top of sub-bank should normally be 30 cm above HFL but depending to the site conditions the height of sub-bank should be decided by Engineer in charge of the work. The top level of sub-bank should be decided before starting the work so that toe line can be marked correctly.
- 2.23 Earthwork should not be started in bank and sub-bank till dag belling at toe line is done and it is checked by Engineer in charge. Dag belling of toe line should be done at a distance of 1 meter from actual toe of bank/sub-bank. Height of sub-bank should be decided before dug belling is done so that toe line (including sub-bank) can be marked correctly. Dag belling of toe should be done considering 50 cm. Extra width for main bank (which is to be dressed later on), in case of sub-bank extra width should be considered for main bank as well as for sub-bank i.e. total extra width of 100 cm.

2.24 MEASUREMENT AND PAYMENT.

- 2.24.1 All payments for earthwork, unless otherwise specified, will be made on the basis of cross-sectional measurements of the finished works of embankment and cutting as per approved plans. It shall be the responsibility of the contractor to ensure that no work on embankment / cutting shall be commenced until the existing ground levels at the different cross-sections have been observed and recorded and such record of levels have been jointly signed by the contractor and the Engineer or their authorized representative.
- 2.24.2 Cross-sectional profiles, plotted on the basis of the observed ground levels shall also be jointly signed by the contractor and the Engineer or their authorized representatives. The point at which cross-sectional ground levels are to be recorded and the extent of leveling work to be done shall be decided by the Engineer. Due record shall be given to correct assessment of quantity. The contractor may bring to the notice of the Engineer such additional cross-sections that in his opinion should be observed for proper assessment of quantities. Such representations however should be made before the commencement of any earthwork. The Engineer's decision thereon shall, however, be final and binding on the contractor.
- 2.24.3 In case earthwork is done under water in isolated locations rates quoted by the tenderer must take into account all possibilities of base settlement in marshy area etc. after making necessary investigation and payment shall be made only on final cross sections. No additional payment or any claim will be accepted.
- 2.24.4 If bandelling etc. is required for earthwork under water to be contained, the rate for earthwork would cater for this.
- 2.25 The "Turving of bank" will not be commenced before slopes are dressed to the specific section and without the written permission of the Engineer. It will consist of sods not less than 7.5 cm in thickness and 23 cm square, well beaten into the slope of the bank, and laid in manner so that their edges are in close contact and form a level and compact surface. The contractor shall be responsible to ensure that the turf grows properly. In the event of its not doing so, he will replace such parts, as have not grown at his own expenses.

- 2.26 When the earth for making of formation is borrowed from adjacent private lands contractor must ensure that minimum distance of borrow pit in private land from the toe of new bank is at least equal to the height of bank plus 3.0 meters.
- 2.27 Under no circumstances incomplete work will be taken over by the department. The contractor shall notify sufficiently in advance his intention of handing over a particular stretch of completed/finished work so as to enable recording final levels.
- 2.28 In filling in Embankment shall be paid as per items of BOQ, based on final finished cross sections. Rate shall be inclusive all labour, material, machinery, taxes and any other incidental expenditure & nothing extra will be paid.

Similarly in cutting also payment shall be made as per accepted rate as per final cross section of cutting and nothing will be paid extra.

Particular Technical Specifications

PART-2 : BRIDGE WORK

PART-2 : BRIDGE WORK

SECTION-1: EXCAVATION & CONCRETING WORK

3.0 EXCAVATION FOR STRUCTURES.

- 3.1 Pits/ trenches for foundations of bridges, culvert wells, apron and other structures shall be taken out to the levels and dimensions shown on the approved drawings or to such other levels and dimensions as the Engineer may direct. The bottom of all excavations shall be carefully levelled and stopped on benches as directed by the Engineer. Any pocket of soft or loose materials and fissures in the bottom pits and trenches shall be removed and the cavities so formed filled or grouted with concrete as directed by Engineer. When any excavation has been done and trimmed to the required levels and dimensions, the Engineer shall be informed accordingly so that he may inspect the complete pit or trench and no excavation shall be filled in and covered with concrete until it has been inspected and the contractor has been authorized to proceed with work. All surplus excavation not required for refilling shall be deposited in embankments, or otherwise disposed-off as directed.
- 3.2.1 The contractor shall be responsible for assumption and conclusions regarding the nature of materials to be excavated and the difficulty of making and maintaining the required excavations and performing the work required as shown on the drawing and in accordance with these specifications. Sheet piling, shoring, bracing, draining, dewatering, etc. shall be furnished and installed as required and the cost thereof shall be included in the unit rate quoted for the item of excavation. The contractor shall be held responsible for any damage to any part of the work and property caused by collapse of sides of excavations. Material may be salvaged if it can be done with safety for the work and structures, as approved by the Engineer. However, no extra claim shall be entertained for material not salvaged or any other damage to contractor's property as a result of the collapse. He shall not be entitled to any claim for additional payment for having to re-do the excavation as a result of the same.
- 3.3 All excavation for structures shall generally be as small as practicable, consistent with the proper construction of work. Any excavation taken out to a greater depth than that required shall be backfilled with same grade of concrete as in foundation at the cost of the contractor.
- 3.4 Where water is met with during excavation due to stream flow, seepage, shoring, rain or other reasons, the contractor shall take adequate measures such as bailing, pumping, constructing diversion channel, drainage channel, bonds and other necessary works to keep the foundation trenches dry and to protect the green concrete against damage by eruption or sudden rising of water level. Approval of the Engineer shall be required for any method adopted for the adequacy of dewatering and protection arrangements and for the sound safety of the work.

- 3.5 Refilling/ Backfilling of foundation pits and trenches shall be carried out only after the foundation and structure works within the excavation have been inspected and approved by the Engineer. Unless otherwise directed by the Engineer all fillings shall consist of approved materials. Timber sheeting and other excavation support shall be carefully removed as the filling proceeds but the removal of such supports will not relieve the contractor of his responsibility for the stability of the works.

Backfill shall be placed in horizontal layers not to exceed 20 cm in thickness. Each layer shall be compacted with proper moisture content and with such equipment as may be required to obtain a density equal to or greater than 95% of maximum as determined by the relevant Indian Standards. Trucks or heavy equipment for depositing or compacting backfill shall not be used within 1.5 m of building walls, piers, or other facilities which may be damaged by their weight or operation. The methods of compaction shall be subject to the approval of the Engineer. Pushing of earth for backfilling shall not be resorted to under any circumstances.

Backfill adjacent to pipes shall be hand placed, free of stones, concrete, etc. compacted uniformly on both sides of the pipe and where practicable, to a depth of 300 mm over the top of pipes. While tamping around pipe, care shall be taken to avoid unequal pressures. On completion of structures, the earth surrounding them shall be accurately finished to line and grade as shown on the drawings. Finished surface shall be free of irregularities and depressions and shall be within 50mm of the specified level.

Backfills on bridge approaches shall be placed in accordance to Indian Railways Bridge Manual 1998 (latest edition).

3.6 MEASUREMENTS OF PAYMENT

- 3.6.1 Excavation for structures shall be measured in cubic meters, limited to the dimensions shown in the approved drawing as per the bottom plan of the foundation. Foundation sealing, de-watering including pumping shall be deemed to be incidental to the work and no extra payment shall be payable for this work.
- 3.6.2 For any special treatment of foundation such as grouting of cavities and fissures, extra payment will be made at rates arrived at in terms of contract conditions.

3.7 RATES

The contract unit rate for the item of earthwork in excavation for structures shall be paid for carrying out the required work including following or any other activity to complete the work –

- i) Setting out including all ancillary works like surveying, pegging and supply of pegs etc.

- ii) Construction of necessary sheeting, shoring and bracing and then subsequent removal.
- iii) Removal of all logs, stumps, grubs and other deleterious matters and obstructions for placing foundations including trimming of bottom of excavations.
- iv) Foundation sealing, de-watering including pumping.
- v) Backfilling / refilling upto the top of foundation clearing up the site and disposal of all surplus materials inclusive of all leads, lift, descents, taxes, royalties etc.
- vi) All labour, materials, tools, constructions plants, safe guards and incidental necessary to complete the work as per specification.

4.0 MATERIALS FOR STRUCTURES

All materials to be used in the work shall be in conformity with the requirement laid down hereunder. All other materials not specified herein fully are required to be used in the work conforming to the appropriate code and specifications. These materials shall only be used only after approval of Engineer or his representative and the rejected materials, if any, shall be removed from site and replaced by the contractor at his own expense.

4.1 BINDING WIRE

Binding wires used for binding the reinforcement shall be of approved quality soft GI wire not less than 1 mm (18 SWG) size, conforming to IS: 280 & IS4826.

4.2 REINFORCEMENT STEEL

- 4.2.1 All structural steel for bridges shall conform to IS: 2062 - 2011 (with latest amendment).
- 4.2.2 Reinforcement to be used in RCC bridge works shall conform to IS: 1786 - 2008 (with latest amendment). All reinforcement work shall be executed in conformity with the drawings supplied and instructions given by the Engineer and shall generally be carried out in accordance with the relevant Indian Standards Specifications (IS: 2502) (with latest amendment).
- 4.2.3 High Tensile pre-stressing steel (strands) used for PSC girders shall conform to IS: 6006-1983 class-I type (with latest amendment).
- 4.2.4 Reinforcement shall be measured in length for different diameters used in the works excluding overlaps and over weights. From the length so measured, the weight of reinforcement shall be calculated in tones on the basis of standard weights as per IS:1732. Lengths shall exclude hooks at ends. Wastage, overlaps, coupling, welded joints, spacer bars, chairs etc including annealed GI wire 1 mm for binding of reinforcement. The cost of all these items including binding wire shall be deemed to be included in the rates of Reinforcement works / RCC works.

The unit rate for RCC work / Reinforcement work shall include cost of bending, placing, welding if required and fixing & binding in position of reinforcement as

shown on the drawings and as directed by the Engineer. It shall also include cost of all devices for keeping reinforcement in approved position, cost of jointing as per approved method and all wastage, overlaps, chairs and spacer bars etc.

4.3 TIMBER

The timbers used for structural purpose whether permanent/semi-permanent or temporary work shall conform to IS: 883 (with latest amendment).

4.4 WATER FOR CONCRETE AND MORTAR

Water used for washing of aggregates and for mixing and curing concrete shall be clean and free from injurious amounts of oils, acids, alkalis, salts, sugar, organic materials or other substances that may be deleterious to concrete or steel. Normally potable water from an approved source may be considered satisfactory for washing aggregates, mixing and curing concrete, and shall comply with the provision of IS : 456 (2000).

4.5 AGGREGATE & ADMIXTURES FOR CONCRETE

4.5.1 AGGREGATES

General – The aggregates (coarse and fine) shall comply with the requirements of IS: 383. Where required by the engineer, aggregates shall be subjected to the tests specified in IS: 383. These tests shall be done in accordance with IS: 2386 (Part I) to IS: 2386 (Part VIII) and shall be obtained from a source approved by the Engineer.

4.5.2 Aggregate which are not clean are to be washed to the satisfaction of the Engineer or his representative in water of potable quality as described in Clause 4.4. If the Engineer so directs, the contractors shall provide and operate a washing plant to ensure adequate supply of clean aggregates within the approved grading limit. All such washed aggregates shall be stored and drained for at least 24 hours before being used for concreting.

4.5.3 The coarse aggregate / fine aggregate, unless otherwise specified or authorized by the Engineer shall not be delivered to the site. All aggregates shall be protected from dust contamination by methods approved by and to the satisfaction of the Engineer or his representative.

4.5.4 CONCRETE ADMIXTURES –

4.5.4.1 General

The Engineer may permit the use of admixtures for imparting special characteristics to the concrete or mortar on satisfactory evidence that the use of such admixtures does not adversely affect the properties of concrete or mortar particularly with respect to strength, volume change durability and has no deleterious effect on reinforcement.

The admixtures, when permitted, shall conform to IS: 9103.

Calcium chloride or admixtures containing calcium chloride shall not be used in structural concrete containing reinforcement, prestressing tendon or other embedded metal.

The admixture containing Cl & SO₃ ions shall not be used.

Admixtures containing nitrates shall also not be used. Admixtures based on thiocyanate may promote corrosion and are therefore prohibited.

Concrete admixtures are proprietary items of manufacture and shall be obtained only from established manufactures with proven track record, quality assurance and full-fledged laboratory facilities for the manufacture and testing of concrete. Naphthalene or melamine based admixtures as approved by the Engineer only shall be used in the work. The admixture shall be non-air entraining type.

The contractor shall provide the following information concerning each admixture after obtaining the same from the manufacturer:

- a) Normal dosage and detrimental effects, if any, of under dosage and over dosage.
- b) The chemical names of the main ingredients in the admixtures.
- c) The chloride content, if any, expressed as a percentage by the weight of the admixture.
- d) Values of dry material content, ash content and relative density of the admixture which can be used for Uniformity Tests.
- e) Whether or not the admixture leads to the entrainment of air when used as per the manufacturer's recommended dosage, and if so to what extent.
- f) Where two or more admixtures are proposed to be used in any one mix, confirmation as to their compatibility.
- g) There would be no increase in risk of corrosion of the reinforcement or other embodiments as a result of using the admixture.
- h) Retardation achieved in initial setting time.

4.5.4.2 Physical and Chemical Requirements

Admixtures shall conform to the requirements of IS: 9103. In addition, the following conditions shall be satisfied.

- a) "Plasticizers" and "Super- Plasticizers" shall meet the requirements indicated for "Water reducing Admixture".
- b) The air content of freshly mixed concrete in accordance with the pressure method given in IS: 1199 shall not be more than 1 percent higher than that of the corresponding control mix.
- c) There shall be no chloride content in admixture when tested in accordance with IS: 6925.
- d) Uniformity tests on the admixtures are essential to compare qualitatively the composition of different samples taken from batch to batch or from the same batch at different times.

- e) All tests relating to the concrete admixtures shall be conducted periodically at an independent laboratory and compared with the data given by the manufacturer.
- f) While qualifying the admixture the infra-red spectrograph plot should be given. Each batch of the supply should be tested for I.R. Spectrograph and prove the consistency of supply.

4.6 SAMPLES AND TESTS

- 4.6.1 GENERAL: The samples of all the materials proposed to be used by the contractor in the work shall be got tested by the contractor in an approved laboratory and necessary test certificates including manufacturers certificates of tests, proof sheets, mill sheets etc. showing that the materials have been tested in accordance with and conform to the requirements of the appropriate IS Codes and other relevant standard specifications. Besides, these specifications shall be supplied in original free of charges on request to the Engineer or his representative.
- 4.6.2 Samples of the following materials shall be submitted to the Engineer or his representatives free of charge for testing and approval.
 - i) Coarse and fine aggregate,
 - ii) Any other materials as directed by Engineer.
- 4.6.3 Samples provided to the Engineer or his representative for their retention is to be kept in leveled boxes suitable for storage. Materials or workmanship not corresponding in character and quality with approved samples shall be rejected.
- 4.6.4 Samples required for testing and approval must be supplied giving sufficient time to allow for such testing and approval, due allowance being made to the fact that if samples are rejected further new samples shall be required. Delay to the works arising from the late submission of samples shall not be acceptable as a reason for delay in the completion of the work.
- 4.6.5 If required, the testing of the materials may be carried out by IRCON in any laboratory of its choice at the cost of the contractor. If the materials are not found to comply with the various provisions laid down in the relevant IS Codes. Other relevant Standard Specifications or these specifications, the same shall be rejected irrespective of the test certificate submitted by the contractor.
- 4.6.6 In addition, the Engineer shall have the right to require the contractor at any time to draw samples of aggregates or any other materials from stock piles on the site or any other locations to be drawn in accordance with IS-2386 and tested in laboratory approved by the Engineer in accordance with the appropriate clause of IS: 2386 at the cost of the contractor.
- 4.6.7 Tests for the determination of impurities in the sand shall be made once daily until the Engineer is satisfied that the specified compression strength is being

regularly obtained, such tests shall be made once weekly and at other times as directed by the Engineer.

- 4.6.7.1 The cement and steel brought by the contractor will also be tested from each lot as directed by the Engineer or his representative. The contractor will also furnish original purchase bills and manufacturer's test certificates. Random samples shall also be taken to assess the weight per meter of steel. The payment shall be on the actual weight basis of the unit weight (theoretical) given in the IS code without any advantage or disadvantage of the allowed tolerances.

4.6.8 ADDITIONAL TESTS

In addition to the tests required under clause hereof the Engineer or his representative may order tests to be carried out by an independent person appointed by him at such place or in such laboratory as he may determine in accordance with the appropriate clause of IS: 2386 or IS: 2586 and the cost of such tests shall be borne by the contractor.

- 4.6.9 The results of all such tests as described herein above and later in succeeding paras shall be forwarded to the Engineer or his representative for his retention as record.

4.6.10 INSPECTION OF MATERIALS

- 4.6.10.1 Whenever the materials are to be inspected, the contractor shall, having regard to the location of the materials and the nature of the inspection, test or examination required, give to the Engineer or his representative at least one week's notice of such materials being ready for inspection, test or examination.

- 4.6.10.2 Delay to works arising from the late submission of such notice will not be acceptable as reason for delay in the completion.

4.6.11 REJECTION OF MATERIALS

- 4.6.11.1 Materials shall be tested before leaving the manufacturer's premises. Materials may as well be tested on the site and they may be rejected if found not suitable or not in accordance with the specifications notwithstanding the results of tests at manufacturer's works or elsewhere or test certificates.

- 4.6.11.2 The Engineer or his representative shall have the right to order at any time, that any aggregate or other construction materials which do not meet with his approval shall not be used in the works and such rejected materials shall be removed from the site by the contractor at his own expenses, notwithstanding any prior approval which might have been given earlier.

- 4.6.11.3 In case of default on the part of the contractor in removing rejected materials within the time specified in notice, the Engineer shall be at liberty to have them removed by other means at the cost of the contractor.

4.6.12 **STORAGE OF MATERIALS**

- 4.6.12.1 All materials to be used in permanent works shall be stored on racks, supports, stock piles in bins under cover etc. as appropriate, to prevent deterioration or damage from any cause whatsoever to the satisfaction of the Engineer or his representative.
- 4.6.12.2 The contractor shall at all times maintain on the site such quantities of each type of aggregates as are considered by the Engineer or his representative to be sufficient to ensure continuity of works.
- 4.6.12.3 Each type and grading of aggregate shall be stored in separate tacks on a hard floor having sufficient slope to ensure adequate drainage of surplus water. Wet and washed aggregate shall be kept in storage for at least 24 hours to ensure adequate drainage before being used for concreting.

4.7 **CEMENT**

Cement for use in the works will be procured by the contractor from the reputed manufacturers of OPC-43/53 grade confirming to relevant IS Specification from the authorized dealers only as per approved by Engineer / Employer. Cement shall be brought in bags, nominal weight of each shall be deemed to be 50 kg.

Cement older than 3 months from the date of manufacture, as marked on the bags, should not be used. The cement bags in proper bag packing should bear the following marking

- i) Manufacturer's name.
- ii) Registered trade mark of manufacturer if any.
- iii) Type of cement
- iv) Weight of each bag in kgs.
- v) Date of manufacture, generally marked as week of the year

Note: - In exceptional case when OPC is not available, then Portland Pozzolana Cement (PPC) can be used with special approval of the Engineer / Employer. When PPC is used the following stipulation should be followed.

- a) When Portland Pozzolana cement (PPC) is used, it is to be ensured that proper damp curing of concrete at least for 14 days is done and supporting formwork shall not be removed till concrete attains at least 75% of the design strength.
- b) Compatibility of chemical admixtures and super plasticizer with Portland Pozzolana cement shall be ensured by trials before use.

5.0 **CEMENT CONCRETE WORKS:**

(As per IRS Concrete Bridge Code, latest revision)

5.1 **GRADE OF CONCRETE**

- 5.1.1 For all items of concrete only design mix shall be used if not allowed expressively otherwise in the contract. Prior to the start of construction the Contractor shall design the mix and submit to the Engineer for approval, the proportions of materials, including admixtures to be used. Water-reducing admixtures (including plasticizers or super- plasticizers) may be used at the Contractor's option, subject to the approval of the Engineer. The design mix should be tested in field laboratory and in case of change of source of constituent materials; it should be re-design of mix. Nominal mix concrete may be used where it is shown in the drawings or as directed by the Engineer.

5.2 STRENGTH REQUIREMENT OF CONCRETE

- 5.2.1 In designation of concrete mix, letter 'M' refers to mix and the number refers to the 28-day characteristic compressive strength of that mix on 150 mm cubes expressed in N/mm sq.
- 5.2.2 The compressive strength requirements for various grades of concrete shall be as given in table below:

Sn.	Grade of concrete	Compressive work test strength in N/mm ² of 150 mm cubes after mixing conducted in accordance with IS : 516
		Min. at 28 days
i)	M15	15
ii)	M20	20
iii)	M25	25
iv)	M30	30
v)	M35	35
vi)	M40	40
vii)	M45	45

- 5.2.3 Where the strength of a concrete mix as indicated by tests, lies in between the strength of any two grades specified in table above, such concrete shall be classified for all purpose as concrete belonging to the lower of the two grades between which its strength lies.

5.3 TESTS AND STANDARDS OF ACCEPTANCE

The concrete shall be deemed to comply with the strength requirements as per IS code: 456:2000. The concrete mixes shall be designed on the basis of required strength, desired workability, the maximum size of aggregate and also the various grades of cement as specified in IS: 10262-2009 (with latest revision). Accordingly, the required cement content shall be ascertained. When the proportions of a concrete mix have been approved by the Engineer, the contractor shall not vary the quality or source of the materials or the mix without the written approval of the Engineer.

5.3.1 WORKS STRENGTH TESTS FOR CONCRETE

The contractor shall be held responsible for ensuring that the compressive strength of the concrete as placed is not less than the designed strength as per approved drawings.

Cubes for strength tests shall be made in accordance with ARE: 516. Each test shall be conducted on the specimens, six of which shall be tested at seven days and the remaining six at 28 days. The samples of concrete shall be taken on each day of concreting and cubes shall be made at the rate of one for 5 cubic meters of concrete or a part thereof. However, if concreting done in a day is less than 30 cubic meter the minimum number of cubes can be reduced to 6 with the specific permission of the Engineer or his representative. Similar work tests shall be carried out whenever the Quality and grading of materials is changed irrespective of the quantity of concrete poured.

The contractor shall provide at his own expense all necessary labour, materials including cement moulds, equipment for sampling and all other ancillaries required in preparing specimens etc. and arrange to carry out test on these specimens in his own field laboratory. The contractor shall test these specimens in presence of the representative of the Engineer. Results shall be maintained in duplicate under the joint signature of the contractor and the Engineer's representative. One set of the result being kept with the contractor and the other with the Engineer's representative.

All work shall be carried out under the supervision of a qualified and competent Engineer of the contractor who shall supervise proportioning, placing and compacting of concrete at all stages.

The Engineer reserves the right to take samples of concrete test cubes independently at his own discretion. The contractor shall provide all facilities at his own expense in preparation of such samples and concrete test tubes such as labour materials including concrete moulds, equipment for sampling and all other ancillaries required in their preparation. Contractor shall also arrange to transport these specimens to the laboratory selected by Engineer at his own cost. Contractor shall depute his representative during testing who shall sign the test results as a token of contractor's acceptance.

5.3.2 STANDARD OF ACCEPTANCE

Standards of acceptance of cube strength of concrete shall be as per relevant codes and specifications.

5.3.3 PROPORTIONING CONCRETE

The provisions specified in IS-10262-1982 and relevant IS code for preparation of proportioning and mix design for controlled concrete will apply in general unless otherwise modified by the Engineer-in-Charge.

5.3.4 WORKABILITY OF CONCRETE

Optimum quantity of water and admixture shall be mixed just to produce a design concrete of required workability. Workability shall be such that the concrete surrounds and properly grips all reinforcement. The degree of consistency, which shall depend upon nature of work and method of vibration of concrete, shall be determined by regular slump tests to be carried out by the contractor at his cost. The frequency of such tests and the natures of slumps shall be maintained within the limits specified by the Engineer. The Engineer also reserves the right to carry out slump tests independently at his own discretion.

5.4 CONTROLLED CONCRETE

- 5.4.1 The proportions of the ingredients shall be taken by weight from the stock piles collected at site and already approved on the basis of preliminary tests. Care shall be taken that the supply of properly graded aggregate of uniform quality is maintained till the completion of works except where it can be shown to the satisfaction of the Engineer that the supply of properly graded aggregate of uniform quality cannot be maintained till the completion of works. Grading of aggregate shall be controlled by obtaining them in the right proportions as required. Grading of coarse and fine aggregate shall be checked as frequently as possible and as determined by the Engineer.

Cement shall have to be weighed from bulk stocks at site and not by bags, it shall be weighed separately from the aggregates. Water shall either be measured by volume in calibrated buckets or weighed. All necessary equipment shall be maintained in a clean and serviceable condition and their accuracy shall be periodically checked.

To maintain the specified water cement ratio constant and at its correct value, moisture contents in both fine and coarse aggregates shall be determined with reference to IS : 2386 (Part-III) and amount of mixing water shall then be adjusted suitably.

5.5 MIXING CONCRETE

- 5.5.1 Small volume of concrete can be mixed at site in a drum type mechanical mixer with weigh batching arrangement in first class working condition. Mixing shall be continued till materials are uniformly distributed and an uniform colour of the entire mass is obtained and each individual particle of the coarse aggregate shows complete coating of cement mortar. The mixing shall in no case be less than 2 minutes after all the ingredients have been put into the mixer.
- 5.5.2 Proportion of ingredients required for ordinary concrete containing one 50 kg bag of cement for different grades of concrete is given below:

Grade of concrete	Mix by volume
M10	1:3:6
M15	1:2:4

- 5.5.3 Mixers which have been out of use for more than 30 minutes shall be thoroughly cleaned before putting in a new batch. Mixing plant shall be

thoroughly cleaned before and after use. A standby mixing plant equivalent to that in use shall be provided and maintained ready for immediate use during any break down.

- 5.5.4** For concrete of major and minor bridges involving major volume of concrete, suitable Batching Plant will be required, to be installed by the contractor at his own cost and concrete shall be done by batching plant only.

5.6 FALSEWORK & FORMWORK

- 5.6.1** The term form work includes all temporary or permanent form essential for forming the concrete, together with all temporary construction props, bracings required for the support. In general, the erection and removal of form work shall be in accordance with the provision given under clause 6.0 of I.R.S. Concrete Bridge Code 1997 (with latest revision).

5.6.2 CONSTRUCTION & PREPARATION OF FORM WORK FOR BRIDGES

- 5.6.2.1** Forms for concrete shall be made of either metal or timber suitably lined and of substantial and rigid construction true to shape, alignment and dimensions as shown on the approved drawings.

- 5.6.2.2** Forms shall be mortar tight and shall be made sufficiently rigid by the use of ties and bracings to prevent any displacement, deflection or movement of any kind. They shall be strong enough to withstand of the construction, all pressure, ramming and vibration, movement of persons, materials and plant during and after placing the concrete. Special measures shall be taken to ensure that the form work does not hinder the shrinkage of concrete because without this cracking could occur before the form work is removed.

- 5.6.2.2.1** When the forms are ready for commencing concreting, the contractor shall inform the Engineer or his representative to inspect and accept the forms as to their strength, alignment and general fitness. Being satisfied with the form work Engineer then may allow the contractor for pouring concrete but such inspection and permission shall not relieve the contractor of his responsibility for safety of men, machinery, materials and for results obtained.

5.6.3 REMOVAL OF FORM WORK

- 5.6.3.1** The consent of Engineer or his representative shall be obtained in all cases before removing any form work but such permission shall not relieve the contractor of his responsibility in respect of any injury or damage to the concrete work arising from the removal of the forms.

- 5.6.3.2** Forms shall be so constructed and fitted as to be removable in sections in the desired sequence without damaging the surface of concrete or disturbing other sections.

5.6.3.3 Due consideration; shall be given to the local conditions, character of structure, the weather, climate and temperature and other conditions that influence the setting of concrete before removal of form work.

5.6.3.4 Where internal metal ties are permitted, they shall be extracted or cut without causing any damage to concrete and remaining holes filled with mortar. No permanently embedded metal part shall have less than 25 mm clear cover to the finished concrete surface. The contractor shall make good, at his own expense, any injury or damage to the concrete work arising from removal and striking of forms and supports.

5.6.3.5 Specialized formwork may be required in the case of slip formwork, underwater concreting etc. Such specialized formwork shall be designed and detailed by competent agencies and a set of complete working drawings and installation instructions shall be supplied to the Engineer. The site personnel shall be trained in the erection and dismantling as well as operation of such specialized formwork. In case proprietary equipment is used the supplier shall supply drawings, details, installation instructions, etc. in the form of manuals along with the formwork. Where specialized formwork is used close coordination with the design of permanent structure is necessary. For specialized formwork, the form lining material may be steel sheet of appropriate thickness.

For slip form the rate of slipping the formwork shall be designed for each individual case taking into account various parameters including the grade of concrete, concrete strength, concrete temperature, ambient temperature, concrete admixtures, etc.

In order to verify the time and sequence of striking/removal of specialized formwork, routine field tests for the consistency of concrete and strength development are mandatory and shall be carried out before adoption.

5.6.3.6 The form works shall be cleaned and made good to the satisfaction of the Engineer before re-use. The cost of all form work shall be deemed to have been included in the rate for cement concrete items of work and shall not be paid separately.

5.7 TRANSPORT, PLACEMENT AND COMPACTION OF CONCRETE

5.7.1 The method of transporting and placing concrete shall be done with transit mixer or as approved by the Engineer or his representative. All concrete shall be so transported and placed that no contamination segregation or loss of its constituent materials takes place. It shall be done in accordance with the provision given under clause 8.0 of I.R.S. Concrete Bridge Code 1997 (with latest revision).

All form work and reinforcement, contained in it shall be cleaned and made free from standing water, dust, snow immediately before placing of concrete. No concrete shall be placed in any part of the structure until the approval of the Engineer or his representative has been obtained. Concrete shall be

compacted in its final position within 30 minutes of its discharges from the mixer. Concrete when deposited shall have a temperature of not less than 4.5 degree C and not more than 38 degree C.

Except when otherwise agreed to by the Engineer or his representative, concrete shall be deposited in horizontal layers to a compacted thickness of not more than 450 mm when internal vibrators are used and not exceeding 300 mm in all other cases. In no case concrete shall be allowed to be dropped from a height of more than 1.50 meters.

When concrete is conveyed by chutes the plant shall be of such size and design so as to ensure practically continuous flow. Slope of the chute shall be so adjusted that the concrete flows without the use of excessive quantity of water and without segregation of its ingredients. The delivery end of chute shall be as close as possible to the point of deposit. The chute shall be thoroughly flushed with water before and after each working period and the water used for this purpose shall be discharged outside the form work.

All concrete shall be compacted to produce a dense homogeneous mass with the help of vibrators except in case of concrete poured under water, where vibrator cannot be used. To ensure thorough and properly compacted concrete the contractor shall carry out a necessary compacting factor tests at his own cost at such frequency and the value of compacting factor to be maintained as decided by the Engineer. The contractor shall have to carry out other tests like Penetrometer and Vee-Bee Consistometer tests or any other tests as directed by the Engineer at his own cost. The Engineer, however, reserves the right to carry out such tests, independently at his own discretion. Sufficient vibrators in serviceable condition shall be kept at site so that spare equipment is always available in the event of break-downs. Internal vibrators shall be capable of producing not less than 10,000 cycles per minute, and external or form vibrator not less than 3,000 cycles per minute. Vibration shall not be applied through reinforcement, and where vibrator of the immersion type is used, contact with reinforcement and all inserts shall be avoided as far as practicable.

5.8 CONCRETING UNDER WATER

- 5.8.1 The methods, equipment, materials and proportions of the mix to be used shall be got approved by the Engineer or his representative before concreting under water. Extra care shall be taken to prevent the cement being washed out and the concrete shall be deposited by means of a tremie or using the skip boxes system. Pumping shall not be done while concrete is being placed or until 24 hours thereafter.
- 5.8.2 The deposition of concrete should be done continuously until it has been brought to the required height. The top surface shall always be kept as nearly level as possible to prevent formation of scum.

5.9 FINISHING

- 5.9.1 Immediately after the removal of forms, all exposed bars or bolts passing through RCC member and used for shuttering or any other purpose shall be cut inside the RCC member to a depth of at-least 25 mm below the surface of the concrete and resulting holes be closed by cement mortar as per instruction of Engineer.
- 5.9.2 If in the opinion of the Engineer, the pockets/honey comb in the structure is found to such an extent or character as to affect the strength of the structure materially or endanger the life of the reinforcement, he may declare such concrete defective and order for its removal and replacement at the expense of the contractor.

5.10 CURING

- 5.10.1 All concrete shall be protected immediately after compaction and during hardening from harmful effects of rain, funning water, sunshine, frost and driving winds, shocks, vibrations, traffic and rapid temperature changes. All exposed faces of concrete shall be kept continuously wet by applying water or covering with wet sacking, hessian etc. for a period of not less than 14 days from the date of deposition. Where members are of considerable size and length, with high cement content accelerated curing methods maybe applied, as approved by the Engineer.

Curing of concrete is extremely important for the strength and durability of the structure. The Contractor has to ensure desired curing of the concrete. The use of curing compound is permitted. The contractor shall give details of the curing compound and get the approval of the Employer/Engineer before use. Contractor shall cater for the cost of curing compound and other expenditure on curing in the rate of concrete as per schedule.

85% of the payment for concrete under relevant BoQ items can be released immediately after concreting. The balance 15% will be released after acceptance of work by Employer/Engineer's representative in writing.

5.11 CONSTRUCTION JOINTS

5.11.1 General

Construction joints shall be avoided as far as possible and in no case the locations of such joints shall be changed or increased from those shown on the drawings, except with express approval of the Engineer. The joints shall be provided in a direction perpendicular to the member axis. Sequencing of concrete placement should be organized in such a way that cold joints are totally eliminated. The sequence of concreting shall be submitted for approval of Engineer prior to concreting of the structural element.

Concreting shall be carried out continuously upto the construction joints, the position and arrangement of which shall be predetermined by the designer.

The use of construction joints in Prestressed concrete work should preferably be avoided. However, if found necessary they shall be kept to the minimum by adopting proper construction techniques.

5.11.2 The Position of Construction Joints:

Construction joints should be positioned to minimize the effect of the discontinuity on the durability, structural integrity and appearance of the structure.

As far as possible, joints should be positioned in non-aggressive zones but if aggressive zones cannot be avoided, joints should be sealed.

Joints should be positioned where they are readily accessible for preparation and concreting the preparation of the joints is more likely to be satisfactory where the cross-section is relatively small and where reinforcement is not congested.

As far as possible, joints for fair faced concrete should be located where they conform with the architectural features of the construction. Unless they are masked in this way, the positions of the joints are always obvious, even when the concrete is given a textured finish.

If substantial changes in the cross-section of a member are necessary, the joints should be formed where they minimize stresses caused by temperature gradients and shrinkage.

Joints should be located away from regions of maximum stress caused by loading particularly where shear and bond stresses are high. Construction joints between slabs and ribs in composite beam should be avoided. As a general rule joints in column are made as near as possible to the beam hunching, joints in beams and slabs should normally be made at the centre or within the middle third of the span

5.11.3 Preparing the Surface of the Joint

The minimum number of joints should be used and their construction should be simple. They should be either horizontal or vertical, because concreting sloping surfaces are usually unsatisfactory.

Where concrete is placed in vertical members e.g. walls columns and the like, the lift of concrete shall finish level or at right angles to the axis of the member, the joint line making the features of the finished work. Concreting shall be carried out continuously up to the construction joint.

Laitance, both on the horizontal and vertical surfaces of the concrete, should be removed before fresh concrete is cast. The surface should be roughened to promote good adhesion. Various methods for removal can be used but they should not dislodge the coarse aggregate particles. Concrete may be brushed with a stiff brush soon after casting while the concrete is still fresh and while it has only slightly stiffened.

If the concrete has partially hardened, it may be treated by wire brushing or with a high pressure water jet, followed by drying with an air jet, immediately before the new concrete is placed.

Fully hardened concrete should be treated with mechanical hand tools or grit blasting, taking care not to split or crack aggregate particles.

The best time for treating the joint is a matter of judgment because it depends on the rate of setting and hardening (which is itself dependent on the temperature of the concrete). Before further concrete is cast, the surface should be thoroughly cleaned to remove debris and accumulated rubbish, one effective method being air jet.

Where there is likely to be a delay before placing the next concrete lift, protruding reinforcement should be protected. Before the next lift is placed, rust loose mortar, or other contamination should be removed from the bars and where conditions are particularly aggressive and there has been a substantial delay between lifts, the concrete should be cut back to expose the bars for a length of about 50 mm to ensure that contaminated concrete is removed.

In all cases, when construction joints are made, it should be ensured that the joint surface is not contaminated with release agents, dust, or curing membrane and that the reinforcement is fixed firmly in position at the correct cover

5.11.4 Concreting at Construction Joints

When the formwork is fixed for the next lift, it should be inspected to ensure that no leakage can occur from the fresh concrete. It is a good practice to fix a 6 mm thick sponge which seals the gap completely.

The practice of first placing a layer of mortar or grout is not recommended. The old surface should be soaked with water without leaving puddles, immediately before starting on concreting; then the new concrete should be thoroughly compacted against it. When fresh concrete is cast against existing mature concrete or masonry the older surfaces should be thoroughly cleaned and soaked to prevent the absorption of water from the new concrete. Standing water should be removed shortly before the new concrete is placed and the new concrete should be thoroughly vibrated in the region of the joint.

5.12 REINFORCEMENTS

5.12.1 All reinforcement shall be cleaned thoroughly by removing loose scales, oil, grease or other deleterious materials. The contractor shall obtain the approval of the Engineer or his representative to the reinforcement when fixed in position before any concrete is deposited in the forms.

5.12.2 Bars shall be bent cold or straightened in a manner to the satisfaction of the Engineer or his representative. Bars bent during transport or handling shall be straightened before using on work. They shall not be heated to facilitate bending. Welding shall be done as per IS Code of practice or IRS Concrete Bridge Code as applicable.

5.12.3 PLACING AND MAINTENANCE OF REINFORCEMENT IN POSITION

5.12.3.1 All reinforcement bars shall be cut and accurately placed in position as shown on the approved drawings and shall be securely held in position before and during concreting by GI binding wire (as specified in Clause 4.1) and by using dense concrete spacer blocks prepared and cured as directed by the Engineer or his representative, or metal chairs, metal spacers, supporting wires or other approved device at sufficiently close intervals. Bars representative, or metal chairs, metal spacers, supporting to get displaced during concreting or any other operation over the work. Metal supports shall not extend to the surface of the concrete, except where shown on the drawings, pieces of broken stone or brick and wooden blocks shall not be used.

5.12.3.2 As far as possible, bars of full length shall be used. Where bars are required or permitted to be lapped by the Engineer, or his representative, the overlaps shall be staggered for different bars and located at points, along the span where neither shear nor bending moment is maximum. The concrete cover measured over the reinforcing bars shall be in accordance with the approved drawings.

5.13 MEASUREMENT FOR PAYMENT

5.13.1 The work of cement concrete shall be measured in cubic meters. The volume occupied by reinforcement shall not be deducted in R.C.C. works. The measurement shall also be for the purpose of computing cement consumption. Reinforcement shall be measured in length (running meter) separately for different diameters then paid as per standard weights as per IS1732, as actually used in work excluding overlaps, hooks, chairs, supports as actually placed and incorporated in the work. Wastages, overlaps, coupling, welded joints, spacebars, chairs and binding wire etc shall not be measured and cost of these items shall be deemed to be included in the rates.

5.14 SETTING OF FIELD LABORATORY BY CONTRACTOR

5.14.1 The contractor shall set up a field laboratory of his own at work site as a part of concrete work and shall be kept open for use and inspection by the Engineer / Employer at any time.

5.14.2 All the pressure gauge and other machines, equipment and measuring instruments shall be got checked and calibrated regularly as directed by the Engineer, by an independent agency and the adjustment certificate furnished to the Engineer. The contractor shall render all reasonable assistance and help in making such checks and tests etc. The cost of all checks and calibrations shall be borne by the contractor. The cost of all tests for materials and cubes shall also be borne by the contractor. Alternatively, the contractor shall arrange to get the cubes and their materials, as required tested at his own cost, in approved laboratory to the satisfaction of the Engineer.

5.15 ABUTMENTS, PIERS AND R.C.C. BOXES

The abutments, piers, pier caps are to be constructed of concrete grades as mentioned in the approved drawing. The individual members are to be monolithic with the parent member

6.0 WEEP HOLES

Weep Holes shall be provided in abutment wing wall and return wall and backfill as shown on drawing or directed by the Engineer to drive moisture from the backfilling. Weep holes shall be provided with PVC pipe as shown in the drawing. Weep holes shall be measured in running meter. The rate shall include cost of materials, carriage, all leads and lifts tools and plants complete in all respects including cleaning of weep holes.

7.0 SLOPE PITCHING AND APRON

For pitching the slopes of banks, bridge floors, apron on bridge approaches, hand packed rough stones weighing between 35 kg and 50 kg with not less than 150 mm size shall be used in such a manner as to provide maximum interlocking amongst the individual stones. The size to be adopted should suit the total thickness required as per drawings. The work should be carried out as to provide uniform slopes and curvature around abutments. The rates also include provision of steps shown in plan and pitching work under water wherever required.

8.0 PACKING BEHIND ABUTMENT

Shingle boulders to be used behind abutment, wing and return walls, shall be collected from approved source and shall not be less than 150 mm size in any direction and shall have its maximum dimension not more than 250 mm. Hand packing should be done in sections as shown in the drawing and as per relevant specifications or as directed by the Engineer.

SECTION -IX

CERTIFICATE OF FAMILIARISATION & UNDERTAKING

CERTIFICATE OF FAMILIARISATION

- A.** I/We hereby solemnly declare that I/We have visited the site/place of work and have familiarized myself/ourselves of the working conditions there in all respects and in particular, the following:
- a) Topography of the Area.
 - b) Soil conditions at the site of work.
 - c) Sources & availability of Construction material.
 - d) Borrow areas of earth.
 - e) Rates for construction materials.
 - f) Availability of local labour, both skilled and unskilled and the prevailing labour rates.
 - g) Availability of water & electricity.
 - h) The existing roads and access to the site of work.
 - i) Availability of space for putting labour camps. Offices, stores, godown, sheds engineering yards etc.
 - j) Climatic condition and availability of working days.
 - k) Prevailing all taxes, duties etc.
- B.** I/We have kept myself/ourselves fully informed of the provisions of this bid document comprising Instructions to the Tenderers, General Conditions of the Contract, Special Conditions of Contracts and Special Technical Specifications/ Conditions of contract apart from information conveyed to me/us through various other provisions in this bid document.
- C.** I/We have quoted my / our rates as 'Percentage above / below / at par " and quoted against blank items by rates in figure and words, with total cost as per Schedule of Items Rates and Bill of Quantities (BOQ), in FINANCIAL BID taking into account all the factors given above.

(Signature of Bidder/s)

Date: _____

Place: _____

UNDERTAKING

I/We hereby give an undertaking that the Construction of Major Bridges and Road Under Bridges (RUBs) for section between Urga (0 Km) to Dharamjaigarh (62 Km) in connection with Chhattisgarh East Rail Corridor will conform to the Indian Railway/RDSO specification/drawings (to the latest amendment).

Signature of Tenderer/s: -

Date: -

Section – X

FINANCIAL BID

**(Uploaded in Excel Sheet for Quoting Rate Online
Only)**

GENERAL NOTES ON THE BILL OF QUANTITIES (BOQ / SCHEDULES)

This clause shall be read in conjunction with the clause for the measurements given in Bill of Quantities.

1. The Bill of Quantities shall be read in conjunction with the Instructions to Tenderers, Conditions of Contract, General Conditions, Special Conditions of Contract, Works Requirement (Technical Specifications, and Drawings) and other documents forming part of the bid documents.
2. The rates entered in the accepted Bill of Quantities (BOQ) of the Contract are intended to provide for works duly and properly completed in accordance with the general and special (if any) conditions of the contract and the specifications and drawing together with such enlargements, extensions, diminutions, reductions, alterations or additions as may be ordered in terms of these conditions and without prejudice to the generality thereof and shall be deemed to include and cover superintendence and labour, supply, including full freight, of materials, stores, patterns, profiles, moulds, fittings, centering, scaffolding, shoring props, timber, machinery, barracks, tackle, roads, pegs, posts, tools and all apparatus and plant required on the works, the erection, maintenance and removal of all temporary works, all watching, lighting, bailing, pumping and draining, all prevention of or compensation for trespass, all barriers and arrangements for the safety to the public or of employees during the execution of works, all sanitary and medical arrangements for labour camps as may be prescribed by the employer/engineer, the setting of all work and of the construction, repair and upkeep of all centre lines, benchmarks and level pegs thereon, site clearance, all fees, duties, royalties, rent and compensation to owners for surface damage or taxes and impositions payable to local authorities in respect of land, structures and all material supplied for the work or other duties or expenses for which the contractor may become liable or may be put to under any provision of law for the purpose of or in connection with the execution of the contract, and all such other incidental charges or contingencies as may have been specially provided for in the specifications.
3. The rates to be quoted online (in excel sheet as 'Financial Bid') shall be for the complete scope of work as described in the tender document. Any item of work included in the scope of work may not be exclusively described in Bill of Quantities. The rates to be quoted in the "Financial Bid" shall also take care of all such items of work. No additional amount except for the accepted rates in the Bill of Quantities shall be payable for completing the total scope of work.
4. The rates and prices in the priced Bill of Quantities shall, except as otherwise provided under the Contract, include all construction equipment, plant, labour, supervision, materials, erection, maintenance, insurance, profit, royalty, octroi, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.

5. General directions and descriptions of items are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract document shall be made before quoting rates in the 'Financial Bid'.
6. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
7. Rates shall be entered by the bidders in figures in e-bid online format only. The system will further convert into words.
8. The rates & amount shall be quoted entirely in Indian Rupees (INR) only.
9. If bidders omit any of the Schedules / Items, the tender shall be summarily rejected.
10. In case of any dispute with reference to above paras, decision of IRCON shall be binding to the Contractor/Supplier.
11. **This Summary of Quantities/ Bill form and BOQ in PDF are here only for viewing for bidders.**

NOTE: This Annexure IV(AA) is to be attached only with Financial Bid.

Name of Work :.....

ANNEXURE IV(AA) PROFORMA FOR STATEMENT OF MINOR DEVIATIONS (Refer Clause 6. and 7. of ITT)			
Name of tenderer/firm:			
The following are the particulars of minor deviations from the requirements of the Tender Document:			
Sr. No	Clause	Deviations	Price adjustment for each deviation/s
Note: 1. The Tenderer shall indicate price adjustment against each deviation in Annexure IV(AA) of BOQ. This price is the price which the tenderer shall reduce from this tender price if deviation(s) is/are accepted by the Employer. 2. Where there is no deviation, please indicate 'No Deviations'. In case, Performa of deviations is left as blank, it will be construed that the tenderer has not proposed any deviations from tender documents. 3. If the tenderer proposes deviations in tender documents, and/or any other terms and conditions of the tender, other than in this Annexure, it will have no effect. 4. All deviations have been listed and priced in the financial proposal and deviations not priced will be treated as null and void and stand withdrawn.			

SECTION - XI

BILL OF QUANTITIES

(BOQ)

(For reference Only)

Estimate Summary

S No	Schedule	Description	Basic Amount (in Rs)
1	Schedule-A	Earthwork in Formation	3,40,62,415.16
2	Schedule-B	Bridge Work (Other than steel items)	36,95,34,989.94
3	Schedule-C	Steel items	13,84,01,475.60
4	Schedule-D	Road Works	8,67,81,124.03
5	Schedule-E	Station Buildings, Quarters, Platform Works (Civil)	32,09,890.07
6	Schedule-F	Roofing Works	9,68,24,067.30
7	Schedule-G	Other items of work not covered by above schedules (SECR-USSOR-2021)	3,67,58,682.96
		Total Basic Amount	76,55,72,645.06
		GST@18%	137803076.11
		Total Estimated Cost	90,33,75,721.17

Bill of Quantities:

S No	Description of item	Unit	Quantity	Basic Rate (In Rs.)	Basic Amount (In Rs.)
	SCHEDULE (A): Earthwork Work				
1	Earthwork in filling in Embankment Fill and Top Layer of formation including trolley refuges etc. with earth of approved quality as per "Comprehensive guidelines and specifications for Railway Formation" Specification No. RDSO/2020/GE:IRS- 0004 September-2020, Corrected upto ACS No.1 issued by RDSO, Lucknow (with latest amendments upto date correction slips) including all leads, lifts, ascents, descents, site clearances, setting out and demarcation of profile, benching, initial compaction of subsoil after levelling the surface after site clearance, spreading loose earth in 30CM layers using grader up to extra width of 0.5 M beyond designed profile, compaction (mechanical Means) using vibratory compactors so as to achieve in-situ dry density not less than 98% of MDD, top and side dressing and removal of extra earth from sides to provide final formation as a complete job as per RDSO Guidelines & designed profile. The rate shall include cutting of trees with girth up to 30 cm and separate payment will be made for cutting of trees if girth is more than 30 cm. The minimum Ev2 Criteria as mentioned in the guidelines is not applicable. Work shall be executed in strict compliance of "Comprehensive guidelines and specifications for Railway Formation" Specification No. RDSO/2020/GE:IRS- 0004 September-2020, Corrected upto ACS No.1 issued by RDSO, Lucknow (with latest amendments upto date correction slips). The rate includes royalty/taxes, all Labour, tools/Plants etc.				
1(a)	With contractors earth of approved quality and specification from outside railway land	cum	20000.00	206.99	41,39,800.00
1(b)	With suitable material available at site from excavation (Item 2 of Sch- A and Item 1 of Sch- B) with all leads and lifts.	cum	182348.34	35.54	64,80,660.00
2	Earthwork in excavation by mechanical means (Hydraulic excavator) in cutting in formation, trolley refuges, side drains, yard drains, catch water drains, etc. including leading usable cut spoils and utilise it for formation in filling (as per Item 1(b) above) and disposal of surplus unsuitable earth, site clearances, setting out and demarcation, lift, ascents, descent, loading, unloading, tools & plants, Royalty/all taxes, bailing/pumping out of water and all incidental charges as per specifications of Item 1 above, disposing off surplus unusable cut spoils with all lead as per directions of the Engineer in charge and top & side dressing to providing final				

S No	Description of item	Unit	Quantity	Basic Rate (In Rs.)	Basic Amount (In Rs.)
	formation as per designed profile. The rate shall not include cutting of trees with girth above 30 CM, which shall be paid separately. Note:1.Rock spoils such as stones, boulders, pebbles, gravels, etc available from excavation, if are found suitable for use in works as per required specifications even after modifications etc., can be used free of cost but the legally payable royalty and taxes are to be paid by the contractor to the concerned authorities.2. Rain cuts, slips and washings in the cutting and side drains will have to be cleared/rectified manually/mechanically and no extra cost will be payable.3. Contractor has to arrange suitable land for disposal/stacked of unusable excavated material from cutting at his own cost.				
a)	Soil excluding rock	cum	190430.18	123.10	2,34,41,955.16
	Total Schedule (A)				3,40,62,415.16
	SCHEDULE (B): Bridge Work (Other than steel items)				
1	Earth work in excavation in foundation of bridges/structures by mechanical means (hydraulic excavation) to desired profile including ramming of bottom,backfilling, compaction of back fill,getting out excavated usable surplus materials and utilise it for formation in filling (as per Item 1(b) of Schedule-A) and disposal of surplus unsuitable soil as per directions of the Engineer in charge. The rate inclusive of all labour, material required, manual work for achieving desired profile, wet excavation, shoring, strutting, trenches and leading the surplus unsuitable soil to any other place as directed by Engineer incharge with all lead, lift, Ascent,descent,loading,un-loading,tools & plant and removing slush, making protection bunds for diverting water wherever necessary, pumping out/balling out water with contractor's pump or by any other means complete as required. Note: 1.Rock spoils such as stones, boulders, pebbles, gravels,etc available from excavation, if are found suitable for use in works as per required specifications even after modifications etc. can be used free of cost but the legally payable royalty and taxes are to be paid by the contractor to the concerned authorities. 2. Rain cuts, slips and washings in the cutting and side drains will have to be cleared/rectified manually/mechanically and no extra cost will be payable. 3. Contractor has to arrange suitable land for disposal/stacked of unusable excavated material from cutting at his own cost.				
a)	Soil excluding rock	cum	56793.06	231.96	1,31,73,718.20

S No	Description of item	Unit	Quantity	Basic Rate (In Rs.)	Basic Amount (In Rs.)
b)	All type of Rock	cum	12062.66	245.34	29,59,453.00
2	Providing and laying of Levelling Course (P.C.C M-15) cement concrete in foundation and flooring using well graded stone aggregate of 20 MM normal size, Corrective course of flooring etc with all required Labour and material including cement, royalty, taxes, leads, lifts, ascent/descent, loading, unloading, shuttering, shoring, Strutting, curing, pumpingout/balling out water from foundations where required, fuel electricity etc as a complete job as per Direction of Engineer incharge..	cum	5666.26	4425.20	2,50,74,333.75
3	Providing and laying Design mix concrete M20 in toe wall, drain, retaining wall wing walls, return wall of Box, RUB, Abutment etc. using well graded stone aggregate of 20MM nominal size as per direction of Engineer- in-Charge. The rate is inclusive of cement,all labour and other required material, royalty taxes, leads, lifts, Ascent/descent, loading, un-loading, centring and shuttering, shoring, strutting, curing pumping out/balling out water where required, fuel, electricity etc as a complete job as required .(Rate Excluding steel reinforcement)	cum	25951.51	4654.60	12,07,93,898.45
5	Providing and laying Design mix control concrete M30/M35 in cast-in-situ RCC works in foundation of bridges, pile cap, approach slab, bottom slab of RCC boxes, foundation of retaining walls/wing walls and other miscellaneous works, etc using well graded stone aggregate of 20 MM nominal size as per direction of Engineer incharge. The rate is inclusive of cement,all labour and other required material, royalty taxes, leads, lifts, Ascent/descent, loading, un-loading, centring and shuttering, shoring, strutting, curing pumping out/balling out water where required, fuel, electricity etc as a complete job as required (Rate Excluding steel reinforcement)	cum	14653.03	5114.45	7,49,42,189.28
6	Providing and laying Design mix control concrete M35/M40 in cast-in-situ RCC works in substructure, pier, superstructure, abutment, pier cap, jacketing, dirt wall, return wall, wing wall, retaining wall, foot path slab, bridge deck, ballast retainers, RCC railing, inspection platform, pedestal,RCC boxes excluding bottom slab and other miscellaneous works etc using well graded stone aggregate of 20 MM nominal size as per direction of Engineer incharge. The rate is inclusive of cement,all labour and other required material, royalty taxes, leads, lifts, Ascent/descent, loading, un-loading, centring and shuttering,shoring, strutting, curing pumping out/balling out water where required, fuel, electricity etc as a complete job as required. Rate Excluding steel reinforcement)	cum	3416.91	5279.53	1,80,39,678.85

S No	Description of item	Unit	Quantity	Basic Rate (In Rs.)	Basic Amount (In Rs.)
7	Applying two coats of coal tar or bitumen conforming to IS 3117- 1965 cm the top and sides of RCC box/slabs @ 1.70 kgs/sqm after cleaning the surface with all labour, materials complete job as directed by the engineer.	SQM	21826.89	140.01	30,55,982.87
8	Providing and laying boulder backing behind abutment, wing wall, boxes, return wall, etc. with all leads, lifts, Ascent/descents, labours, material, tools & plants royalty/taxes, octroi etc all as a complete job as per drawing & direction of Engineer in charge. The boulder backing shall be as per IRS Bridge & Sub-Structure Code/ IRC 78/ relevant ROSO guidelines and as per direction of Engineer in Charge.	SQM	7882.16	1338.45	1,05,49,877.05
9	Providing and laying filter media as per RDSO specification underneath pitching in slopes completed as per drawing and technical specification with all leads, lifts, Ascent/descents labours, material, tools & plants royalty/ taxes, octroi etc all as a complete job as per direction of Engineer Incharge.	cum	7404.73	3115.94	2,30,72,694.40
10	Providing and laying backfill material behind abutments, wing walls, return walls below stone pitching, etc with all leads, lifts, ascents/ descents, labours, material tools & plants royalty/ taxes, octroi etc all as a complete job. The back fill material shall be as per IRS Bridge & Sub-Structure Code/IRC 78,/relevant RDSO guidelines and as per direction of Engineer in Charge.	cum	120080.92	542.61	6,51,57,108.00
11	Providing and laying pitching with stone boulders weighing not less than 35 kg each with the voids filled with spalls on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment etc. complete as per drawing and technical specifications (filter media to be paid separately under the relevant item)	cum	503.96	1038.85	5,23,538.85
12	Providing and laying pitching with stone boulders weighing not less than 35 Kg each with the voids filled with cement sand mortar 1 :4 on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment etc with all leads, lifts, labours. material. tools & plants, Ascent/descents. Royalty/taxes, octroi etc complete job as per drawing and as directed by Engineer incharge. (Filter media to be paid separately under the relevant item).(Rate includes cost of cement.	cum	6266.73	1529.50	95,84,963.54
13	Supply and filling of coarse sand in foundations for boxes and in case of loose slush is encountered at site of Foundation and before laying the filter media with. co1Jtractors material and labour including its compaction and watering with all lead liJt,taxes; royalty etc. Complete in all respect as per instruction of Engineer-in-charge.	CUM	2195.82	565.22	12,41,121.38

S No	Description of item	Unit	Quantity	Basic Rate (In Rs.)	Basic Amount (In Rs.)
14	Providing and fixing in position of standard preformed sealed and slab type or strip seal elastomeric type expansion joints for Railway bridge or Road Over Bridges as per approved drawings and latest MOST/IRC specifications. The rates are inclusive of supplying, fixing with contractor's own materials, e.g. inserts, bolts, socket tubes, Neoprene sheet/cap etc., equipments, machineries, labour, all taxes, royalty, all lead & lifts, transport, testing, surface preparations, complete. 40 mm Expansion Joint	Mtr.	17.40	6914.25	1,20,307.95
15	Providing and fixing of 80/100mm dia PVC pipe for weep holes in abutment, wing walls, return walls, face wall, retaining wall etc at suitable intervals with all leads, lifts, Ascent/descents, ascents etc with contractor' labours, material tools & plants as per drawing and as per drawing and as directed by Engineer. The weep holes shall be measured in running meter. The rate shall be inclusive of cleaning of weep holes.	meter	7801.73	142.16	11,09,093.94
16	Providing and laying of 1200mm dia meter Non Pressure NP4 Class RCC Pipe With Collars Jointing With Cement and Mortar Including Testing of Joint, But Excluding Earth Work With All Labour And Material as a Completed Job, Cement For Mortar Will Be Paid Separately Pipe of 600 mm dia and above will be laid using 112 crane/hvdr	Meter	21.19	6466.75	1,37,030.43
	Total Schedule (B)				36,95,34,989.94
	SCHEDULE (C): Steel items				
1	Supply TMT Fe500 reinforcement steel conforming to IS: 1786-2008 including decoiling, straightening, cutting, bending, hooking as per procedure specified in IS 2502, placing in position, binding with 1MM dia. G.I. binding wire. Note: Reinforcement, shall be measured in length for different diameters used in the works and then paid as per standard weights as per IS 1732. Wastages, overlaps, coupling, welded joints, spacebars, chairs and binding wire shall not be measured and cost of these items shall be deemed to be included in the rates.	MT	2113.28	65491.31	13,84,01,475.60
	Total Schedule (C)				13,84,01,475.60
	SCHEDULE (D): Road Works				
1	Construction of sub-grade with Material Obtained from Borrow Pits/Borrow Area (Construction of sub-grade with approved material/selected soil having C.B.R.>8 (unless specified otherwise in the contract) obtained from borrow pits with all lifts and leads, transporting to site, spreading grading to required slope and compacting to meet requirement of table 300-2 as a complete job.the rate includes Royalty, octroi, taxes etc, labour	Cum	38295.52	288.37	1,10,43,279.10

S No	Description of item	Unit	Quantity	Basic Rate (In Rs.)	Basic Amount (In Rs.)
	machine & Plants, handling / unhandling leads and lifts etc all.				
2	Granular Sub-base as per Table:- 400-1 Construction of granular sub-base by providing graded Material, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface watering, rolling and compacting with vibratory power roller at OMC to achieve the desired density, complete as per clause 401 as per MORTH specifications.				
a	Grading-IV Material	Cum	13751.20	1,671.15	2,29,80,317.88
3	Wet Mix Macadam (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per clause 406 as per MORTH specifications.	Cum	13883.32	1,643.64	2,28,19,180.08
4	Prime coat (Providing and applying primer coat with oil based bitumen emulsion (SS-I , grade confirming to IS:8887) on prepared surface of granular Base including clearing of road surface and spraying primer using mechanical means as per clause 502 as per MORTH specifications.				
a	(i) on WBM/WMM surface @0.85 Kg/sqm.	Sqm	24030.00	70.65	16,97,719.50
5	Dense Bituminous Macadam (Providing and laying dense bituminous macadam with minimum 40-60 T PH capacity HMP using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5% by weight of total mix of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No.505 complete in all respects as per MORTH specifications.				
a	for Grading-II(26.5 mm nominal size bitumen content 4.50%	Cum	1965.66	8,995.10	1,76,81,308.27
6	Tack coat Providing and applying tack coat with bitumen emulsion (RS-I, grade confirming to IS:8887) using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom and as per clause 503 as per MORTH specifications. (i) Bituminous surface @ 0.25 kg /Sqm	Sqm	45279.93	16.56	7,49,835.64

S No	Description of item	Unit	Quantity	Basic Rate (In Rs.)	Basic Amount (In Rs.)
7	Bituminous Concrete (Providing and laying bituminous concrete with minimum 40-60 TPH capacity hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder @ 5.0 to 6.0% by weight of total mix of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 507 complete in all respects				
a	for Grading II (13.2 mm nominal size) with bitumen 6.0 %	Cum	880.47	11,141.19	98,09,483.56
	Total Schedule (D)				8,67,81,124.03
	SCHEDULE (E): Station Buildings, Quarters, Platform Works (CIVIL)				
1	Earthwork in filling in. embankment, guide bunds, around buried type abutments, bridge gaps, trolley refuges, rail bunds if provided, platforms etc. with earth excavated from outside railway boundary entirely arranged by the contractor at his own cost as o	CUM	14340.75	223.83	32,09,890.07
	Total Schedule (E)				32,09,890.07
	SCHEDULE (F): Roofing Works				
1	10.2 Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	158741.19	86.31	1,37,00,952.11
2	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. 10.16.1 Hot finished welded type tubes	Kg	507499.56	135.93	6,89,84,415.19
3	Providing corrugated G.S. sheet roofing including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. 12.1.3- 0.63 mm thick with zinc coating not less than 275 gm/ m ²	Sqm	9744.00	925.00	90,13,200.00
4	Supplying and Fixing Of GI Bolt 8 mm dia 6,GI Flat Washer And GI NUT	Kg	34170.00	150.00	51,25,500.00
	Total Schedule (F)				9,68,24,067.30

S No.	Item Description	Unit	Quantity	Escalation on Basic Rate	Departmental Basic Amount (Rs.)
	SCHEDULE (G) : Other items of work not covered by above schedules (SECR-USSOR-2021)				
1	Any item of SECR-USSOR-2021 not covered by any other items of above Schedules - but required to be executed for successful completion of the work as deemed necessary by the Engineer.	LS (in Rs)	353993.48	3.84%	3,67,58,682.96
	Total of Schedule (G)				3,67,58,682.96