

दी ब्रेथवेट बर्न एंड जेसप कंस्ट्रक्शन कंपनी लिमिटेड  
**The Braithwaite Burn And Jessop Construction Company Limited**  
 (भारत सरकार का एक उद्यम) / (A Government of India Enterprise)

NIT No. eNIT/ROB/CIVIL/686/R1/12-2024

Date: November 6, 2024

Registered Office: 27, Rajendra Nath Mukherjee Road,  
 Kolkata – 700 001, West Bengal.  
 Phone: (033) 2248 5841-44 Fax: 033-2210 3961  
 Email: [info.bbjconst@bbjconst.com](mailto:info.bbjconst@bbjconst.com); Website: [www.bbjconst.com](http://www.bbjconst.com);

<b>e-Tender No.</b>	<b>eNIT/ROB/CIVIL/686/R1/12-2024</b>	<b>Date:</b>	<b>06 Nov 2024</b>
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**NOTICE INVITING e-TENDER.**

Sealed Tenders under a **two-bid system** (i.e., "Techno-Commercial & Price Part") are invited from eligible bidders for carrying out construction of Road Over Bridge (ROB) and other miscellaneous works as detailed in "**Scope of Work**"/ "**BOQ**", hereunder:

01	NAME OF WORK	CIVIL WORKS FOR CONSTRUCTION OF <b>ROAD OVER BRIDGE (ROB)</b> (END-TO-END INCLUDING APPROACH) IN LIEU OF LEVEL CROSSING NO. 2 AT KM 1296/11-12 AT MAHOBA-KHAJURAHO SECTION OF NORTH CENTRAL RAILWAY.
02	SCOPE OF WORK	AS PER NIT/ BOQ
03	COST PUT TO TENDER/ BASIC COST	<b>RS.21,42,34,825.00 including GST.</b>
04	COMPLETION PERIOD	<b>09 (NINE) MONTHS</b> FOR ENTIRE WORK FROM THE DATE OF LETTER OF ACCEPTANCE (LOA) OR WORK ORDER, WHICHEVER IS EARLIER.  TIME OF COMPLETION WILL BE REDUCED SUITABLY IN CASE THE JOB IS DISTRIBUTED BETWEEN TWO OR MORE SUBCONTRACTORS
05	COST OF TENDER DOCUMENT (NON-REFUNDABLE)	<b>RS.10,000/- (RUPEES TEN THOUSAND ONLY)</b> BY NEFT/ RTGS/ DEMAND DRAFT/ PAY ORDER/ BANKER'S CHEQUE IN FAVOUR OF "THE BRAITHWAITE BURN AND JESSOP CONSTRUCTION COMPANY LIMITED" PAYABLE AT "KOLKATA".  <b>TENDER DOCUMENTS WITHOUT THE TENDER FEE SHALL BE REJECTED.</b>  EXEMPTION FOR MICRO AND SMALL ENTERPRISES (MSE) FOR SUBMISSION OF "TENDER FEE" IS " <b>NOT APPLICABLE</b> " SINCE WORKS CONTRACT ARE EXCLUDED FROM THE PURVIEW OF PUBLIC PROCUREMENT POLICY FOR MSE ORDER, 2012 AND ITS LATEST AMENDMENT(S).
06	EARNEST MONEY	<b>RS.20,00,000/- (RUPEES TWENTY LAKH ONLY)</b> BY NEFT/ RTGS/ DEMAND DRAFT/ PAY ORDER/ BANKER'S CHEQUE IN FAVOUR OF "THE BRAITHWAITE BURN AND JESSOP CONSTRUCTION COMPANY LIMITED" PAYABLE AT "KOLKATA".  <b>TENDER DOCUMENTS WITHOUT EMD SHALL STRAIGHTWAY BE REJECTED.</b>  FOR UNSUCCESSFUL BIDDERS, EMD WILL BE REFUNDED AFTER THE FINALIZATION OF THE ORDER, WITHOUT ANY INTEREST.

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		<p>FOR SUCCESSFUL BIDDER, THE ABOVE EMD AMOUNT WILL BE CONVERTED INTO A SECURITY DEPOSIT AND WILL BE RETAINED BY BBJ TILL SUCCESSFUL COMPLETION OF THE DEFECT LIABILITY PERIOD.</p> <p>EXEMPTION FOR MICRO AND SMALL ENTERPRISES (MSE) FOR SUBMISSION OF "EARNEST MONEY" IS "<b>NOT APPLICABLE</b>" SINCE WORKS CONTRACT ARE EXCLUDED FROM THE PURVIEW OF PUBLIC PROCUREMENT POLICY FOR MSE ORDER, 2012 AND ITS LATEST AMENDMENT(S).</p>	
07	MODE OF SUBMISSION	<p>ONLINE THROUGH THE E-PROCUREMENT SYSTEM OF CPPP (CENTRAL PUBLIC PROCUREMENT PORTAL).</p> <p><b>A HARD COPY OF THE BID, AS UPLOADED, (TECHNO-COMMERCIAL) SHALL HAVE TO BE SUBMITTED TO BBJ-HO BEFORE OPENING OF TECHNICAL BID.</b></p> <p>TO BBJ'S OFFICE BEFORE OPENING OF TECHNICAL BID.</p> <p>CORRIGENDUM, IF ANY, WILL BE PUBLISHED ON CPPP AND BBJ'S WEBSITE.</p>	
08	DATE & TIME SCHEDULE:	Date of Publishing NIT & Tender Documents	<b>06/11/2024</b>
		Document download Start Date	<b>06/11/2024 - 10:00 HRS</b>
		Start Date of uploading of bid document	<b>14/11/2024 - 10:00 HRS</b>
		End Date for uploading of bid document	<b>19/11/2024 - 15:00 HRS</b>
		Date of opening of Technical Bid	<b>20/11/2024 - 15:00 HRS</b>
		Date of opening of Financial Bid	<b>To be notified later</b>

(पार्थ नंदी / PARTHA NANDY)  
 मुख्य प्रबंधक (परियोजना) / CHIEF MANAGER (PROJECT)

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**INSTRUCTION TO BIDDERS**

3. **REGISTRATION OF CONTRACTOR**

Any bidder willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement system, through logging on to <https://eprocure.gov.in/eprocure/app>.

4. **DIGITAL SIGNATURE CERTIFICATE (DSC)**

Each bidder is required to obtain a Class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders, from the approved service provider of the National Information Centre (NIC) on payment of the requisite amount. Details are available at the web Site (<https://eprocure.gov.in/eprocure/app>) in Clause 2 of Guideline to the bidder. DSC is given as a USB e-Token.

5. **SUBMISSION OF TENDER: ONLINE MODE IN CPPP'S PORTAL**

Bids are to be submitted online through the e-Procurement system of **Central Public Procurement Portal (CPPP)** (<https://eprocure.gov.in/eprocure/app>). Hardcopy of the uploaded/ submitted bid shall have to be submitted to our office physically along with the EMD, Tender cost & all other documents. Tender document to be digitally signed with Company's seal by the bidders. The rates in the appropriate space in the Bill of Quantity should be properly filled in.

6. **LANGUAGE**

Bids and all accompanying documents shall be in English. In case any accompanying documents are in another language, they shall be accompanied by an English translation. The English version shall prevail in the matter of interpretation.

7. **SUBMISSION OF BID**

- a. All the pages of the Tender document are to be signed with Company's seal by the bidders. The rates in the appropriate space in the **BILL OF QUANTITY** of the tender should be properly filled.
- b. The Tender shall be signed by the person legally authorized to enter into a commitment on behalf of the tenderer. Tenders are to be submitted in two parts as per following:
- c. Scanned copy of the EMD, Cost of Tender and other documents, as stated below, are to be uploaded in CPP's portal and a hard copy of the same to be sent addressed to CM(P) at BBJ's Head office in a sealed envelope, super scribing "TENDER NOTICE NO." & "FEE PART":
  - i) **Earnest Money Deposit (EMD) of Rs.20,00,000/-** (Rupees twenty lakh only) in the form of NEFT/ RTGS/ Demand Draft/ Pay Order from any Nationalised or Schedule Bank drew in favour of "The Braithwaite Burn and Jessop Construction Company Limited" payable at "Kolkata". In the case of a successful bidder, this EMD will be converted to Security Deposit and will be retained by BBJ till the completion of the entire job, without any interest.
  - ii) **Cost of Tender (Non-Refundable) of Rs.10,000/-** (Rupees ten thousand five hundred only) in the form of NEFT/ RTGS/ Demand Draft/ Pay Order from any Nationalised or schedule Bank drawn in favour of "The Braithwaite Burn and Jessop Construction Company Limited" payable at "Kolkata".

**Bank Details for NEFT/ RTGS:**

Name of Beneficiary: THE BRAITHWAITE BURN AND JESSOP CONSTRUCTION COMPANY LIMITED.  
Bank Name: STATE BANK OF INDIA

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Branch: DALHOUSIE SQUARE (CALCUTTA)  
Bank Address: 2, B.B.D. BAGH (EAST), KOLKATA – 700001 (W.B.).  
Bank Account No.: 11175160292  
Bank Account Type: Current  
IFS Code: SBIN0001401

**PS:** In the case of EMD & Tender Fee submitted through NEFT/ RTGS, necessary documents need to be uploaded in CPP Portal and submitted along with the bid.

d. **TECHNO-COMMERCIAL PART:**

Scanned copy of the EMD, Cost of Tender and other documents, as stated below, are to be uploaded in CPPP's portal and a hard copy of the same to be addressed to the Chief Manager (Project) at BBJ's Head office in a sealed envelope, super scribing "TENDER NOTICE NO." and "TECHNO-COMMERCIAL PART":

- i) Signed copies of documents as per Eligibility Criteria.
- ii) Signed copy of **PAN, Goods & Service Tax (GST) registration certificates.**
- iii) Signed copy of **Provident Fund & Employees State Insurance (ESI) Registration Certificate.**
- iv) Company's audited Balance Sheet & Profit & Loss Account for last 3 (three) financial years ending as on 31<sup>st</sup> March 2024.
- v) Downloaded Tender document (without quoting any price in Techno-Commercial Bid) duly signed with an official stamp on each page.
- vi) **Solvency Certificate** (as per attached format) for at least **40%** of the advertised value of the tender.
- vii) Any Bidder falling under Micro and Small Enterprises (MSEs) category, shall furnish the following details & submit documentary evidence/ Govt. Certificate etc. in support of the same along with their techno-commercial offer:

Type under MSE	SC/ST Owned	Women Owned	Others (excluding SC/ ST & Women Owned)
Micro			
Small			

Note: - If the bidder does not furnish the above, the offer shall be processed construing that the bidder is not falling under MSE category.

e. **PRICE PART:**

Properly filled up **BILL OF QUANTITIES (BOQ)** is to be uploaded to CPPP's website. Price bid of only those bidders will be opened whose Techno-commercial offers are found to be qualified and acceptable to BBJ.

- f. The above 'TECHNO-COMMERCIAL PART' shall have to be forwarded to Chief Manager (Project) at BBJ's Head office.

8. **INTEGRITY PACT:**

The Bidder/ Contractor is required to enter into an Integrity Pact with BBJ, in the Format at Annexure-I. The Integrity Pact enclosed at Annexure-I will be signed by BBJ for and on behalf of Employer as its Agent / Power of Attorney Holder at the time of execution of Agreement with the successful Bidder. While submitting the Bid, the Integrity Pact shall be signed by the duly authorized signatory of the Bidder. In case of failure to submit the Integrity Pact duly signed and witnessed, along with the Bid, the Bid is likely to be rejected.

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In case of any contradiction between the Terms and Conditions of the Bid Document and the Integrity Pact, the former will prevail. For monitoring of the Integrity Pact, BBJ has appointed the following eminent personality as Independent External Monitor(s) (IEM):

<p><b>Shri Sunil Pandey</b> <b>IFoS (Retd.)</b> 249, Phase-I, Vasant Vihar, Dehradun – 248001. Uttarakhand Email: pandey.sunil90@yahoo.co.in</p>	<p><b>Dr. Ravindra Kumar Srivastava</b> <b>IAS (Retd.)</b> A6, Anand Niketan, New Delhi - 110021 Email: srivastava.rks@gmail.com</p>
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9. All costs and expenses incidental to the preparation of the tender, discussion, conference, pre-award discussion with BBJ shall be to the account of the bidder and BBJ shall bear no liability whatsoever on such cost expenses.
10. **Works Contract are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012.**
11. **No deviation to the tender conditions shall be accepted. Conditional tenders shall not be accepted, and no additional clause shall be entertained. All rights reserved upon BBJ in this regard.**
12. The award of the order or rejection of the Tenderer's offer and/or cancellation of the tender will be made at the absolute discretion of BBJ. BBJ reserves the right to cancel or accept or reject any or all tender(s), whether lowest or otherwise, without assigning any reason(s) whatsoever thereof. A tenderer, whose tender is not accepted shall not be entitled to claim any cost, charges or expenses incidental to or incurred by him through or in connection with the preparation and submission of the Tender/ Offer to BBJ.
13. **CURRENCIES OF BID AND PAYMENT**  
The tenderer shall submit his price bid/ offer in Indian Rupees and payment under this contract will be made in Indian Rupees.
14. **Firm price order:** Price shall remain firm till completion of work as per order including modification thereof and no claim for variation in quantities, labour & materials prices etc. will be entertained. **Price Variation Clause (PVC) shall not be applicable.**
15. All duties, taxes, fees and other levies except GST payable by the successful bidder under the contract or any other cause shall be included in the quoted prices.
16. **PREFERENCE TO MAKE IN INDIA:**  
The provisions of revised 'Public Procurement (Preference to Make in India) Order 2017' issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry vide letter no. P45021/2/2017-PP (BE-II) dated 16th September 2020, as amended from time to time up to Bid Due Date, shall be applicable to the bidding process and award of the contract shall be done accordingly.
- Please enter the percentage of local content in the material being offered. Please enter 0 for fully imported items, and 100 for fully indigenous items. The definition and calculation of local content shall be in accordance with the Make in India policy as incorporated in the tender conditions.
17. **PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA):**  
For this procurement, the local content to categorize a supplier as a Class I local supplier/ Class II local Supplier/Non-Local Supplier and purchase preferences to Class I local supplier,

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is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 4th June 2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.

**18. COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (XI) OF GFR 2017**

I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).

II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

III. "Bidder 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 where any member of the consortium or joint venture falls under any of the above.

IV. The beneficial owner for the purpose of (III) above will be as under:

19. 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.

20. 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.

21. 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 the such association or body of individuals.

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22. Where no natural person is identified under (19) or (20) or (21) above, the beneficial owner is the relevant natural person who holds the position of senior managing official.
23. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
24. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

Note:

- i. The bidder shall provide undertaking for their compliance to this Clause, in the format provided in Annexure-A.
- ii. Registration of the bidder with Competent Authority should be valid at the time of submission of bids and at the time of acceptance of the bids.

25. **VALIDITY OF TENDER**

**90 (ninety) days** from the date of opening of tender or for a further period if mutually accepted. BBJ reserves the right to ask for the extension of validity if any.

26. **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) Work order
- 2) Letter of Award (LOA)
- 3) Schedule of Items, Rates & Quantities
- 4) Special Conditions of the Contract (SCC)
- 5) Technical Specifications (TS)
- 6) Scope of Work (SOW)
- 7) Drawings
- 8) Relevant Codes & Standards
- 9) Notice Inviting Tender
- 10) Instructions to the Bidders (IB)
- 11) General Conditions of Contract
- 12) Any other documents forming part of the Contract.

27. **Bidder should submit the documents in Hard Copy on or before as stipulated in "DATE & TIME SCHEDULE" to the address as mentioned above.**

**SCOPE OF WORKS**

**NAME OF WORK: MAHOBA-KHAJURAHO SECTION: CONSTRUCTION OF ROB (END-TO-END INCLUDING APPROACHES) IN LIEU OF LEVEL CROSSING NO. 2 AT KM 1296/11-12.**

The indicative scope described hereunder is only indicative and shall be deemed to be inclusive of all items to be executed for successful completion of the work as per Specifications and Drawings.

Agency to read understands and considers all the conditions, special & additional special conditions, instructions, specifications, work scope etc. before quoting rates.

1. **INDICATIVE SCOPE OF WORK: (IN GENERAL, BUT MAY NOT BE LIMITED TO):**  
The job to be carried out in accordance with the BOQ and as advised by the site-in-charge and also consists of the followings:
  - 1.1 Preparation of all detailed structural drawings and arranging approval of competent authority all complete. It also includes preparation of Quality Assurance Plan (QAP) for sub-structure, foundation, super-structure including bearings.
  - 1.2 Preparation of all detailed structural drawings and arranging approval of competent authority all complete. It also includes preparation of Quality Assurance Plan (QAP) for sub-structure, foundation, super-structure including bearings.
  - 1.3 Construction of RCC open foundation / pile foundation & pile cap as per approved drawings. Construction of RCC abutments and piers, for Composite Plate Girders /Bow String Girders and for PSC/RCC Girders as per approved drawings.
  - 1.4 Preparation of Temporary Arrangement Drawings (TAD), Launching Scheme and approval thereof for approach portion.
  - 1.5 Construction of Post tensioned Pre-stressed (PSC) Girder and erection over piers on approach portion.
  - 1.6 Construction of approaches which includes constructing of RE wall, RCC slab, piers, crash barrier, earthwork in bank, providing bituminous road & all works related to constructing approaches complete as per drawing.
  - 1.7 Providing and fixing in position standard fixed type POT bearing, free sliding type POT cum PTFE bearings/ Elastomeric bearings as per approved drawing
  - 1.8 Providing and laying cement concrete wearing coat, drainage spouts, footpath, etc.
  - 1.9 Providing and fixing RCC crash barrier, railing and electric lighting poles.
  - 1.10 Providing and fixing in position single strip seal elastomeric type expansion joints.
  - 1.11 Construction of Inspection platform, railing, ladders, etc.
  - 1.12 Construction of staircases.
  - 1.13 Providing and fixing of protection screens.
  - 1.14 Making any temporary work for the purpose or arranging any temporary land for the working or stacking of materials of contractor.



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- 1.15 Supplying vehicles, Site Office with requisite facilities, technical personnel, Necessary Equipment as mentioned in Tender documents.
- 1.16 All time deployment of survey team till completion of project.
- 1.17 1.1.16 Construction of diversion Road.

**Note:**

- a) The RDSO/ approved drawing series may be changed by BBJ. In that case, the agency shall be bound to carry out the work as per the said changed RDSO/ approved drawing series without any other claim to BBJ on account of such changes.
- b) Target production indicated above may be modified by BBJ as per the requirement and no claim will be entertained on this account.
- c) Relevant technical Specification/ Special condition as mentioned in Railway's tender no. Br-JHS-2024-04 dt. 30/04/2024 as well as Indian Railway Standard General Conditions of Contract, April 2022 i.e. GCC April 2022 updated up to the latest correction slips ACS No.1 to ACS No.6 issued by Railway Board will form integral part of this contract and the agency has to adhere to that. All facilities as provided in Railway's above tender have to be provided to the Railway free of cost. Agency, if they so desire can see this tender at our R.O. at 27 R.N Mukherjee Road, Kolkata-700001 during all working day.

**2. INSPECTION OF DRAWINGS BEFORE SUBMISSION OF TENDER:**

The drawing is not attached to this tender document. Interested bidders may visit BBJ's Drawing Office at 27, R. N. Mukherjee Road, Kolkata-700 001 on any working day i.e., Monday to Friday & Saturday (only 1st, 3rd & 5th instant) from 10 A.M. to 1 P.M. and 2 P.M. to 5 P.M.) to study the drawings, till the end date of uploading of the online bid.

BBJ reserves the right to alter/ modify the drawing/ specification to suit their condition. If due to change in drawing/ specification, there is any increase/ decrease in items/ quantities or both, payment will be made only for actual approved quantity / approved material list tonnage certified by N.C. Railway and/or their authorized Agent. However, the payment will be restricted to the actual approved quantity / approved material list tonnage as will be certified and paid to BBJ by N.C. Railway.

**3. PROGRESS OF WORKS:**

The Agency shall submit a programme of work in the form of a Bar Chart of all the activities in consistence with milestone target envisaged below. In case this bar chart requires to be modified, the Engineer and the contractor shall agree upon a time and progress chart. The chart shall be prepared in direct relation to the time stated as 09 months for the completion of the works as the milestone targets specified below of these special conditions. It shall indicate the forecast of the dates of commencement and completion of various activities of the work and may be amended as necessary by agreements between the Engineer and the contractor within the limitation of 09 months as overall completion period.

**4. ACHIEVEMENT OF MILESTONE PROGRESS:**

In order to ensure progress during the execution of the work the contractor will be expected to achieve the following milestone targets ahead of dates mentioned against each. Failure to achieve accomplished milestone targets within allocated timeframe, save for reason accepted as laid by the Engineer shall create and constitute the ground for failure on the part of contractor for maintaining progress of the work as per agreed programme.

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<b>Milestone Targets</b>	<b>Time allocated within which to achieve completion in total 09 (Nine) months' Time</b>
(a) Physical commencement of work	D + 10 days
(b) Mobilization of equipment's	D + 20 days
(c) Full mobilization of plant, machinery, men and material	D + 30 days
(d) Construction of diversion of Road	D + 60 days
(e) Construction of foundation	D + 120 days
(f) Construction of substructure (Abutments & Piers)	D+ 60 to D+150 days
(g) Construction of Pier Cap	D + 90 to D + 180 days
(h) Fabrication and launching of steel superstructure	D + 60 to D+ 210 days
(i) Construction of deck slab including foot path, crash barrier, RE wall, RCC slab/Girder, railing, etc.	D +180 to D + 210 days
(j) Earthwork in embankment, Asphalted Road, rolling etc. complete	D +210 to D + 270days
(k) Completion of providing & fixing of protection screens, cables, testing, etc.	D +210 to D + 270days
(l) Providing and fixing Road sign boards, Lighting arrangements, painting etc. final Finishing and Clearance / tidying up of site completely.	D +210 to D + 270days

**Note:**

"D" is the date of approval of drawing by Railway to the Contactor / Agency and it is planned to be completed in 30 days.

Work is to be carried out in a way to cause minimum inconvenience to passengers on platform/ L-xings and taking all safety measures against any infringement with running trains or passengers.

After successful inspection of the fabricated components appropriate surface treatment as specified by BBJ shall be rendered & components transported to the site.

**5. WELDING PROCEDURE:**

5.1 All the welding shall be done by Submerged Arc welding (SAW) process either fully automatic or semi-automatic. Manual Metal Arc Welding (MMAW) shall be done only for welds of very short run of minor importance or at inaccessible locations with prior permission of Railway/ BBJ.

Provision of IS-823-1964 and IS-4353-1967, shall generally be followed, as applicable, for welding procedure, details of workmanship, correction of weld faults, peeling, painting etc. In case, any of the provisions contained therein contravene the provisions made in Railway Welded Bridge Code, the latter shall be followed. Welding shall be done by RDSO approved welders only.

5.2 No welding work shall be given to an Agency / Contractor who does not produce satisfactory evidence of his ability to handle the work in a competent manner. The Agency / Contractor shall also prove the ability of the Operator/Welders employed by him to produce welds of

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the required strength. The Agency / Contractor shall employ a competent welding Supervisor to ensure that quality of materials and the standard of workmanship comply with the requirements laid down in the Railway's welded bridge code and relevant IR B&S standard codes. Agency / Contractor maintains all the record of welding as per BS 110(R).

- 5.3 The sizes and length of welds shall be not less than those specified in the drawings, nor shall they be substantially in excess of the requirements without prior approval of the Engineer of N.C. Railway / BBJ. The location of welds shall not be changed without prior approval of the Engineer. Welds shall preferably be made in flat position.
- 5.4 The preparation of fusion faces, angle of preparation root radius and root face shall be as specified in IS: 823-1964 and IS: 4353-1967. Where the gap between the root faces of a butt joint is excessive, the gap shall not be bridged since this procedure often leads to cracking. The fusion faces of the joint shall be build-up with weld metal to give the appropriate gap before the weld proper is commenced.
- 5.5 Splices in each component part of a solid web girder or built-up member shall be made before such component part is welded to other component part of the member. Splicing shall be done at approved location only for making up section of larger length. Two components/ plates to be joined by Butt Welding of Radiographic quality only.
- 5.6 In making welds under conditions of severe external shrinkage restraint, the welding shall be carried out with electrodes having type 6 covering as per IRS-M-28.
- 5.7 In making butt welded joints in rolled shapes, the sequence and procedure of welding shall be such as to take into account unequal amount of expansion or contraction in elements being welded. The welding in the thinnest element of a section (usually the web in case of beams) shall be done prior to the welding of the thicker elements (usually the flanges in case of beams).
- 5.8 In case of welding using direct current, earthing on the work pieces to be welded shall be connected carefully at more than one location with a view to avoid "Arc Blow" during welding.
- 5.9 The sequence of welding shall be such as to minimize distortion/ deformation. Wherever possible, the members which offer the greatest resistance to compression are welded first.
- 5.10 All slag shall be removed from each run before another run is super-imposed and from the final run. When cold, the final run shall be protected with clean boiled linseed oil and shall not be painted until approved by the Inspector.
- 5.11 In case of welds in structures subjected to dynamic loading, adequate means of identification, either by identification stamp or other records, shall be provided to enable each weld to be traced to the welding operator by whom it was made.
- 5.12 During the entire welding and cooling cycle, the joints shall not be subjected to any external forces or shocks.
6. **SUB-MERGED ARC WELDING:**
  - 6.1 Main section of the components shall be framed only be submerged Arc welding. Neither the depth of fusion nor the maximum width in the cross section of weld metal deposited in each weld pass shall exceed the width of the face of the weld pass.
  - 6.2 All butt welds by the submerged arc process shall be made in the flat and horizontal position. Fillets welds may be made in either flat or horizontal vertical position. The size of the single

pass welds made in the horizontal-vertical position shall not exceed 8 mm.

In addition to the provisions of IS: 4353-1967, the inspector may, where deemed necessary, require a sample joint having the same cross-section as the joint to be used in construction and a length of at least 300mm to be welded with the wire, flux, current, arc voltage and speed of travel that are proposed to be used and a macro etched cross section of the welded joint prepared as a demonstration that the specified requirements will be met, when the welding current, arc voltage and speed of travel are established by a test made in accordance with requirements of this clause, they shall be kept within the following limits of variations-

Welding current ...  $\pm 10\%$

Arc voltage ...  $\pm 7\%$

Speed of travel ...  $\pm 15\%$

6.3 Submerged Arc welding machine for heavy duty bridge girders shall be as per IRS Specification.

**7. EDGE PREPARATION AND SET-UP OF PARTS:**

7.1 Edge preparation shall conform to the relevant drawings and meet the requirement of IRS Welded Bridge Code. Normally all edges to be welded will be mechanically planed before members being subjected to welding.

7.2 After the parts are assembled in position for welding, the inspector shall check for incorrect root gap, improper edge preparation and other features that might affect the quality of welded joint.

**8. INSPECTION AND TESTING OF WELDED JOINTS:**

8.1 Inspection of the welded bridge girders shall be entrusted to RDSO. Cost of such inspection will be borne by Agency.

8.2 The Inspector designated by the purchaser shall ascertain that fabrication by welding is performed in accordance with the requirement of welded Bridge Code and IS-822- code of practice for inspection of welds.

8.3 Contractor shall notify in advance of the start of any welding operation.

8.4 Contractor shall provide free access to the work being done at all reasonable time and facilities shall be provided to the inspecting authority so that during the course of welding, he may be able to inspect any layer of weld metal. The inspecting authority shall be at liberty to reject any material that does not conform to the provision of welded Bridge code and to require any defective welds to be removed and re-welded.

**9. MARKING OF DEFECTIVE WELDS:**

9.1 The marking shall be positive and clear and in accordance with the method of marking followed and understood by the Inspector and shop personnel involved in making the repairs.

9.2 Marking shall be permanent enough to be evident until the repair has been done and inspection completed.

9.3 After the repair has been made, it shall be inspected and properly marked to indicate whether the repair is satisfactory or not.

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**10. EXTENSION PIECES:**

In fusion welds such extension pieces are to be welded which will serve the additional functions of running in/out pieces to ensure the soundness of full length of the weld. Extension pieces will be of the same composition and with same weld preparation as the parent material of the main weld.

**11. RADIOGRAPHIC TEST:**

All Butt welds shall be examined by appropriate Radiographic or any other equally effective method as specified in the drawing or procedure sheet.

**12. DYE PENETRATION TEST:**

Other weld may be examined by Radiographic or any other non-destructive method like dye penetration test, Magnaflux and/or any other method at the discretion of the Inspecting Authority. DP material liquid shall be ISI & RDSO approved firm.

**13. WELDING PARAMETERS:**

Contractor / Agency has to keep a record of welding parameters piece wise, component wise and bridge wise.

**14. MISCELLANEOUS:**

14.1 All material plates, angle etc. shall have straight edge, flat surface and free from twist. The adjacent surface or edge shall be in close contact or at uniform distance throughout.

14.2 The face of compression member shall be machined so that the faces are at right angles to the axis of the member and at the joint when made out will be in close contact throughout.

14.3 Contractors / Agency have to use mechanically controlled torch for flame cutting. All flame cut edges shall be ground properly to remove all burr etc. No drag line, bevel cut shall be permitted.

14.4 Contractors / Agency have to take special care to ensure that ends of all plates and members are in close contact.

14.5 No making up of surface etc. will be allowed without ascertaining its structural adequacy by radiography testing.

14.6 Contractor / Agency shall have to arrange use of hydraulic yoke hammer for riveting wherever possible.

14.7 Only full length of plates/angles/Roller section shall be used & no joints will be allowed in any of the component.

14.8 In the fabrication of girders, necessary arrangements and provision shall be kept for inspection facilities underneath the girder and for carriage of service cables, pipelines etc. as per approved drawing.

**15. INSPECTION AND PROGRESS REPORT**

15.1 Any defects noticed during inspection in the execution of the work shall be rectified or replaced by the contractor at his own cost. The decision of the BBJ/ Railway or its inspecting agency as to the existence of defect, the manner in which the defective work to be rectified or replaced shall be final, conclusive and binding on the contractors. No extra claim, whatsoever, shall be entertained for the cost of such rectification or replacement.

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15.2 The progress of work as well as execution of all works shall be subject to periodic review by the BBJ/ Railway Administration.

15.3 The contractors shall provide all facilities to the BBJ/ Railway's representative to make periodical detailed assessment of the progress of the works. Such information and progress reports as may be called for by the BBJ/ Railway and at such intervals as specified shall also be made available.

16. **SPECIFICATION FOR METALLISING ON BRIDGE GIRDERS**

16.1 **SURFACE PREPARATION:**

The surface shall be thoroughly cleaned and roughened by compressed air blasting or centrifugal blasting with a suitable abrasive materials in accordance with clause 3 of IS-6586. Immediately, before spraying it shall be free from grease, scale, rust, moisture or other foreign matter. It shall be comparable in roughness with a reference surface produced in accordance with Appendix-A of IS: 5909 to Sa 2-1/2 and shall provide an adequate key for the subsequent sprayed metal coating.

16.2 **METAL SPRAYING**

The metal spraying shall be carried out as soon as possible after surface preparation but in any case, within such period that the surface is still completely clean, dry and without visible oxidation. If deterioration in the surface to be coated is observed, by comparison with a freshly prepared metal surface of similar quality which has undergone the same preparation, the preparation treatment should be repeated on the surface to be coated. The wire method shall be used for the purpose of metalizing, the diameter of the wire being 3mm or 5mm. Specified thickness of coating shall be applied in multiple layers and in no case less than 2 passes of the metal spraying unit shall be made over every part of the surface. At least one layer of the coating must be applied within 4 hours of blasting and the surface must be completely coated to the specified thickness within 8 hours of blasting. Aluminium wire shall be RDSO approved vendor only.

- (a) **PURITY OF ALUMINIUM:** The aluminium to be used for spraying shall be 99.5% aluminium conforming to IS:2590.
- (b) **APPEARANCE OF THE COATING:** The surface of the sprayed coating shall be of uniform texture and free from lumps, coarse areas and loosely adherent particles.
- (c) **THICKNESS OF THE COATING:** The nominal thickness of the coating shall be 150 microns. The minimum local thickness will be determined in accordance with procedure given in clause 14.2 below and shall not be less than 110 microns at isolated location.

16.3 **SHOP PAINTING FOR COMPONENTS BEING METALLISED**

Any oil, grease or other contamination should be removed by thorough washing with a suitable thinner until no visible traces exist and the surfaces should be allowed to dry completely before application of paint. The coatings may be applied by brush or spray. If sprayed, pressure type spray guns must be used. One coat of etch primer to IS: 5666 shall be applied first. After 4 to 6 hours of the application of the wash primer one coat of zinc chromet primer to IS: 104-to-45-micron DFT. After hard drying of zinc chromet primer two coat of aluminum paint to IS: 2239 (brushing or spraying as required) shall be applied to a minimum thickness of 20 microns of each coat. All paint shall be Asian, Burger or Narolac, No other brand shall be allowed.

17. **INSPECTION FOR SURFACE COATINGS:**

17.1 Inspection after grit blasting to conform surface finish to Sa 2-1/2 of Appendix 'A' of IS 5909.

17.2 **DETERMINATION OF LOCAL THICKNESS OF PAINT:**

The minimum local thickness of paint shall be determined by the following method:

The equipment used for measurement shall be any magnetic or Electro-magnetic thickness meter that will measure local thickness of a known standard with an accuracy of  $\pm 10$  per cent.

**1. CALIBRATION OF INSTRUMENT:**

Calibrate and check the meter on one of the following standards (as appropriate):

- (i) Applicable to magnetic and Electro-magnetic meters other than the pull-off type). A soft brass shim, free from burrs, in contact with the grit-blasted surface of the base metal prior to its being sprayed. The thickness of the shim shall be measured by micrometre and shall be approximately the same as the thickness of the coating.
- (ii) A sprayed metal coating of uniform known thickness approximately the same as the thickness of the sprayed coating to be tested, applied to a base of similar composition and thickness of the article being sprayed, grit-blasted in accordance with Clause 9.2.1.

**2. PROCEDURE:**

For each measurement of local thickness, make prescribed number of determinations, according to the type of instrument used to get the average value.

With instrument measuring the average thickness over an area of not less than 0.645 cm<sup>2</sup>, the local thickness shall be the result of the one reading.

With instruments having one or more pointed or rounded probes, the local thickness shall be the mean of three readings within a circle of 0.645 cm<sup>2</sup> area.

With meters having two such probes, each reading shall be the average of two determinations with the probes reversed in position.

**3. ELCOMETER:**

Minimum two digital Elcometer will have to be provided by the contractor at his own cost for determination of metalizing / painting thickness shall be available at site always. After completion of work handed over to BBJ/ Railway.

**18. METHOD OF MEASUREMENT**

Measurement done and accepted by Railway representative and recorded in the Measurement Book / Bill will be taken as final measurement for payment of R/A Bill / Final Bill.

**19. REJECTION OF MATERIALS**

Bridge components shall be tested before leaving the manufacturer's premises. Bridge components will also be tested at the site, and they may be rejected any time, if found not suitable or not in accordance with the specifications notwithstanding the results of tests at manufacturer's workshop or elsewhere or test certificates.

**20. CODES AND SPECIFICATIONS**

The materials as well as execution of works shall be conforming to the following specifications and codes of practice (Latest Revision of the Specification / Codes & up to date correction slips to be referred). Firm should quote their rate accordingly.

**20.1 INDIAN RAILWAY STANDARD CODES AND SPECIFICATIONS**

- (i) IRS: Bridge Rules (1982 revised)
- (ii) IRS: Sub-structure code

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- (iii) IRS: Welded Bridge Code for steel bridge girders (2001)
- (iv) IRS: Steel Bridge Code (1962 revised)
- (v) IRS specification: B1- 2008 for Fabrication and erection of steel bridges and locomotive turn tables.
- (vi) IRS specification: B2 : 1979 erection and riveting of steel bridge girders.
- (vii) Indian Railways Schedule of Dimensions for broad gauge.
- (viii) North Central Railway Engineering Department General Conditions of contract (GCC) and instructions to tenderers.
- (ix) North Central Railway Engineering Department Standard Schedule of Rates 2010.
- (x) North Central Railway Engineering Department Standard Specifications for material and works, 2007.
- (xi) IRS specification: M-28 Specifications for electrodes.
- (xii) IRS specification: M-39 Specifications for wire flux for SAW.
- (xiii) IRS specification: M-46-2003
- (xiv) Indian Railways Bridge Manual, 1998
- (xv) Indian Railways P. Way Manual
- (xvi) Indian Railways Works Manual

20.2 **INDIAN STANDARD SPECIFICATION**

1. IS : 2062-1999 Specification for structural steel.
2. IS:812
3. IS : 813-1961 Scheme of symbols for welding.
4. IS : 9595-1980 Manual for metal arc welding.
5. IS : 818-1968 Code of Practice for safety and Health requirements in electric and gas welding operations.
6. IS : 102-1962 Specifications for ready mixed paints red lead.
7. IS : 123-1962 Specifications for ready mixed paints red oxide.
8. IS : 2004-1978 Carbon steel forgings for general engineering purposes.
9. IS : 1852-1979 Rolling and cutting tolerances for hot-rolled steel products.
10. IS : 1148 Rivet bars for structural purposes.
11. IS : 1929-1982 Hot forged steel rivets for hot closing (12 to 36mm diameter).
12. IS : 4353-1967 Recommendations of Sub-merged Arc welding of mild steel and low alloy steel.
13. IS : 1893-1975 design criteria for Earthquake Resistant structure, Indian Standard Institution, New Delhi.
14. IS : 8500- Structural steel- Micro alloyed (Medium and high strength qualities).
15. IS : 1149- High tensile steel rivet bars for structural purposes.
16. IS : 1363 (all 3 parts)- Hexagon head bolts, screws and nuts of product of grade C.
17. IS: 2001- Carbon steel forging for general engineering purposes.
18. IS: 57- Red lead for paints and other purposes.
19. IS: 77- Linseed oil, boiled for paints.
20. IS: 2339- Aluminum paints for general purposes in steel container.
21. IS: 280- Mild steel wire for general engineering purposes.
22. IS: 814- Covered electrodes for manual metal arc welding.
23. IS: 1182- Radiographic examination of but joints in steel plates.
24. IS: 2595- Radiographic testing.
25. IS: 800- general construction in steel.
26. IS:808- Dimensions of hot rolled steel beam, column, channel & angles
27. IS: 786- Conversion factors and conversion tables.
28. IS: 1024- Welding in bridges and structures subject to dynamic loading.
29. IS: 1261- Seam welding in mild steel.
30. IS: 1367 (all 20 parts) – Threaded steel fasteners.
31. IS: 6639- Hexagonal bolts for steel structures.
32. IS: 104- Ready mixed paint, air drying, brushing, zinc chrome, priming.
33. IS: 2074- Ready mixed paint, air drying, red oxide – zinc chrome priming.



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34. IS: 1270- Metric steel tape measure.
35. IS: 487- Brush, paint and varnish.
36. IS: 1030- Carbon steel casting for general engineering purposes.
37. IS: 3400 (all 22 parts)- method of test for vulcanized rubbers.
38. IS: 1915- Steel bridge code
39. IS: 3502- Steel chequered plates
40. IS: 6586- Metal spraying for protection of iron steel
41. IS: 5666- Etch primer
42. IS: 7202- Safety Code for erection of steel structures
43. IS: 8629- Protection of iron and steel structures from atmospheric corrosion.
44. IS: 5624- Foundation Bolts
45. IS: 7215- Tolerances for fabrication of steel structures
46. IS: 432- Earth quake resistant design and construction of buildings.
47. IS: 34- White lead for paints
48. IS: 887- Animal tallow
49. IS: 816- Metal Arc Welding for general construction in mild steel
50. IS: 819- Resistances spot welding for light assemblies in mild steel.
51. IS: 1323- Oxy-acetylene welding for structural work in mild steel.
52. IS: 7293- Safety code for working with construction machinery.
53. IS: 817- Training and testing of metal arc welders.
54. IS: 1200 (all relevant parts) – method of measurement of building and civil engineering works.
55. IS: 8112-43 grade OPC.
56. BS 110 CR with latest amendment.
57. BS-111 for HSFG Bolt.
58. **PCE's Safety Circular No. 103 (Revised)**
59. **List of Brands of Materials to be used for the work as per NCR Order No. No. 291-W/O/QC/policy dated 22/03/2022**

20.3 **MATERIAL:**

- a. Contractor has to procure all the raw materials from SAIL, TISCO, IISCO or RINL only.
- b. All structural section should conform IS-2062 Gr. B. fully killed, fully normalized also if plate thickness is >12 mm.
- c. All round bars used for making rivets, shall be as per IS-1148 & turned bolts etc. shall be manufactured as per IS 1875.
- d. All structural bearing shall be made from steel conforming to IS: 2004 & IS 2062 grade B fully killed and fully normalized ultrasonically tested steel section only.
- e. All material shall be free from surface defects like notches, dents, bends excess rolled material, over/under dimensions.
- f. Rolling & Cutting tolerances shall be in accordance with IS 1852.

20.4 **MAINTENANCE PERIOD:**

The work shall be maintained after completion for a period 12 months by the contractor and he shall make well any defects & any faults which may appear at his own cost.

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**SPECIAL CONDITION OF CONTRACT**

1. **DEFINITIONS AND INTERPRETATION**

In this Tender Document, as hereinafter defined, the following words and expressions shall have the meaning as under:

- a) "**BBJ**" shall mean The Braithwaite Burn & Jessop Construction Company Limited having its registered office at 27, R. N. Mukherjee Road, Kolkata- 700 001.
- b) "**TENDER**" shall mean the proposal submitted by the Tenderer/ Bidder/ Supplier/ Dealer/ Agency in response to BBJ's Notice of Invitation to this Tender Document.
- c) "**ORDER**" shall mean a written Work/ Purchase Order issued by BBJ.
- d) "**TENDERER/ BIDDER**" shall mean the firm or Company (hereinafter called Tenderer/ Bidder) who duly submits the tender after accepting all the terms & conditions of the tender document.
- e) "**SUCCESSFUL BIDDER**" whose tender has been finally accepted by BBJ.

2. **ELIGIBILITY CRITERIA**

Supporting documents to be submitted in the Techno-Commercial part of the tender.

a) **Technical Criteria:**

The tenderer must have successfully completed or substantially completed similar works (not less than 75%) during last seven years ending last day of month previous to the one in which applications are invited and should be either of the following:

- (i) Successfully completed or substantially completed at least **3 (three)** such similar works each costing not less than **30%** of the advertised value of tender  
Or
- (ii) Successfully completed or substantially completed at least **2 (two)** such similar works each costing not less than **40%** of the advertised value of tender  
Or
- (iii) Successfully completed or substantially completed at least **1 (one)** such similar work costing not less than **60%** of the advertised value of the tender

**Note:**

- (i) "Similar work" shall mean successful/ substantial execution of Execution of any major bridges single span 36m with RCC Substructure and composite girder and RCC deck slab during last 07 (seven) years for any Government / PSU / other Organization.
- (ii) Completion certificate(s) of orders or ongoing up to date work done certificate/ Document as per the above criteria to be submitted by the bidder. In addition to above, any civil experience work done along with bridge work will be considered for valuation
- (iii) Substantial completion shall be based on 75 (seventy-five) percent (value wise) or more for the works completed under the contract. Certificate for 'substantial completion' of project/ work/ asset should contain two parts. Part-I shall contain 'financial value of work done' and part-II shall contain 'certificate of functional completion of project/ work/ asset'.

- b) Girders should be fabricated by a firm that has a full-fledged RDSO approved fabrication workshop and should have a **valid certification of RDSO (STR complied)** for fabrication of girders.

c) **Financial Criteria:**

- i. Average Annual financial turnover during the last 03 (three) financial years, ending 31st March of the previous financial year **at least 30% of advertised**

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**value of the Tender.** However, in case balance sheet of the previous year is yet to audited, the audited balance sheet of fourth previous year shall be considered.

ii. Certificates in the form of Audited Balance Sheet and Profit & Loss account shall be produced by the tenderer(s) to this effect duly certified by the Chartered Accountant.

d) Other documents as mentioned on Para 5(d) of the Instruction to Bidders - Submission of Bid: Techno-Commercial Part is to be submitted.

3. **COMPLETION PERIOD**

The date of commencement shall reckon from the date of LOA/ Order and entire work for the ROB to be completed as per the following:

i. The entire work has to be completed in all respects within **09 (nine) months** from the date of LOA/ Order, whichever is earlier.

4. **EXTENSION OF COMPLETION PERIOD:**

Application for extension of time of completion will be dealt as per provision of Clause 17A & 17B of GCC of Railway with ACS no. 1 to 6, Clause 19.1, 19.2, 19.3 under Part-II Standard General Condition of Contract. However, for the sake of continuation of work BBJ may grant provisional extension.

**Note:**

- In case of any disputes regarding interpretation of any of the above clauses, the decision of the BBJ shall be final and binding on the Contractor.
- The work will be executed under the supervision of Railway / BBJ.
- Supply of all materials will be as per Railway's approved list
- All types of testing will have to be carried out as per Railway / BBJ instructions.
- In case of any dispute arises, Railway / BBJ's decision will be final.
- This contract is based on Railways tender no. Br-JHS-2024-04 dated 08/04/2024 and all the terms and conditions of Railways tender will be applicable to the agency except the price part

5. **WORKMANSHIP:**

The workmanship for the job shall be closely monitored by the Agency's supervisory staff as per the specification and as directed by the Engineer/ Engineer In-Charge of BBJ/Railway and/or any other authorized agency of Railway. Any work done by the successful bidder is found unsatisfactory or a major mismatch is observed at the site that should be rectified/redone as per the instructions, immediately after notifying the successful bidder. If the successful bidder fails to do so and the same is done by BBJ then BBJ will also recover the same amount from any due payment of the successful bidder. **Any rejection on grounds of quality shall be re-done at the successful bidder's cost.**

6. **QUANTITY OF WORK TO EXECUTE**

The total quantity of work as per Bill of Quantity (BOQ) can vary to any extent as decided by BBJ but the unit rate finalized will not change up to the completion of the project.

7. **RATE**

**The bidder must quote the Rate, in percentage above/ below/ at-par, including GST and all other taxes & duties for the items mentioned in BOQ. The price must be firm during the tenure of this contract.**

**Note:**

The award of the order or rejection of the Tenderer's offer and/or cancellation of the tender

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will be made at the absolute discretion of BBJ. BBJ reserves the right to cancel or accept or reject any or all tender(s), whether lowest or otherwise, without assigning any reason(s), whatsoever thereof. A tenderer whose tender is not accepted shall not be entitled to claim any cost, charges, or expenses incidental to or incurred by him through or in connection with the preparation and submission of the Tender/Offer to BBJ. BBJ also reserves the absolute right to split up and award the requirement between two or more Tenderers.

**The Rates will be valid and remain firm for the entire duration of the work order. No revision/alterations of unit rates shall be entertained.**

8. **TERMS OF PAYMENT:**

8.1 **MEASUREMENT OF WORK BY CONTRACTOR:**

1. This clause is to be read with clause 45(ii) of Railways GCC with ACS no. 1 to 6. Measurement of work by contractor is allowed in works tender having value Rs. 5 crore or more. (ref. RB L. No. 2017/Trans/01/Policy dt. 8/2/18) vide addendum & Correction Slip (ACS) no. 50 to Indian Railway code for engineering dept for introduction of measurement and record of 'Executed works' by contractor in Railway Construction works.
2. For details procedure and instructions please refer Addendum & Correction slip No. 50 to Indian Railways Code for Engineering Department in reference to Clause 1316 A of Indian Railways Code for Engineering Department.
3. Tax Invoice shall be submitted by the bidder fortnightly on or before the date fixed by BBJ for all works executed in the period of the month. Payment will be released stage-wise based on the fortnightly certified bill based on acceptance of RAILWAY shall apply to the successful bidder.
4. Contractor will submit monthly bill as per the format prescribed by BBJ

**Note:**

1. Fabrication work shall be done either by RDSO approved vendors for fabrication of bridge girders or from the other vendors by following STR (Schedule Technical Requirements) and QAP (Quality Assurance Plan) approved by CBE, for fabrication works in workshop. The fabrication has to be done in a well-established factory/workshop having guided submerged arc welding facilities. The fabricated girder/column/other structural parts will be transported to site of work by contractor's own means at his own cost. Any decision by BBJ's representative regarding the minimum number of shuttering sets, jigs, plants, machinery etc in this regard shall be final and binding on the contractor. The contractor shall ensure free/uninterrupted access to fabricator workshop for inspection during execution of work and ensure all arrangements/ facilities for inspection (inspection, transport & stay etc, if required).

8.2 **PAYMENT SCHEDULE:**

- A. **Payment against R/A and final bill will be released immediately after getting a similar payment from Railway.**
- B. Payment against R/A and final bill will be released immediately after getting similar payment from Railway.
- C. For releasing Final Bill - No Claim Undertaking confirming that the "The Successful bidder" has no claims of any nature against the work order and/or the work done against the work order.
- D. Unconditional acceptance of the final bill and measurements entered therein
- E. Unconditional Undertaking that The Successful bidder has complied in full with the Legal/ Statutory obligations about the labour engaged by him on the job including

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- payment of terminal benefits if any, and that he indemnifies BBJ of any obligation/liability that may arise owing to any representation of any workmen employed by him.
- F. A Clearance Certificate from BBJ confirming that no job is left as per BOQ/ Revised BOQ for the work.

9. **FREE ISSUE OF MATERIALS**

9.1 **REINFORCEMENT BARS:**

- a) Reinforcement Bars will be supplied to work site through BBJ's site store as per Agency's requisition/ construction programme.
- b) 1.5% wastage will be allowed as irrecoverable wastage, and reconciliation will be done accordingly.
- c) Payment will be made after acceptance of reconciliation statement submitted by agency duly accepted/approved by BBJ.

10. **TAXES & DUTIES**

The successful bidder shall be exclusively responsible for payment of all Taxes, Royalties etc. (**including Goods and Service Tax**) that may be levied from time to time according to the Laws & regulations now in force & also hereafter to be imposed, increased or modified from time to time. Nothing will be payable extra by the Company in respect of any duties/taxes to be imposed on the procurement of materials for execution of the contract.

11. **GOODS AND SERVICE TAX (GST)**

- a) The successful bidder shall be liable to pay all applicable taxes [**including Goods and Service Tax (GST)**] or any other tax or cess and show the amount of CGST, SGST, IGST, Cess or any other tax, as applicable, separately in the bill/ invoice/ debit/ credit notes. Successful bidder shall quote their GST Identification No. (GSTIN) in all its bills/invoices/ debit/credit notes.
- b) The successful bidder has to provide a proper invoice/ debit/ credit notes bearing QR Code wherever applicable in the form and manner prescribed under rules of the GST Act/ rules containing all the particulars mentioned therein. In the event the successful bidder fails to provide the invoice/debit/credit notes in the form and manner prescribed under GST, then in the event of such non-compliance of the GST Act/Rules, the successful bidder shall be liable to indemnify for any losses to the Company.
- c) The successful bidder shall raise their tax invoice in the regular interval as per contract condition and upload their supply invoice in GSTN Portal through GSTR-1 return with 10th of next month. Mismatch in return of BBJ due to any reason attributable to the bidder, the same shall be recovered from Bidder's bill.
- d) The successful bidder shall upload/ submit/ report all supply invoices/ debit/ credit notes details in the form of prescribed statements/returns on the GSTN portal on or before the prescribed due dates date as per GST act/rules. The successful bidder shall pay the balance payable GST amount against supplies made to the Company on a monthly basis within due date from the appointed date regularly. Successful bidder shall reconcile the differences/ mismatches in submissions on GSTN portal if any before submission of their final monthly return.
- e) The successful bidder shall issue a credit note or debit note (if any) with reference to an original invoice within the prescribed time limit as per GST Act/ rules only after acceptance from the Company and the same shall be uploaded by the successful bidder in the GSTN portal in the same month. Successful bidder shall issue and submit the supplementary invoices (if any) with reference to original invoices to the Company promptly and within the prescribed time limit as per GST act/rules and the same shall be uploaded by the successful bidder in the GSTN portal in the same month. In case there is any loss of credit or additional liability and/ or interest etc. arises due to non-compliance by the successful bidder, the same shall be reimbursed by the successful

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bidder to the Company. In case the successful bidder disqualifies in any of the above, please note that the input tax credit (GST) shall not be available to the Company and the Company has right to hold the GST amount without any intimation until the matter get resolved and credit is available to the Company.

- f) In the event where the input tax credit of the GST charged by the successful bidder is denied by the tax authorities to the Company, the Company shall be entitled to recover such amount from the successful bidder by way of adjustment from the next tax invoice/debit note. In addition to the amount of GST, the Company shall also be entitled to recover from the successful bidder interest along with applicable penalty imposed on the Company under GST laws. It is further agreed that in case the successful bidder fails to charge GST, if applicable, on the services/activities forming part of this agreement, at the time of raising invoices; the Company shall not be liable or responsible for reimbursing such tax, at any later date.
- g) The Company reserves the right to change the aforesaid GST/ Tax terms and conditions as notified from time to time by Government of India or respective State Governments. It is further clarified that all payments under this agreement shall be subject to withholding taxes, if applicable.
- h) At present GST-TDS is applicable. Deduction of GST-TDS at source would be enforced from the running bills at the rates prescribed. The GST (i.e., SGST, CGST or IGST) amount shall be shown separately in invoice and also submit proper Tax Invoice as per section 31 of CGST Act, and Rule 46 of CGST Rules, 2017 to get Input Tax Credit by BBJ.

12. **NEW LEVIES/ TAXES**

In case Government imposes any new levy/tax or modifies rate of existing taxes including GST after awarding of the work during the tenure of the contract, BBJ shall reimburse the same at actual on submission of documentary proof of payment subject to the satisfaction of BBJ that such new levy/tax applies to this contract.

13. **PERFORMANCE GUARANTEE**

- a) For due and faithful fulfilment of the contractual obligations, the successful bidder shall furnish a Performance Guarantee for an amount equivalent to **5% (five percent)** of the contract price/ value of work order either by Bank Draft/ NEFT/ RTGS or in the form of Bank Guarantee. In the event, the Performance Guarantee is submitted in the form of Bank Guarantee the same should be from any Nationalized/ Scheduled Bank of India in the prescribed format of BBJ with due validity period and claim period of 180 days. The aforesaid Bank Guarantee should be submitted within 21 (twenty-one) days from the date of issue of Letter of Acceptance (LOA). BBJ administration reserves the right to cancel the bid and withdraw the LOA if the Performance Guarantee is not submitted within 21 days.
- b) Provided further that after receipt of a specific formal request letter (in writing) from the successful bidder with valid justification/ reason for their non-submission of Performance Guarantee within the stipulated period, the said period of 21 (twenty-one) days for submission of Performance Guarantee may be extended at the sole discretion of the Competent Authority of BBJ. In such event of extension, a penal interest of 12% (twelve percent) per annum on Performance Guarantee value shall be charged for the delay beyond 21 (twenty-one) days, i.e., from 22nd day after the date of issue of LOA and up to the actual date of submission. In case the successful bidder fails to submit the Performance Guarantee even within the extended period, as aforesaid, the bid of the successful bidder shall be liable for rejection by the BBJ administration, and the LOA shall stand withdrawn.
- c) The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case, the time for completion of work gets extended, the successful bidder shall get the validity of Performance Guarantee

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- extended to cover such extended time for completion of work plus 60 days.
- d) In case the successful bidder fails to submit the requisite Performance Guarantee within the stipulated period as mentioned in the above paragraphs, the bid may consequentially be cancelled by BBJ, and the LOA shall stand withdrawn. The defaulting successful bidder shall be debarred from participating in Re-Tender for that work and his EMD/ SD/ PG/ RA Bills shall be encashed/ invoked/ forfeited. In this regard, the decision of the Competent Authority of BBJ shall be final.
- e) The formal Order shall be issued/ contract agreement (if any) shall be executed within a reasonable time only after receipt of Performance Guarantee from successful bidder. Till such time the order is issued/contract agreement (if any) is executed the successful bidder shall execute the work on the strength of LOA, but no payment shall be made to the successful bidder without order/ contract agreement. In the event the bid is cancelled by BBJ, and LOA is withdrawn accordingly due to non-submission of Performance Guarantee, the successful bidder shall have no right to claim on the executed work if any as aforesaid or any other claim whatsoever.
- f) The value of Performance Guarantee originally submitted by the successful bidder need not be changed for a variation of contract price/ order value up to 25% (either increase or decrease). In case during the course of execution, value of the contract increases beyond 25% of the original value, an additional Performance Guarantee amounting to 5% (five percent) as applicable for the excess value over the original contract value shall be deposited by the successful bidder within 21 days from the date of receipt of intimation from BBJ.
- g) The Performance Guarantee shall be released after physical completion of the work plus after completion of 60 days thereafter based on 'Completion Certificate' issued by BBJ stating that the successful bidder has completed the work in all respects satisfactorily. The Security Deposit shall, however, be released only after expiry of the maintenance period/ defect liability period and after passing the final bill based on 'No Claim Certificate' from the successful bidder.
- h) Whenever the contract is rescinded by BBJ due to failure of the successful bidder, the EMD/ Security Deposit of the successful bidder shall be forfeited, and their Performance Guarantee shall also be encashed. The balance work shall be got done independently without risk & cost of the failed successful bidder. The failed successful bidder shall be debarred from participating in the tender for executing the balance work. If the failed successful bidder is a JV or a Partnership firm, then every member/ partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV/partnership firm.
- i) BBJ shall make a claim under the Performance Guarantee for which the BBJ is entitled under the LOA/ Contract (notwithstanding and/or without prejudice to any other provisions in the LOA/ Contract Agreement) in the event of:
- (a) Failure by the successful bidder to extend the validity of the Performance Guarantee as described herein above, in that event BBJ may claim the full amount of the Performance Guarantee from the successful bidder.
- (b) Failure by the successful bidder to pay BBJ any amount due, either as agreed by them or determined under any of the Clauses/ Conditions of the LOA/ Order/ Contract Agreement, within 30 days of the service of notice to this effect by BBJ.
- (c) In the event of the LOA/ Contract being rescinded by BBJ under provisions of any of the clause/ condition of the LOA/ Order/ Contract Agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the BBJ.

14.

**SECURITY DEPOSIT:**

As security for the proper and faithful fulfilment of the obligation under the order, a Security Deposit equivalent to **5% (five percent)** of the Total Contract Value shall be deducted and should be kept valid till completion of the entire contract period plus 12 (twelve) months

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i.e., up to end of Defect Liability Period. Security Deposit shall be in the following manner.

The Earnest Money deposited by the bidder along with the tender will be retained by the BBJ as part of the Security Deposit. The balance amount to make up with the total amount of the Security Deposit may be deposited by the Successful bidder in the form of a Demand Draft/ Pay Order or may be recovered by percentage deduction from the contractor's bills.

Recovery of Security Deposit: The Security Deposit/ rate of recovery/ mode of recovery shall be as under:

- d) Security Deposit for work should be **5% (five percent)** of the Contract value and shall be recovered from the R/A bill.
- e) The rate of recovery should be at the rate of **10% (ten percent)** of the gross R/A bill amount till the full security deposit is recovered.
- f) Security deposits will be recovered only from the bills of the contractor and no other mode of collecting SD such as SD in the form of instruments like BG etc., shall be accepted towards security Deposit.

Security Deposit shall be returned to the contractor after successful completion of entire Order plus 12 (twelve) months i.e., after the end of Defect Liability Period and after the following:

- a. After passing the final bill based on the "No Claim Certificate" with the approval of the Competent Authority.
- b. Submission of an unconditional & unequivocal 'No Claim Certificate' from the concerned contractor. This certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the contractor and that there is no due from the contractor to BBJ against the contract concerned.

15. **QUANTITY VARIATION**

- a) There may be quantity variation as approved by BBJ/Railway during the actual execution of work.
- b) The accepted variation in the quantity of each individual location and item of the contract would be up to **30%** (thirty percent) of the quantity originally contracted.
- c) The Contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any claim or any compensation whatsoever up to the limit of 30% variation in the quantity of the individual item of works.

16. **SUPERVISION & LABOUR:**

The bidder will be responsible for providing labour of adequate skill and supervisory staff for the timely execution of work.

17. **WATCH & WARD**

The successful bidder is responsible for the watch and ward of the materials. The price quoted by the Successful bidder is inclusive of the watch and ward expenses and no extra claim will be entertained for the deployment of watch and ward or loss, damage of machinery/ materials at the workshop. BBJ shall not be liable for the loss or damage of any of the successful bidder's equipment, machinery and temporary works.

18. **DEFECT LIABILITY PERIOD**

The Successful bidder shall fully guarantee all work as per the scope of this tender/order perform strictly in accordance with the drawings, specifications etc. The work shall be free from all defects. Should any work be not performed as intended or proved defective within



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**12 (twelve) months from the date of completion of Works**, the work shall upon notification of deficiency/ defect be promptly rectified by the Successful bidder to the satisfaction of BBJ and/or Railway and/or any other Inspection Agency appointed by Railway without any delay and at no extra cost to BBJ.

If the successful bidder fails to effect proper replacement within a reasonable time of receipt of BBJ's notification to this effect, BBJ shall be free to take such corrective action on the successful bidder.

19. **EMPLOYEES COMPENSATION INSURANCE**

The successful bidder shall submit proof of Employees Compensation Policy for all their workmen/ supervisors and any other person whom the successful bidder will deploy for our Project work before the commencement of the work.

Workmen's Compensation and Employer's Liability Insurance: WC Policy/ Insurance shall be affected for all the employees of the successful bidder. If any of the work is sublet, the successful bidder shall require their Sub-Contractor to provide workmen's compensation and employee's liability insurance for the latter's employees, if such employees are not covered under the Sub-Contractor's Insurance.

20. **PROVIDENT FUND**

The successful bidder will be required to cover all their workmen engaged by them under provident fund (P.F.) from the commencement of the work. The successful bidder will have to submit the challan of payment made towards P.F. for their labour and staff to BBJ's Accounts department every month failing which no RA bill payment will be made.

21. **STATUTORY COMPLIANCE**

The successful bidder shall ensure strict compliance with all relevant labour laws, Minimum Wages Act, Payment of Wages Act, Industrial Disputes Act, Payment of Bonus Act, Contract Labour (Abolition & Regulation) Act, E.S.I. Act, P.F. Acts, Industrial Safety regulations, laws pertaining to use/ storage of explosives for the work. The successful bidder shall submit to BBJ the required documents as proof. Labour Codes (as per the status of their applicability) shall be entered.

22. **CONFIDENTIALITY OF DOCUMENTS**

The successful bidder shall treat all documents, specifications, drawings and contents therein as private and confidential.

23. **SUBLETTING OF WORK**

No part of Work Order nor any share or interest thereof shall in any manner of degree be transferred, assigned, or sublet by the Successful bidder directly or indirectly to any firm or corporation whatsoever without the prior consent in writing of BBJ.

24. **INSPECTION OF WORKS**

Inspection & testing of work executed by the sub-contractor will be done by BBJ and/or Railway and/or their authorised representative and the sub-contractor is required to get the work passed through BBJ and/or Railway and/or their authorised representative.

25. **SAFETY AND ENVIRONMENT AT SITE/SHOP**

a) The successful bidder shall strictly abide by all safety standards, specifications, practices, rules, and regulations in construction and also the instruction of our safety (EHS) Engineer. Any kind of unsafe action or unsafe method of work by The Successful bidder's workmen, which may lead to injury to the successful bidder's workmen, will

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be viewed seriously and a penalty for the same will be levied on the successful bidder for such unsafe actions.

- b) The successful bidder will be responsible for the safety of their staff and employees of other agencies working in the successful bidder's area of operation.
- c) The Successful bidder shall delegate the responsibility of implementation of safety rules to one of The Successful bidder's staff.
- d) All safety appliances required like safety helmets, safety belts, shoes, retro-reflective jackets and other Safety PPE, etc., shall be arranged by the successful bidder at The Successful bidder's cost.
- e) In the event of non-availability of such safety gadgets at the required point of time, we may, at the sole discretion of the Site in charge, procure such gadgets and issue the same to The Successful bidder on a chargeable basis on actual plus 20% overhead charges.
- f) The successful bidder's authorized representative shall attend all safety meetings convened by the site safety (EHS) Engineer and abide by his instructions and follow the site safety practices without failure.
- g) Night working: Utmost care shall be taken during night operations with proper illuminations and safety.
- h) Any other safety arrangement is recommended to be followed as per instruction of Railway.
- i) Further, the successful bidder should ensure compliance with COVID-19 protocols as applicable.

26. **LIQUIDATED DAMAGES**

The time for the execution of the work shall be deemed to be the essence of the contract and the works must be completed not later than the date(s) as specified in the contract.

If the contractor fails to complete the works within the time as specified in the contract for the reasons not attributable to the successful bidder, BBJ may, if satisfied, allow the contractor to complete the work for further extension of time without imposing LD.

If the successful bidder fails to complete the works within the time as specified in the contract for the reasons attributable to the successful bidder, BBJ allows, if satisfied that the works can be completed within a reasonable short time thereafter, the successful bidder for further extension of time. On such extension, BBJ will recover from the bills of the successful bidder, as agreed damages, a sum equivalent to ½ (half) of 1% of the contract value per week or part of the week of any supplied equipment/services not delivered within stipulated time period or total order value in the case where part delivery is of no use to the purchaser, subject to the maximum limit of 10% for contract value up to 2 (two) lakh and 5% for contract value above 2 (two) lakh.

For the purpose of this Clause, the contract value of the works shall be taken as the value of work as per contract agreement including any supplementary work order/contract agreement issued.

Provided further, that if BBJ is not satisfied that the works can be completed by the Successful bidder and in the event of failure on the part of the successful bidder to complete the work within the further extension of time allowed as aforesaid, BBJ shall be entitled to encash the successful bidder's Security Deposit and Performance Guarantee and also rescind the contract, whether or not actual damage is caused by such default.

27. **INDEMNITY**

Bidder shall indemnify BBJ against all claims in respect of their contractual obligations in the event of non-compliance of statutory rules/ obligations/ laws/ taxes & duties etc.

28. **TERMINATION OF CONTRACT**

In the event, BBJ finds that the successful Bidder's progress is consistently below the accepted pace based on the program scheduled mentioned in this document or fixed by BBJ and/or if the quality of works being executed by the successful Bidder falls below the expected standards laid down by BBJ, in such cases, in the interest of timely and successful completion of the project and to maintain the high quality of work, BBJ reserve the right to delete the Scope of Work of the successful Bidder, or, the entire balance work to be taken away from the successful Bidder and BBJ shall be at liberty to get such works done/executed by any other agency/ agencies. Moreover, BBJ shall not be liable to pay any compensation or make good any damage/s or to affect any other payment to the present successful bidder for any ground whatsoever.

In the above event, the successful bidder shall be debarred from participating in the tender for executing the balance work. If the successful bidder is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV /partnership firm.

The defaulting successful bidder shall not be issued any completion certificate for the contract.

All the statutory obligations including maintaining all other relevant Statutes, Laws/ Rules, Local Rules & Regulations/ Rules of Central/ Local Govt. bodies should abide & comply by the successful Bidder and any consequence comes out from the act or omission of the successful Bidder which can result in stoppage of work or the successful bidder fails to comply any of its respective Contractual obligation(s) within the stipulated time frame, in that event BBJ reserves the right to terminate the contract and to take any action against the successful Bidder (such as forfeiture of EMD/ Security Deposit, encashment of Performance Bank Guarantee, non-payment/ forfeiture of RA Bills etc.) and the decision of BBJ in this respect shall be final.

In the above situations, BBJ reserves the right to issue a notice in writing to that effect and if the successful bidder does not within seven days after the delivery to him of such notice proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid of the entire satisfaction of the BBJ, then BBJ shall be entitled after giving 48 hours' notice in writing to rescind the contract as a whole or in part or parts (as may be specified in such notice) and after the expiry of 48 hours' notice, a final termination notice should be issued by BBJ.

29. **RESOLUTION OF DISPUTES AND ARBITRATION**

In case a dispute or difference of any kind whatsoever arises out of or relates to the Contract or ancillary/incidental as to the terms and conditions of it or relates to any matter for execution and/or performance of the contract, between the parties to the Contract, it is a term of the agreement by and between the parties herein that before invoking arbitration, the aggrieved party shall first & foremost refer the matter to the Competent Authority of BBJ and the decision/recommendation/interpretation made by the said Competent Authority of BBJ shall be final & binding upon both the parties.

On the failure of the procedure prescribed above or if a party is dissatisfied with the decisions/recommendations aforesaid, and notwithstanding anything else contained elsewhere, the aggrieved party may by notice in writing to the Competent Authority of BBJ evince the intention to refer the disputes and differences that have arisen between the parties to Arbitration by the constitution of an Arbitral Tribunal. The Arbitral Tribunal shall consist of three arbitrators, one each to be nominated by the respective parties and the third to be appointed by the nominated arbitrators.

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Pending submission of and/or decision on a dispute or difference as aforesaid or until the Arbitral Award is published, the parties (if the Contract is not terminated/ cancelled) shall continue to perform all of their obligations under this Agreement and the Contract, without prejudice to a final adjustment in accordance with such award.

The decision of the Arbitral Tribunal arrived at after hearing the parties shall be final and binding upon the parties. The Arbitration Proceedings shall be conducted in accordance with the Arbitration and Conciliation Act, 1996 or any statutory modifications or re-enactments thereof.

It is also agreed by the parties that the Arbitration Proceedings shall be conducted in the English language. The venue of Arbitration shall be Kolkata only and any proceedings arising out of this Agreement / Contract shall be subject to the jurisdiction of Courts at Kolkata.

65.6 While executing the work by the agency and/or after completion of the work and/ or till completion of the maintenance period as per order, a dispute or difference of any kind whatsoever arises out of or relates due to actions of the Railway and/ or the agency, the same will at first instance be settled amicably with the Railway through BBJ. In case amicable settlement cannot be reached and it is required to initiate arbitration proceeding by BBJ with the Railway, the agency will bear entire costs related to arbitration proceedings including legal expenses, incidental costs e.g. costs related to travelling, food & lodging of BBJ's representatives including BBJ's legal experts/ lawyers, costs of documentation etc.

30. **FORCE MAJEURE:**

If any time, during the continuance of this contract, the performance in whole or in part by either party under obligation as per this contract is prevented or delayed by reasons of any war or hostility, the act of the public enemy, civil commotion, sabotage, fire, flood, explosion, epidemic, quarantine restrictions, strike, lockout or acts of God (hereinafter referred to as "eventuality"), provided notice of happening of any such eventuality is given by either party to the other within 21 (Twenty) days of the date of occurrence thereof, neither party shall because of such an "eventuality" be entitled to terminate this contract nor shall either party have any claim or damages against the other in respect of such non-performance or delay in performance and deliveries under the contract. The contract shall be resumed as soon as practicable after such "eventuality" has come to an end or ceased to exist.

In case of any dispute, the decision of BBJ shall be final and conclusive, provided further that if the performance in whole or part of any obligation under this contract is prevented or delayed because of any such eventuality for a period exceeding 60 (Sixty) days, either party may at its options, terminate the contract.

Provided that if the contract is terminated under this clause, the Purchaser shall be at liberty to take over from the supplier at a price to be fixed by the purchaser, which shall be final, all unused, undamaged and acceptable equipment, bought out components and other stores in the course of manufacture which may be in the possession of the Supplier at the time of such termination, or such portion thereof as BBJ may deem fit except such equipment, as the Supplier may, with the concurrence of the Purchaser, elect to retain.

31. **NON-SCHEDULE ITEM OF WORK**

Settlement of rate of the extra item(s) of work which is/are not covered by the schedule:

The successful bidder shall notify any extra item(s) of work to BBJ immediately after he comes across the same during the execution of work and submits the rate for the same. Based on merit, BBJ shall take up with RAILWAY for settlement of the rate of the extra

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item(s) of work. If RAILWAY admits the said extra item(s) of work and settles the rate thereof then BBJ shall also admit the said extra item of work for the successful bidder and pass on 90% of the rate settled by RAILWAY.

32. **IMPORTANT NOTES:**

BBJ reserves the right to:

- i) Accept or reject any bid received at its discretion without assigning any reasons whatsoever.
- ii) Increase/ decrease/ alter the job description/ scope of work with the corresponding change in the value of the contract.
- iii) Postpone or extend the above-mentioned date, split and distribute the work among more than one bidder without assigning any reason whatsoever.
- iv) May ask for further qualification during techno commercial scrutiny of bids received.
- v) BBJ shall not be responsible for any delay, loss, damage for bids sent by post.
- vi) BBJ shall not be liable for any expenses incurred by the bidder for delivery of materials or during the preparation of the bid irrespective of whether it is accepted or not.
- vii) Canvassing i.e., soliciting favour, seeking advantage etc. in any form is strictly prohibited and any bidder found to have engaged in canvassing shall be liable to have his bid rejected summarily.
- viii) If the bidder deliberately gives any wrong information in his tender to create circumstances for the acceptance to his bid, BBJ reserves the right to reject such application.

(पार्थ नंदी / PARTHA NANDY)  
मुख्य प्रबंधक (परियोजना) / CHIEF MANAGER (PROJECT)

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**ADDITIONAL SPECIAL CONDITIONS OF CONTRACT**

**1. GENERAL:**

- 1.1 These "Special Conditions and Specifications, Instructions to Tenderers and the stipulations made in the Schedule of quantities and rates" shall govern the works executed under this contract in addition to the BBJ / "North Central Railway Specification for Materials and Works, General Conditions of Contract North Central Railway, Indian Railway Unified Schedule of Rates-2021 & CPWD DSR-2021", each, as amended by correction slips from time to time.
- 1.2 All references in this document to the word "Standard Specifications" shall mean the Specifications mentioned in the "North Central Railway Specifications for Materials and Works".
- 1.3 Any foot note/s appearing below the item/s of the contract schedule will take precedence over these Special Conditions.
- 1.4 The special conditions supplement the latest General Conditions of Tenders & along with up-to-date correction slips, up to date of up loading of tender document and Additional General Conditions of Tender, the General Conditions of Contract and the notes appearing under the relevant chapters and sub-chapters of the IR Unified Schedule of Rates-2021 & CPWD DSR-2021 and should be considered a part of the contract papers. Where the provisions of these conditions are at variance with the General Conditions of Contract, these special conditions shall prevail. The General Conditions of Contract will mean the latest General Conditions of Contract & along with up-to-date correction slips up to date of up loading of tender document as amended and/or corrected from time to time and obtaining at the time of accepting of the tender and at the time of execution of the agreement mentioned in Conditions of Tender. It should be the responsibility of the Contractor before submitting his tender and again before entering into said agreement to ascertain all amendments and/or corrections made to the said General Conditions of contract.
- 1.5 No material price variation or wages escalation on any account whatsoever and compensation for "Force Majeure "etc. shall be payable under this contract, unless otherwise specified in acceptance letter. No claim whatsoever will be entertained by the BBJ on account of any delay or hold up of the works arising out of delay in supply of drawings, changes, modifications, alterations, additions, omissions. Omissions in the site layout plans or detailed drawings or designs and or late supply of such materials as are require to be arranging by the BBJ or due to any other factor on BBJ's accounts. No claim for idle labour and or idle machinery etc. on any account will be entertained. Similarly no claim shall be entertained for business loss or any such loss.

**2. EXECUTION OF WORKS:**

Please refer GCC of Railway with ACS no. 1 to 6 Clause 19.1, 19.2, 19.3 under Part-II Standard General Condition of Contract.

**2.1 SETTING OUT OF WORKS:**

The Contractor shall be responsible for the correct setting out of all works in relation to original points, lines and levels of reference at his cost. The Contractor shall execute the work true to alignment, grade, levels and dimensions as shown in the drawing and as directed by the Engineer's representative and check these at frequent intervals. The Contractor shall provide all facilities like labour and instruments and shall co-operate with the Engineer's representative for checking of all alignment, grades, levels and dimensions. If, at any time, during the progress of the works any error appear or arise in any part of the work, the Contractor, on being required so to do by the Engineer's representative shall, at his own cost rectify such errors, to the satisfaction of the Engineer's representative. Such

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checking shall not absolve the Contractor of his own responsibility of maintaining accuracy in the work. The Contractor shall carefully protect and preserve all bench marks, sight rails, pegs and other things used in setting out the work.

2.1.1 **In case of bridges the BBJ/ N.C. Railway will initially set out the centre line of the bridge and the alignment and fix the position of the piers and abutments with DGPS or any other precise means, having accuracy up to 01 mm and will get it approved from Railway. The contractor shall thereafter set out the work and every part thereof fully. The contractor shall be responsible for maintaining the accuracy of the alignment, positions, levels and of the work in accordance with the drawings, directions or instructions given from time to time to him and every facility shall be given to the engineer for checking of the same. The contractor at his own cost shall rectify an error in the dimensions, alignments positions or levels of work set out or constructed by him to the satisfaction of the Engineer.**

2.1.2 In the case of building, or other structures the Engineer or his representative will set out the centre longitudinal or the face line and at least one main cross line.

2.1.3 The work shall be set out by the contractor to the satisfaction of the engineer, but his approval thereto shall not, nor shall his joining with the contractor in setting out the work, relieve the contractor from his entire and sole responsibility for correctness thereof.

2.1.4 The contractor shall also provide, fix and be responsible for the maintenance of all stakes, template profiles, level marks, points etc. & must take all necessary precautions to prevent these from being removed, altered or disturbed and will be held responsible for the consequences of such removal, alterations or disturbances, should the same take place, and for their efficient reinstatement.

2.1.5 Contractors shall submit detailed design calculations and drawings of centering, shuttering involving construction of any structures across running line. Launching, scheme if any and design calculation and drawings of launching scheme and the centering / shuttering should be submitted to office of BBJ for examination and obtains the approval of competent authority. For all other structures the centering and shuttering shall be approved by the BBJ In-charge of work.

2.1.6 Contractor should take all care to preserve the work until taken over by the BBJ/Railway in good condition. Contractor is responsible for handing over of work to the Railway as per scope of contract.

2.2 **SERVICE ROADS AND APPROACHES**

The Contractor/s will be permitted to make use of existing service roads, or service roads constructed by the BBJ/ Railway for its use free of cost. New service roads required by the contractor/s either near the work site or elsewhere within or outside railway limits for carriage of materials or for any other purpose whatsoever, will have to be constructed and maintained by the contractor/s at his/their own cost. For the purpose of construction of service roads on railway land, permission will be given free of charge. However, contractor, at his own cost, will erect and man barriers on these approach roads to check unauthorized ingress of outsiders into railway land and near railway tracks. If any land other than railway land is necessary to be acquired or to be entered upon, permission to enter in the land will have to be arranged by the contractor/s at his/ their cost. The contractor/s will not prefer any claim, whatsoever on this account. The BBJ, however, reserves the right to make use of such service roads as may be constructed by the contractor/s without payment of any charges.

2.3 **NOTICES TO PUBLIC BODIES**

The contractor shall give to the Municipality, Police and other authorities all notices that may

be required by the law and obtain all requisite licenses for temporary obstructions, enclosures and pay all fees, taxes and charges which may be liveable on account of his own operation in executing the contract. He should make good any damage to adjoining premises whether public or private and provide and maintain any light etc. required in night.

**2.4 SHIFTING OF ELECTRICAL/TELEGRAPH WIRES/CABLES ETC.**

In some stretches, high tension grid towers/electric/ telegraph/ telephone wires or posts etc. may require shifting. It is expected that the electric lines /towers will be shifted in good time, but in case, there is any delay on this account suitable extension in period of completion will be considered and given to the contractor for only the affected portion and no compensation whatsoever in this respect or due to the delay thus caused will be payable and contractor has to adopt such methods of execution so as not to cause any damage to existing structures, lines etc.

**2.5 TESTING AND FIELD LABORATORY**

2.5.1 This work is a highly technical work; therefore, to ensure desired quality of work, close monitoring has to be ensured. The tenderer has to establish technical laboratory at site containing various test equipment's and testing facilities involved in the work, including power back-up, with suitable numbers of Computers, Printers, Fax facilities etc., including their consumables, as per the directions of the BBJ/ NC Railway, to enable the quality control and their documentations.

2.5.2 The contractor shall get a percentage of samples tested from other approved laboratories as directed by Engineer-in-charge of BBJ/ NC Railway for confirmatory test without any extra payment to the contractor unless otherwise specified in the contract.

2.5.3 Materials supplied by the contractor will require to be tested as required by the various codes and specifications at contractor's cost.

2.5.4 The entire initial, running and post expenses in this regard have to be borne by the contractor and nothing extra will be paid by the BBJ.

**2.6 COMMUNICATION FACILITIES**

The work is very important work and will be executed along with the running line having heavy load of traffic. The work is required to be executed with close monitoring and coordination amongst the various departments of the Railways as well as various authorities involved in the execution of work. Therefore, communication system is of utmost importance. For smooth communication, the contractors should have proper facilities at site.

**2.7 WORK PREPARED AWAY FROM THE SITE**

The contractor shall give the Engineer written notice of the preparation or manufacture at a place away from site, of any materials or components to be used on the works, stating the place & time of preparation or manufacture, so that the Engineer may inspect all stages of the production process. Failure to give such notice may result in the rejection of the materials or components. The facilities for the inspection of such work shall be provided by the contractor.

**2.8 INTERRUPTION OF WORKS DURING MONSOON**

The contract period shall extend over a few monsoon seasons. Normal period of monsoon in the area is from 15th June to 14th October. The contractor should therefore, plan and program his work bearing this fact in mind

**2.9 CONSTRUCTION PROGRAMME**

Construction work should be planned in such a way, that there will be unhindered progress



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of the construction. For this purpose, construction programme will be finalised by the contractor in consultation with Engineer in charge whose decision will be final & binding. Apart from the above, the contractor shall afford all reasonable facilities to other contractors employed by BBJ / North Central Railway, Prayagraj or by any other authority to execute work on the site. This includes instrumentation, testing, etc. In case of disputes, decisions of the Engineer shall be final & binding.

**2.10 ADVERTISING**

2.10.1 The contractor shall treat the contract and everything within it as confidential. In particular, the contractor shall not publish any information drawing or photograph relating to the works and shall not use the site for advertising purpose, except with written consent of the Engineer and subject to such conditions as he may prescribe.

2.10.2 The contractor shall provide all facilities to the BBJ and North Central Railway or its authorized representative to collect information, photographs or make movies of any stage of work including the working of the contractor's plant, machinery and equipment etc. for records, publication, or any other purpose.

**2.11 PATENTED DEVICES, MATERIALS & PROCESSES:**

When the contractor desires to use any designed device, material or process covered by letter or patent or copy right, the right for such use shall be secured by suitable legal arrangement and agreement with patent owner and the copy of the agreement shall be filed with the Engineer if so desired by the later.

**2.12 WORKING METHOD**

a) The contractor shall submit within the time stipulated by the Engineer in writing the details of actual method that would be adopted by the contractor for the execution of any item as required by the Engineer at each of the locations, supported by necessary detailed drawings and sketches including those of the plant and machinery that would be used, their locations, arrangement for conveying and handling materials etc. and obtain prior approval of the Engineer well in advance of starting of such item of work. The Engineer reserves the right to suggest modifications or make complete changes in the method proposed by the contractor whether accepted previously or not, at any stage of the work, to obtain the desired accuracy, quality, safety and progress of work which shall be binding on the contractor and no claim on account of such change in method of execution will be entertained by BBJ, so long as specifications of the item remain unaltered.

b) The contractor shall submit a detailed programme for the whole work at the commencement of the contract. He shall further submit a detailed programme for the coming calendar month by the 25th of each month and get the same approved by the Engineer. The BBJ reserves the right to modify or change any programme submitted by the contractor and the contractor shall have no claim for extra payment or compensation on the ground of such change of his programme.

**2.13 RAILWAY LAND:**

2.13.1 Use of Railway Land required by the contractor for constructing temporary offices, quarters hutment etc. for the staff and storing the materials etc. will be permitted to him/them free by BBJ after getting the same approved by Railways, if available. The location of these offices etc. will be subject to the approval of the Engineer-In-Charge or his representatives. The BBJ will not acquire any land for the purpose of movement of Contractor vehicles, plant & machinery to site of work.

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- 2.13.2 The contractor shall have to provide road approaches, water supply, power lines etc. for his use at his cost. The engineer and his representative will have free access at any time to the plots of land given to the contractor.
- 2.13.3 After completion of the work, the contractor shall clear all land under his temporary occupation to useable condition without any cost to BBJ and hand it over to the BBJ through its authenticated representative without any encumbrance before completion of the maintenance period or at any earlier day as specified by the Engineer-In-Charge. In the event of failure to clear the site, the BBJ will get this done at his risk and cost after serving one month's notice.
- 2.13.4 Use of Private Land:  
The contractor will have to make his/their own arrangements for use of private land, outside Rly. Limits for due fulfilment of contract or for borrow pits, approaches etc. directly with the landowners or local authority and to pay such rents, if any, as are payable as may be mutually agreed upon between them.
- 2.13.5 Please refer Railway GCC with ACS no. 1to6 Clause 20.1, 20.2, 20.3, 20.4, 21, 22.1, under Part-II Standard General Condition of Contract. For various compliances regarding the work.

**3. DRAWINGS AND SPECIFICATIONS OF THE WORKS:**

- a) The Contractor shall keep one copy of Drawings and Specifications at the site, in good order, and such contract documents as may be necessary, available to the Engineer or the Engineer's Representative.
- b) Figures and dimensions on drawings shall supersede measurements by scale and drawings to a large scale shall take precedence over those to a smaller scale.
- c) Please refer Railway GCC with ACS no. 1to6 Clause 22.3, 22.4 & 22.5 under Part-II Standard General Condition of Contract regarding Specification and Drawings.

**4. WORKS INVOLVING USE OF CEMENT AND STEEL:**

- a) Cement for use in the works should be procured by the contractor from the authorized/approved manufacturers/their authorized dealers/ authorized stock yards which should conform to IS Specifications as enumerated in detail in relevant clause of special conditions. Cement bags should be procured preferably in paper/ polythene bag packing & should bear the following information in legible markings:
  - i) Manufacturer's name.
  - ii) Registered Trademark of manufacturer, if any.
  - iii) Type of Cement.
  - iv) Weight of each bag in kg. or No. of Bags/Tonne.
  - v) Date of manufacture, generally marked as week of the year /year of manufacture, e.g. 30/12 which means 30th week of 2012.
- b) To ensure quality control, test certificates from the manufacturers should be produced by the contractors which should conform to the relevant specifications (latest specifications may be incorporated).
- c) To ensure quality control, test certificates from the manufacturers should be produced by the contractors which should conform to the relevant specifications (latest specifications may be incorporated).
- d) BBJ may also take samples during the course of work & get the cement and steel tested to ascertain their conformity to specifications.
- e) When such sampling is done, it should be as per specifications laid down in relevant IS Codes.
- f) Tests on Cement will be as per IS 4031 and any other test as specified by the Engineer or his representative.
- g) Tests on steel samples will be carried out as per specifications laid down in relevant IS Codes.

- h) The contractor should make his own arrangement for proper stacking and storing of cement, reinforcing bars and structural steel etc. All material should be protected from any depletion. The reinforcing bars should be protected from corrosion.
- i) Further details have been indicated in the Additional Special Conditions of contract (Part-II).

5. **INSPECTION REGISTERS AND RECORDS:**

The contractor shall maintain accurate records, plans and charts showing the dates and progress of all main operations and the Engineer shall have access to this information at all times. Records of tests made shall be handed over to the Engineer's representative after carrying out the tests. The following registers will be maintained at site, by the contractor or his representative will acknowledge and promptly comply with the orders/instructions given through entries in these registers:

- i) **Site Order Register**  
The contractor shall promptly acknowledge orders given therein by the Engineer or his representative or his superior officers and comply with them. The compliance shall be reported by the Contractor to the Engineer in good time so that it can be checked.
- ii) **Cement Register**  
This register will be maintained to record daily receipt and consumption of the cement duly indicating the balance quantity. The quantum of the work done for the cement issued on a particular date will also be maintained.
- iii) **Steel Register**  
This register will record the receipts of steel items and details of reinforcements and members wherever steel is used.
- iv) **Labour Register**  
This register will be maintained to show daily strength of labour in different categories employed by the contractor. A separate column should be provided in this register for technical staff degree/diploma holder where this technical staff will sign in token of his presence.
- v) **Logbook of Events/Hindrance register**  
All events are required to be chronologically logged in this book, shift wise and date-wise. Any hindrance to the work beyond the control should be clearly indicated in this register.
- vi) **Material passing & Testing Register.**  
Register will show material brought at site, passed, rejected etc. with quantity, specifications and test results etc.
- vii) **Cube testing register**
- viii) **Plant & Machinery register**
- ix) **Steel Stock register:**  
This register will be maintained to show record of steel procurement and payment through running bills.
- x) **Registers for earthwork:**  
Various registers for quality control of earthwork (blanket, sub-grade & sub-soil) will be maintained for all tests prescribed by RDSO guidelines.
- xi) **Steel fabrication check registers** as per approved QAP/ WPSS including jigs inspection etc.
- xii) Any other register required as per Work Plan/ Method Statements/ QAP/ WPSS etc.

All the registers mentioned as above or ordered by Engineer's representative during execution of work will be signed by the representative of the Engineer and the contractor or his representative. Any other register considered necessary by the Engineer shall be maintained at site in which the representatives of the Engineer and the contractor will have to sign. Registers as mentioned above will have to be maintained depending on the scope of work as prescribed by the Engineer at site.

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6. **SAMPLING AND TESTING:**

Contractor shall establish a field laboratory at site of work at his cost providing necessary facilities for performing routine type tests such as physical properties of cement, bricks, aggregate, water, concrete including its crushing strength to the satisfaction of the Engineer-in-charge. He will also arrange for the testing of physical/ chemical properties of reinforcement steel used by him from Govt. approved test houses/Engineering Colleges to establish the quality of steel bars used. He shall ensure that equipment's provided are of latest specification and are in good working order and got calibrated at the laboratory. The contractor shall get certain percentage of samples tested at other approved laboratories as may be directed by the Engineer-in-charge as confirmatory tests at his own cost.

7. **DAMAGE TO RAILWAY PROPERTY OR PRIVATE LIFE AND PROPERTY:**

Please refer RAILWAY GCC with ACS no. 1 to 6 Clause 24 under Part-II Standard General Condition of Contract.

8. **SHEDS, STOREHOUSES AND YARDS:**

Please refer RAILWAY GCC with ACS no. 1 to 6 Clause 25 under Part-II Standard General Condition of Contract.

9. **PROVISION OF EFFICIENT AND COMPETENT STAFF AT WORK SITES BY THE CONTRACTOR:**

9.1 The Contractor shall place and keep on the works at all times efficient and competent staff to give the necessary directions to his workmen and to see that they execute their work in sound & proper manner and shall employ only such supervisors, workmen & labourers in or about the execution of any of these works as are careful and skilled in the various trades.

9.2 The Contractor shall at once remove from the works any agents, permitted sub-contractor, supervisor, workman or labourer who shall be objected to by the Engineer and if and whenever required by the Engineer, he shall submit a correct return showing the names of all staff and workmen employed by him.

9.3 In the event of the Engineer being of the opinion that the Contractor is not employing on the works a sufficient number of staff and workmen as is necessary for proper completion of the works within the time prescribed, the Contractor shall forthwith on receiving intimation to this effect deploy the additional number of staff and labour as specified by the Engineer within seven days of being so required and failure on the part of the Contractor to comply with such instructions will entitle the Railway to rescind the contract under Clause 62 of these conditions.

9.4 **DEPLOYMENT OF QUALIFIED ENGINEERS AT WORK SITES BY THE CONTRACTOR:**

9.4.1 Please refer RAILWAY GCC with ACS no. 1 to 6 Clause 26 A under Part-II Standard General Condition of Contract

9.4.2 The details required under this stated clause are given in Additional Special Condition of Contract (Part-I) clause 19 of this tender booklet.

10. **CARE OF STAFF:**

No quarters will be provided by the BBJ for accommodation of the contractor or any of his staff employed on the work. The contractor may be allowed to erect any labour camps for housing the labour at or near the site work on available Railway land. The contractor shall at his own cost make all necessary and adequate arrangements for the importation, feeding and preservation of the hygiene of his staff. The contractor shall permit inspection at all

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times of all sanitary arrangements made by him, by the Engineer or his assistant or the medical staff of the BBJ. If the contractor fails to make adequate medical and sanitary arrangements these will be provided by the BBJ and the cost thereof, will be recovered from the contractor.

11. **FIRST AID**

The contractor shall maintain in a readily accessible place first-aid appliance including adequate supply of sterilized dressing and sterilized cotton wool. The appliances shall be placed under the charge of responsible person who shall be readily available during working hours.

12. **ISSUE OF IDENTITY CARDS BY CONTRACTORS:**

12.1 The contractor is bound to issue identity card to each and every person employed by him and deployed for execution of the contract work, as per the prescribed format provided in the tender document (Annexure iv), at his cost. Failure on the part of the contractor to issue identity cards to their employees will be treated as breach of contract conditions and therefore will be dealt as per clause NO. 62(VII) of GCC with ACS no. 1to6.

12.2 It is mandatory on the part of every employee, deployed by the contractors to keep in his possession, the identity card, issued by the contractor throughout the execution of the work. Failure to possess such identity will be treated as unauthorized presence in the Railway premises. Such persons shall be liable for prosecution as per law.

12.3 It is mandatory for the contractors to submit the list of the employees issued with the identity cards and deployed for execution of the particular contract, to the BBJ's Engineer at site before commencement of the work and also for any subsequent changes made during the execution of the work.

12.4 No claim whatsoever arising out of implementation of special conditions pertaining to issue of identity cards shall be admissible.

13. **TRANSPORT OF LABOUR TO AND FROM WORK SITE:**

As labour camps for labour will have to be located by the contractor in the land arranged by him for facilitating movement of labour to work site and back, the contractor will have to make suitable arrangement at his own cost. Facilities are to be given to labour as per statutory provisions at no extra cost to BBJ.

14. **TEMPORARY LABOUR COLONY:**

The contractor may be allowed to put temporary labour colony on their request, but it will be binding on them to remove the temporary hutments, jungles, etc., from the Railway land before finalisation of final bill.

15. **STAFF WELFARE AND BASIC AMENITIES AT SUITABLE LOCATION:**

To get the required progress, efficient monitoring of the work and for achieving desired targets, the work of 3rd line has to be carried out by deployment of labour and machineries day and nights. Therefore, all basic amenities as per requirement, like: toilets, bathrooms, drinking water, lodgings and boarding and suitable well-furnished camp office/rest rooms along with suitable transportation facilities for officials use, etc. have to be provided at suitable location in the nearby of the site by the tenderer with their own expenses, as per direction of the engineer and nothing extra will be paid for this purpose. The tenderer has to quote their rate accordingly.

The work has to be carried out in the remote areas during night hours also; therefore, proper security arrangements of the authorities involved in the execution and supervision has to be

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ensured by the tenderer at their own cost.

16. **WORKMANSHIP AND TESTING:**

Please refer RAILWAY GCC with ACS no. 1to6 Clause 27.1 under Part-II Standard General Condition of Contract.

17. **REMOVAL OF IMPROPER WORK AND MATERIALS:**

Please refer RAILWAY GCC with ACS no. 1to6 Clause 27.2 under Part-II Standard General Condition of Contract.

18. **FACILITIES FOR INSPECTION:**

Please refer RAILWAY GCC with ACS no. 1to6 Clause 28 under Part-II Standard General Condition of Contract.

19. **EXAMINATION OF WORK with RAILWAY GCC ACS no. 1to6 Clause 29 under Part-II Standard General Condition of Contract.**

20. **TEMPORARY WORKS:**

Please refer GCC with ACS no. 1to6 Clause 30 under Part-II Standard General Condition of Contract.

21. **CONTRACTOR TO SUPPLY WATER FOR WORKS:**

Unless otherwise provided in the Contract, the Contractor shall be responsible for the arrangements to obtain supply of water necessary for the works.

22. **WATER SUPPLY FROM RAILWAY SYSTEM:**

The BBJ may supply to the Contractor part or whole of the quantity of the water required for the execution of works arranging from the Railway's existing water supply system at or near the site of works on specified terms and conditions and at such charges as shall be determined by the Railway and payable by the Contractor, provided that the Contractor shall arrange, at his own expense, to effect the connections and lay additional pipelines and accessories on the site and that the Contractor shall not be entitled to any compensation for interruption of failure of the water supply.

23. **WATER SUPPLY BY RAILWAY TRANSPORT:**

In the event of the BBJ arranging supply of water to the Contractor at or near the site of works by travelling water tanks or other means, the freight and other charges incurred thereby, including demurrage charges that may be levied, shall be paid by the Contractor in addition to the charges referred to in Sub-Clause (2) of the Clause provided that the Contractor shall not be entitled to any compensation for interruption or failure of the water supply.

24. **CONTRACTOR TO ARRANGE SUPPLY OF ELECTRIC POWER FOR WORKS:**

Unless otherwise provided in the contract, the Contractor shall be responsible for arrangements to obtain supply of Electric Power for the works.

25. **ELECTRIC SUPPLY FROM THE RAILWAY SYSTEM:**

25.1 The BBJ may supply to the Contractor part or whole of the electric power wherever available and possible, required for execution of works from the Railway's existing electric supply systems at or near the site of works on specified terms and conditions and such charges as shall be determined by the Railway and payable by the Contractor provided the cost of arranging necessary connections to the Railway's Electric Supply systems and laying of underground/overhead conductor, circuit protection, electric power meters, transmission structure, shall be borne by the Contractor and that the Contractor shall not be entitled to

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any compensation for interruption or failure of the Electric supply system.

- 25.2 The contractor shall make his own arrangements for water supply. Wherever it is convenient to the BBJ / Railway Administration, the water from piped supply may be made available to the contractor, provided the contractor shall arrange at his own expense to effect the connections and lay additional pipe lines and accessories to the site of work and that the contractor shall not be entitled to any compensation for interruption or failure of the water supply. The contractor will have to pay for such water supply from BBJ / Railway well or tube wells at a rate of one per cent on the amount of all items or work appearing in the bills payable to the contractor in respect of which work such water has been used by the contractor and such charges shall be deducted from sums due or payable by the BBJ to the contractor from time to time. Water Connections to labour camps will not be permitted. Contractor has to make his own arrangement for water supply to the labour camps.
- 25.3 The contractor shall make his own arrangements for the operation of mechanical equipment's required for the execution of work and/or for the purpose of lighting for working during day/night time. Wherever, it is convenient to the BBJ/ Railway Administration, the electric supply may be made available to the contractor provided the contractor shall arrange at his own expense to effect the connections and lay additional wiring, provide meter and other accessories on the site. Such work of laying wiring etc. shall be done under supervision of a qualified staff and a certificate shall be required to be submitted to the effect that the work of wiring has been done as per rules or the work shall have to be got done through BBJ/ Railway Organization and the charges for the same shall have to be borne by the contractor as per extant rules.
- 25.4 The contractor shall not be entitled to any compensation for interruption or failure of the electric supply. The contractor will have to pay for such electric supply from Railway at a rate agreed to between contractor and BBJ Administration and such charges shall be deducted from the sums due or payable by the BBJ to the contractor from time to time.
- 25.5 Water available locally in wells, creeks or nallahs may be brackish water at some locations. It should be noted that no sea or brackish water shall be used in all classes of masonry, reinforced, mass concrete work and curing of work. In addition, water used for the above works shall be free from earthy, vegetable or organic matter, oils, acids and alkaline substance in solutions or in suspension and impurities and shall be fit for drinking.
26. **PROPERTY IN MATERIALS AND PLANT:**  
Please refer GCC with ACS no. 1 to 6 Clause 32 under Part-II
27. **TOOLS, PLANT AND MATERIALS SUPPLIED BY RAILWAY:**  
Please refer RAILWAY GCC with ACS no. 1 to 6 Clause 33(1) under Part-II
28. **PLANTS AND MACHINERY**  
The contractor shall make his own arrangements for all plants and machinery, other facilities, equipment, tools including spare parts, fuel and consumable stores, and all labour required to ensure efficient methodical execution of the work. The rates quoted and accepted shall be deemed to be inclusive of all charges of such items.
29. **PRECAUTION DURING PROGRESS OF WORKS:**  
Please refer RAILWAY GCC with ACS no. 1 to 6 Clause 34(1) under Part-II
30. **ROADS AND WATER COURSES:**  
Please refer RAILWAY GCC with ACS no. 1 to 6 Clause 34(2) under Part-II

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**31. PROVISION OF ACCESS TO PREMISES:**

During progress of work in any street or thoroughfare, the Contractor shall make adequate provision for the passage of traffic, for securing safe access to all premises approached from such street or thoroughfare and for any drainage, water supply or means of lighting which may be interrupted by reasons of the execution of the works and shall react and maintain at his own cost barriers, lights and other safeguards as prescribed by the Engineer, for the regulation of the traffic, and provide watchmen necessary to prevent accidents. The works shall in such cases be executed night and day, if so ordered by the Engineer and with such vigor so that the traffic way be impeded for as short a time as possible.

**32. SAFETY OF PUBLIC:**

Please refer RAILWAY GCC with ACS no. 1 to 6 Clause 34(4) under Part-II

**33. DISPLAY BOARD:**

Please refer RAILWAY GCC with ACS no. 1 to 6 Clause 34(5) under Part-II

**34. USE OF EXPLOSIVES:**

Explosives shall not be used on the works or on the site by the Contractor without the permission of the Engineer and then also only in the manner and to the extent to which such permission is given. After such permission is given, the explosives will be stored and used as per extant explosive rules of the Government of India/State Government. Where explosives are required for the works, they shall be stored in a special magazine to be provided by and at the cost of the Contractor in accordance with the Explosive Rules. The Contractor shall obtain the necessary license for the storage and the use of explosives. All operations in which or for which explosives are employed shall be at the sole risk and responsibility of the Contractor and the Contractor shall indemnify the BBJ / Railway in respect thereof.

To ensure effective endorsement of the rules and regulations relating to safety precautions, the arrangements made by the contractor shall be opened to inspection by Labour Officer / Engineer-in-charge of the Department or their representative.

**35. HANDING OVER OF WORKS:**

The Contractor shall be bound to hand over the works executed under the contract to the BBJ complete in all respects to the satisfaction of the Engineer. The Engineer shall determine the date on which the work is considered to have been completed, in support of which his certificate shall be regarded as sufficient evidence for all purposes. The Engineer shall determine from time to time, the date on which any particular section of the work shall have been completed, and the Contractor shall be bound to observe any such determination of the Engineer.

**36. HANDING OVER OF SITE BEFORE START OF WORK.**

Contractor should start the work within 7 days from the date of issue of acceptance letter. The site will be handed over to the contractor / authorized representative after reporting from the contractor's side. It will not be binding on the BBJ to hand over full site at a time in the starting to the contractor, but the site will be handed over to the contractor commensurate with the progress of the work. BBJ may not hand over the entire land required for completion of this work for making bank/cutting or excavation to the contractor(s) due to any unavoidable reasons. Land may be handed over in different stretches, which may not be continuous. Contractor(s) will be required to carry out the work in available stretches. If some stretch of land cannot be handed over to the contractor for borrowing earth or making bank/cutting within the contract period then suitable extension will be granted only for the affected portion without any payment of extra claim to the contractor. A note of handing over of site to the contractor in addition to entry in the site order book will be prepared duly signed by the BBJ and Contractor's representative and submitted to the Engineer In- Charge.



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In addition to what has been stipulated in clause 40 of General Condition of Contract, it is made clear that all the works and materials before being finally taken over by BBJ / North Central Railway will be entirely liability of the contractor for guarding, maintaining and making good any damages of any magnitude. It is however understood that before taking over such work BBJ / North Central Railway will not put it to its regular use as distinct from casual or incidental one except as specially mentioned elsewhere in this contract or mutually agreed to.

**37. CLEARANCE OF SITE ON COMPLETION:**

Please refer Railway GCC with ACS no. 1to6 Clause 40 (2) under Part-II Standard General Condition of Contract.

**38.** Execution of any work under this contract will be done as per the provisions of following Codes/ Specifications / Manuals / Rules / Guidelines / Technical Circulars and contractor will comply with all provisions of these below-mentioned documents. Rate of items are inclusive of all methods/procedures of various activities involved in execution for particular item detailed in these documents, unless otherwise written in Special Conditions of Contract.

- 1) Guidelines for Earthwork in Railway Projects (Guideline No. GE: G-1)
- 2) Guidelines & Specifications for Design of Formation for Heavy Axle Load (GE:0014)
- 3) Specification No. RDSO/2018/GE: IRS-0004 (D) Part-IV dated 25.07.2019
- 4) Guidelines for cutting in Railway Formations-2005 (GE:G-2)
- 5) Indian Railway Bridge Rules
- 6) Indian Railway Bridge Manual
- 7) IRS Code of Practice for Plain, Reinforced & Prestressed Concrete for General Bridge Construction (Concrete Bridge Code)
- 8) IRS Code of Practice for the Design of Sub-Structures and Foundations of Bridges (Bridge Sub-Structures & Foundation Code)
- 9) IRS Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turntables (Fabrication Specification)
- 10) IRS Code of Practice for the Design of Steel or Wrought Iron Bridges Carrying Rail, Road or Pedestrian Traffic (Steel Bridge Code)
- 11) IRS Manual on the Design and Construction of Well and Pile Foundations (Well and Pile Foundation Code)
- 12) IRS Code of Practice for Metal Arc Welding in Structural Steel Bridges Carrying Rail, Rail-Cum-Road or Pedestrian Traffic (Welded Bridge Code)
- 13) IRS Code for Earthquake Resistant Design of Railway Bridges (Seismic Code)
- 14) IRS Code of Practice for the Design and Construction of Masonry and Plain Concrete Arch Bridges (Arch Bridge Code)
- 15) Indian Railways Permanent Way Manual
- 16) Guidelines for handling and stacking of rails CT-35
- 17) Manual of Instructions on Long Welded Rails
- 18) Indian Railways Small Track Machine Manual
- 19) Specifications for Track Ballast IRS-GE-1
- 20) Indian Railways Code for the Engineering Department
- 21) Indian Railways Schedule of Dimensions 1676mm Gauge (BG)
- 22) National Building Code 2005
- 23) Any BIS/IRC Code referred in above listed documents
- 24) Instructions circulated by Railway Board/ RDSO/ NCR HQ etc.
- 25) Any other Codes, Manual & Circular as per the need

All above-mentioned codes/manuals etc. are freely available on websites of Indian Railways/ IRICEN. If contractor is not able to find any code/manual on internet, he may get it from office of BBJ in soft copy. Any document (e.g. IS Codes) which are sold online/offline by BIS

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or any other agency, contractor must get it on his own.

- 38.1 Various BIS / IRC Codes are referred in BIS/IRC Code itself. Those referred BIS/IRC Codes will also apply in contract and contractor will comply with provisions of referred BIS/IRC Codes too.
- 38.2 If work is being carried out as per RDSO drawing/any other drawing approved by Railway, material to be used, processes involved in fabrication/erection of structure etc. will comply with drawing. Contractor will follow the all instructions conveyed through the notes of drawing or any other means.
- 38.3 For items not covered by IRS and BIS Codes, provision of IRC Codes and MOST Specification are to be followed in successive that order.
- 38.4 Bar charts in tabulated form have been briefed in the scope of work to these conditions. After issuance of LOA, contractor will submit detailed bar charts in line with these bar charts and get it approved from BBJ.
- 38.5 Contractor will prepare Design Basis Report (DBR) for important bridges and obtain approval of RDSO as per guidelines of RDSO Report No. BS-112 within time frame as shown in bar chart if required and required by BBJ.
- 38.6 Contractor will prepare the Quality Assurance Program for all activities required to complete the work (e.g. center line of bridge, concreting, steel, construction material to be used) and get it approved from BBJ.
- 38.7 Contractor will prepare Method Statement for all activities required to complete the work keeping time frame of bar chart in mind and get it approved from BBJ.
- 38.8 In case of any disputes regarding interpretation of any of the clause, decision of the concerned BBJ representative shall be final and binding on the contractor/s.
39. **PLEA OF CUSTOM:**  
The plea of custom prevailing will not on any account be permitted as excuse for an infringement of any of the conditions of the contract or specifications.
40. Important events/construction stages will have to be recorded by contractors in still and digital video format at his own cost and will be handed over to BBJ for record.
41. **WORKING METHOD AND PROJECT MONITORING:**
- 41.1 The contractor shall submit within the time frame stipulated by Engineer-in-charge. The details of actual method to be adopted by contractor for the execution of any item at each of location support. The relevant working drawings as plants and machinery to be used for method handling for approval of Engineer-in-charge, who reserves the right to suggest alteration/modification in proposed method, which shall be binding on the contractor and no claim on account of such changes in method of execution will be admissible.
- 41.2 The contractor shall submit additional program for work commencement of work by preparing bar chart. PERT / CPM chart on computer using MS project for approval of Engineer-in-charge. This program will be reviewed at different stages of work.
42. **DESIGN AND DRAWINGS:**
- 42.1 Contractor will have to collect the site details required for design and submit detailed

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structural design and drawing for any component if required for the foundation, substructure, retaining wall or toe walls etc. incidental to work. Except those components, for which Railway's standard drawing are available, as per the direction of Engineer-in-charge and the same will be submitted to the BBJ in required format duly proof checked by proof consultants of any of IIT's/NITs for final approval of BBJ / railways along with all supporting input & output data with software used in the design & drawing to enable checking by the BBJ / Railway's authorities. Nothing extra shall be paid on this account.

42.2 Contractor will have to drill bore holes for geotechnical investigation for development of design input data of foundations. He may encounter standing/flowing water in river course. Contractor has to develop earthen island/coffer dam for construction of piles/foundations. Same earthen island/coffer dam can be used for exploratory drilling/sampling/data collection/in-situ testing. Payment for such temporary earthen island/coffer dam will be made under relevant SOR/NS item only once. Contractor must organize these activities accordingly.

42.3 The rate for forming an earthen island/coffer dam shall, unless otherwise stipulated, include the cost of its construction, its maintenance for the period of utility and its removal to the extent ordered.

43. **COMPLETION DRAWING:**

On completion of work the contractor will submit completion drawing of the work, structures & bridges covered under scope of contract (as directed by Engineer-in-charge) to the BBJ on C.D. with three sets of hard copies and on reproducible tracing film of 75 micron double matt type of approved quality available in the market for record. The rate includes for submission of completion plan and nothing extra will be paid for this work. If the same is not submitted before or along with final bill then recovery at the rate of 0.2% of the overall gross payment of the contract paid to contractor will be recovered from the contractor's dues. This recovered amount will be released only after receiving of completion drawing within 2 months from the date of passing of final bill to this office after this period; this recovered amount will stand forfeited.

If work is terminated then contractor has to submit completion drawing of the portion of work executed by him, otherwise action as stated above will be taken.

44. **TRANSPORT ARRANGEMENT:**

The work at entire stretch will be supervised by BBJ and two or more railway supervisors, contractor shall provide & maintain proper transport facilities (at least 2 nos road vehicles) for efficient transport of men and material. Timely and adequate transport facilities in the form of well-maintained road vehicle like Ertiga /Scorpio/Tavera/TUV 300/Innova or similar (not older than 3 years) etc. with fuel and driver for 24hrs availability during entire completion period of work. No extra/additional payment will be made to the contractor for this arrangement. In case of contractors failures to maintain these facilities, Rs.1500/- per day per vehicle shall be deducted from running bills as a deterrent. In this regards decision of Engineer in charge shall be final and binding upon the contractor.

45. BBJ can get the work supervised through BBJ Officials or PMC.

46. Contractor will develop Two site offices at his own cost within 1 months from date of issuance of LOA. These site offices can be developed with prefabricated material. Contractor will maintain these site offices throughout the currency of contract, free of cost. He will deploy a suitable person whenever site office is used by BBJ / railway officials. This site office must have the following infrastructure, T&P and other facilities for use of BBJ or railway or PMC officials:

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- i) Office of minimum 50m<sup>2</sup> area with toilet, pantry etc.
- ii) 24-hours lighting arrangement
- iii) Office must be air-conditioned.
- iv) 24-hour watering facility
- v) Dining table set, sofa set, executive /visitors chairs, almirah, 3 computer tables, color printer for A3 size with fax /email etc. of decent make and quality.
- vi) Laptop for office having configuration of OS Window 10 64-bit, display size minimum 14 inches, intel core i3 processor with minimum clock-speed of 2.3 Ghz, 8 GB RAM, 512 HDD capacity, Li-ion 3 cell battery with Computer Data Entry operator. Supervisor in-charge may carry the laptop with him.
- vii) LED display of minimum 50"

No payment whatsoever, will be made to contractor for development and maintenance of site offices. All construction material, accessories, furniture etc. will be the property of contractor after completion of work.

Any delay in setting up of these site offices, which may hamper progress of work will be on account of contractor.

**Note** - The Contractor/Bidder will bear all ancillary expenses required for the project for example provide separate rented accommodation (Lodging and fooding) for BBJ Engineers and Staff.

47. Contractor will deploy following personnel at site, as per approved work plan, minimum number of personnel for the key positions with requisite qualification and experience as mentioned below , in compliance of Clause 26A of GCC with ACS no. 1to6:

Sl No.	Position	Minimum No. of Personnel	Minimum qualification	Minimum Experience in Similar Work [years]
1	Project Manager	1	Graduate in Civil Engineering	10 years, out of which 3 years in-charge of road/ Railway project (For Graduate) , 16 Years out of which 3 years in-charge of Road/Railway project (For Diploma)
2	Sr. Engineers			
	(a) for Bridge concrete& Earthwork etc. works	2	Graduate in Civil Engg.	5 Years
	(b) for Bridge steel work	1	Graduate/ Diploma in Civil/ Mechanical Engg.	5 Years for Graduate, 10 years for Diploma holder
3	Junior Engineer/ Supervisors			
	(a) for Bridge concrete& Earthwork etc. works	4	Diploma in Civil Engineering	5 years
	(b) Bridge steel work	2	Diploma in Civil/Mechanical Engineering	5 years

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4	Surveyor for setting out alignment, layouts and levels periodically	2	Diploma in Civil Engg.	5 years
5	Material Testing-cum-Quality Control Engineer	1	Minimum Diploma in Civil Engg.	5 years
6	Safety Officer	1	Preferably Graduate in any discipline but must have completed Diploma in industrial safety management OR construction management.	5 years
7	Draftsman with knowledge of AutoCAD	1	Diploma in Civil Engineering /AutoCAD	3 years

**Note-**

- a) Project Manager is to be deployed within 30 days of issue of Letter of Acceptance. The program for deployment of other personnel shall be conveyed by BBJ/PMC and personnel shall be deployed within 30 days of the stated requirement. In case of failure to deploy any personnel within 30 days of the stated requirement, a penalty shall be imposed for each day of delay as under:
- (i) Rs 10,000 per person per day for Project Manager & Safety Officer.
  - (ii) Rs 5,000 per person per day for Sr. Engineers, Surveyor & Material Testing-cum-Quality Control Engineer
  - (iii) Rs 3,000 per person per day for other personnel
- b) The decision of the BBJ's Engineer-in-charge as to the period for which required technical staff was not employed by the contractor and as to the reasonableness of the amount to be deducted from the contractor, shall be final, & binding on the contractor.
- c) During Working days (i.e. the days during which technical work is required, maximum as 25 days per month), if technical supervisor is present less than required days in any month, deduction of Rs. 1600/- per day for graduate engineer & Rs. 1000/- per day for diploma holder will be made from the bill of the contractor.
- d) 19.4 On completion/likely completion of activities concerned to a particular personnel, demobilization of that personnel shall be requested by the contractor at least 30 days in advance and demobilization shall be done with the approval of BBJ / Railway/PMC only. In case demobilization is done without approval of BBJ/PMC, the penalty mentioned in sub-clause (b) above, as relevant, shall be imposed for each day of absence of the personnel.

48.

**LIST OF ESSENTIAL MINIMUM EQUIPMENT'S TO BE MAINTAINED AT SITE:**

The contractor shall deploy, the minimum number of equipment for execution of the work as per mutually agreed programme as mentioned hereunder:

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Sl. No.	Equipment Type and Characteristics	Min. Number Required
1	Earth excavation and loading equipment ( Excavator)	2 Set
2	Earth moving equipment ( Dumper)	4 Nos.
3	Earth levelling and grading equipment ( Grader)	2 Nos.
4	Earth compaction equipment( Vibratory Rollers)	2 Nos.
5	Truck mounted water tank/sprinklers	4 Nos.
6	Concrete Vibrating equipment	6 Nos.
7	Total stations	2 Nos.
8	Auto levels	2 Nos.
9	Transit mixers[6 cum]	2 Nos.
10	Fully equipped soil, aggregate and concrete testing Laboratory	2 set
11	Self-loading transit mixer (Fiori)	4 Nos.
12	Weigh batchers and concrete mixers	4 Nos.
13	Gensets of suitable capacity to drive batching plant, lighting, offices, other machinery	As decided with engineer
14	Fabrication workshop with complete set of equipment's	As decided with engineer
15	Suitable capacity concrete pumps and/ or boom placer	As decided with engineer
16	Fully automated/computerized concrete batching plant of minimum 30 cum/hr. capacity, one at each important bridge site	As decided with engineer
17	Cranes	2 Nos.
18	Hydras	2 Nos.
19	JCBs	2 Nos.

**Note:**

- a) Above equipment list is not exhaustive and contractor may have to deploy additional equipment, at his cost, to maintain and achieve the work plan. Deployment will be worked out in consultation with engineer and in case of dispute; engineer's decision will be final. Any equipment not required further can be demobilized with the prior approval of the Engineer.
- b) The records of mutually agreed programme of deployment as well as request for demobilisation of any equipment/plant and approval of the same should be maintained in a register.
- c) The type of equipment specified can be changed by the Engineer depending upon suitability of the equipment as per site conditions with the approval of BBJ concerned subject to that the total rate of production/output of proposed number and type of equipment should be equal to or more than that of the number and type of equipment stipulated in the contract agreement and quality of work is not compromised in any way.
- d) Contractor will prepare a deployment scheme for above equipment's in accordance with agreed upon plan of work and get it approved from BBJ. Demobilization or reduction in machinery can be allowed during the course of work, subject to progress of work not getting hampered. Failure to provide above machinery will result in penalty of Rs. 2000/- per day.
- e) Contractor will arrange to carry out good quality drone survey of various stages of construction at least 3 times in a year, at times advised by Engineer and submit video

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to railway. Also, contractor has to arrange good quality photographs and recording of videos at important stages of construction of the work. Further as per BBJ's Instructions CCTV camera is to be installed as directed by Engineer-in-charge. For this no extra payment will be done.

- f) MINISTRY OF FINANCE, DEPARTMENT OFFICE MEMORANDUM NO-6/18/2019-PPD, DATED 23.07.2020.
- g) Brands of materials in tenders of schedule items based on CPWD- DSR for improvement in quality of works No. 291-W/O/QC/policy, Dated: 22.03.2022.

49. **PENALTIES DUE TO UNSAFEWORK:**

- a) In the event of accident at the work site, a departmental enquiry shall be held and increase it is established that the accident has occurred on account of contractor's negligence or the negligence of his men, penalties up to an upper limit of 10% of the total cost of the work shall be imposed on the contractor.
- b) BBJ reserves the right to terminate the contract with immediate effect in the contractor is found responsible for causing an accident without giving any further notice/notices to the contractor.
- c) In the event of contractor not completing the work or leaving it unsafe at the end of days' work so they may serve speed restrictions if required to be imposed, track shall be attended to by the railway immediately at the contractor's cost without any further notice. In addition, the labour cost recoverable from the contractor, supervision charges @ 12.50% and train detention charges @ Rs.2,000/- every half hour or part thereof shall also be recovered.
- d) In the event of contractor starting the job without proper supervision causing an accident, he may be prosecuted under railway act for lawfully interfering with the railway track in addition to the recovery of Rs.20,000/- or value of actual loss, whichever is less as penalty.
- e) **Field Laboratory:** The contractor shall be required to provide a site laboratory with adequate space for equipment for carrying out testing aggregates, water, cement, sand, and testing of concrete for compressive strength and workability, sieve analysis of aggregates, soil and blanketing materials. OMC and MDD of Earthwork and other parameters. Contractors shall deploy in site laboratory facilities such as computer, communication etc. for analysis of test results, reviewing and reporting of progress of work.
- f) The lab should be manned, managed & maintained by suitable, qualified personnel from the contractor.
- g) Field laboratory shall preferably be located adjacent to the site office of the Engineer and provided with amenities like water supply, uninterrupted electric supply etc. The laboratory should be at least 4.5mx4.5 m in size to have space for the installation of equipment, laboratory tables and cupboards, working space for carrying out various laboratory tests and a curing tank for the curing of samples.

50. **LABORATORY EQUIPMENT:**

The following items of laboratory equipment duly calibrated shall be provided in the field laboratory:

1	Balance 20 kg capacity self-indicating type
2	Electronic Balance 5 kg capacity accuracy 0.5 gm
3	Electric hot plate
4	Glassware's, spatulas, wire gauzes, steel scales, measuring tape, casseroles, karahis, enameled trays of assorted sizes, pestle-mortar, porcelain dishes, gunny

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 (भारत सरकार का एक उद्यम) / (A Government of India Enterprise)

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	bags, plastic bags, chemicals, digging tools like pickaxes, shovels etc.
5	Set of IS sieves with lid and pan 20mm, 19mm, 10mm, 4.75mm, 2 mm 600mic, 425mic, 212mic, 75mic
6	Water testing kit
7	Soil test equipment's
i	Core cutter with dolly
ii	Sand replacement equipment
iii	Liquid limit apparatus & Shrinkage limit apparatus
iv	Stainless steel spatula - 25cm long
v	Frying pans
vi	Stove Janta
vii	Straight edge 300 mm long
viii	Desiccators as per IS-6128
ix	Specific gravity test apparatus
x	Thermostat oven to maintain a temperature
xi	Sodium carbonate
xii	Hammer
xiii	Rapid moisture meter or kot for determination of moisture content
xiv	CBR testing machine
8	First aid box
9.	For aggregates
i)	Flakiness and Elongation Test Gauges. (ii) Sieve sets
10.	For cement and cement concrete
i)	Vicat apparatus for testing setting times
ii)	Slump testing apparatus
iii)	Compression testing machine
iv)	Needle Vibrator

Note: The items and their numbers listed above shall be finally decided by the BBJ Engineer as per requirements of the Project and modified accordingly

**51. RECORDS AND REGISTERS:**

The contractor shall maintain accurate records, plans and charts showing the details and progress of main operation and Engineer shall have access to this information at all reasonable times. The following registers will be maintained at site by the Engineer-in-charge, which will be signed by representative of the Engineer and the contractors:

- i) Site Order Register
- ii) Cement Register
- iii) Steel Register
- iv) Labour Register
- v) Plant & Machinery Register
- vi) Measurement Register
- vii) Material Testing Register
- viii) Material Passing register
- ix) Daily progress register
- x) Cube Testing Register
- xi) Mix Design Register
- x) Check Request Register

**52. SAMPLING & TESTING:**

- a) Various tests with their frequency have been mandated in IRUSS, CPWD Specification, IRS Codes, BIS Codes etc. Contractor shall establish a field laboratory-cum-site office



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at site of work at his own cost. This field laboratory must be equipped with calibrated test equipment's for tests on soil, aggregate, concrete and its components, blanket material, earthwork etc., survey equipment's like TS, levels and keep a minimum set of staff to man this lab to carry out the number of tests required as per specifications for quantum of works as per agreed work plan. He shall ensure that equipment's provided are of latest specification and are in good working order and got calibrated from authorized firm. Contractors shall also provide facilities such as computer, communication etc. for analysis of test results, reviewing and reporting of progress of work. He will provide full assistance to Engineer or Engineer's Representative for testing in field lab. Cost of recurrent calibration, repair, maintenance of these equipment will be borne by contractor.

- b) The contractor shall get certain percentage of samples tested at other approved laboratories/colleges as may be directed by the Engineer-in-charge as confirmatory tests at his own cost. Contractor will arrange to send samples to external testing laboratory and collecting test reports.
- c) Tests which cannot be conducted at contractor's laboratory at site, will be conducted at approved colleges/laboratories as mentioned in these conditions. Complete cost of testing will be borne by contractor.
- d) In exceptional circumstances, BBJ may allow, on request of contractor, to get some tests executed from approved laboratories/colleges, till the laboratory is setup or if the equipment goes out of order, in the interest of work. However, this should be an exception instead of the norm, with an intent only to not allow progress of work to suffer.
- e) Rate of all SOR/NS items is deemed to have been included cost of all testing to be performed as per IRUSS/CPWD Specifications/IRS Codes/BIS Codes either in contractor's site laboratory or in approved outside laboratories/colleges, unless otherwise specified in item or Special Conditions of Contract.

53. **LIST OF APPROVED LABORATORIES FOR TESTING OF ENGINEERING MATERIALS.**  
(Authority- CE/P&D/ALD's letter no.291-W/2/QC/Inspection dated 20.12.2013, 17.09.2015).

A list of approved laboratories for testing of materials is as under:

1. Moti Lal Nehru Regional Engineering College Allahabad
2. Institute of Engineering and Rural Technology, Allahabad.
3. CSP/ N. C. Rly./ Subedarganj, Allahabad.
4. IIT (BHU), Varanasi.
5. KNIT, Sultanpur.
6. HBTI, Kanpur.
7. IIT, Kanpur.
8. Material Test Laboratory, Civil Engg. Deptt., AMU, Aligarh.
9. National Test House, Kamala Nehru Nagar, Gaziabad.
10. IIT, Delhi.
11. Delhi College of Engineering, Delhi.
12. Sri Ram Test House, Delhi.
13. Dayalbagh Engineering College, Agra.
14. Madhav Institute of Technology, Gwalior.
15. Bundelkhand Institute of Technology, Jhansi.
16. Forest Research Institute, Dehradun (For woodwork)
17. Any NABL approved laboratories.

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- 53.1 For any addition /deletion in the above list, approval of BBJ has to be obtained.
- 53.2 Contractor is free to get the material tested from any of the above laboratories, with prior approval of Engineer's representative which will be final. For specific specialized items, tests not being done in above laboratories, decision will be taken by BBJ, on reference from contractor.
- 53.3 The contractors will be fully responsible for the safeguard of the construction material brought at site like cement, steel, aggregate, bricks, T&P etc. BBJ will not compensate for any damage, loss or theft of such material from site.
- 53.4 If in the opinion of the Engineer, equipment's/plants/T&P brought by the contractor are not suitable for the work concerned, the Engineer shall have the right to order the contractor to replace them by suitable equipment's/plants/T&P. In the interest of public convenience, Engineer may insist on a specific way of execution of the work.
- 53.5 Contractor will procure and use materials from IS (BIS) approved firms. Independent tests should also be conducted to ensure that the materials conform to IS (BIS) specifications. This will be done as built in method statements and will be in accordance with relevant codes.
- 53.6 To ensure quality control, test certificate from the manufactures should be produced by the contractors, which should confirm to the relevant specifications/codal provisions.
- 53.7 In case of designed mixes of concrete, the contractor will submit the design of mix duly done by any approved Engineering Institute or Laboratory given in relevant clause in these conditions. Design of the mix will be carefully done from representative sample of aggregate and mix design calculations should be sent to the Engineer-in-charge for his approval. Unit weight of materials shall generally be as per IS-1911 and actual weight proposed to be adopted for designing shall be got approved by Engineer-in-charge.
- 53.8 The Tenderer/s will modify/carryout the mix design to the satisfaction of the Engineer of BBJ, if so, required and get his final approval. Such approved design mix however, does not absolve the tender/s of his/their primary responsibility and obligation regarding the minimum strength to be obtained. Change in source of material will require redesign of concrete. Mix design shall be reviewed as per provisions of Concrete Bridge Code/IS 456 and IS 10262.
- 53.9 It may be noted that payment of excavation in foundation of bridges/retaining wall will be made in accordance with a Good For Construction (GFC) drawing showing the authorized working space for works to be done from outside as specified in Clause 4.2.5 of IS 1200 (Part 1): 1992. This GFC drawing will be approved by BBJ / Railway and decision of BBJ / Railway will be final. Nothing extra will be payable to the contractor for additional extra width or slope beyond authorized working space, he/they may have to excavate for any reasons whatsoever during execution of work. Also, payment for any shoring etc., required, will be paid only as if found necessary and will be paid as shown in approved GFC drawing.
- 53.10 Contractor will provide Three (03) set of leading company's Computer with configuration & all requisite accessories such as LCD monitor of 21", CPU (Intel I-9 processor, RAM 8GB, HDD-1TB, 1 TB Internal Solid State Drive (SSD), DVD writer), Optical Mouse, Multimedia Keyboard, UPS-750VA and Three (03) set of A4 black & white Laser Printer/Scan/Copier for BBJ official use and its will become the property of the BBJ. Nothing shall be paid on this account and no dispute /claim will be entertained on this account. If the contractor fails to provide the computers of above configuration with all requisite accessories, recovery will be

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done as per prevailing market rate.

53.11 The contractor will provide well-furnished one site office of size 4mx6m made with Porta cabin for site supervision from date of actual commencement of work & up to physical completion of work for which no extra payment will be made for this.

53.12 Contractor shall provide, one (01) nos. Total station instrument preferably SOKKIA/TREMBLE with required accessories for execution of work which will become property of BBJ after completion of work for carrying out further maintenance works. Nothing extra shall be paid on this account and no dispute /claims will be entertained on this account. If the contractor fails to provide the above-mentioned instruments of suitable configuration with all requisite accessories as per satisfaction of Engineer-in-charge, the Rs. 10.0 lacs will be withheld from 1st on-A/C's bill which will be released after procurement of the same.

54. **SPECIFICATION FOR CONCRETING:**

54.1 Specifications for concreting:

Specifications given in this part shall apply to the construction of sub structure and super structure & shall be read in conjunction with Special conditions of contract.

54.2 Construction and concreting of sub structure shall conform to the requirements as laid down in Concrete Bridge Code updated to latest Correction slips and IS 456- 2000 and the requirements specified hereunder.

54.3 All concrete work shall be with controlled concrete satisfying the strength and quality requirements and other conditions specified in the codes and specifications mentioned in special specifications. The contractor is responsible for the design of concrete mix and getting it approved by the Engineer.

55.4 Mix design is required to be submitted twice at the beginning of each working season first in October and then in the February. Mix design shall also be reviewed in the event of change in source of cement, sand and aggregate or for any other reasons as and when so required by the Engineer, Contractor is required to carry out concreting work in all types of conditions, dry wet, above water level, below water level, requirement above ground level, below ground level, at all locations and heights as required for the work.

55.5 Design of concrete mix shall be in accordance with any of the methods given in the Indian Standard recommended guidelines for concrete mix design given in "Handbook of concrete mix design" issued by Bureau of Indian Standard.

56.6 Concreting in girders/Box /Slabs shall be organized in such a way that no end joints are poured during the course of concreting. Scheme for girders/ Box /slab concreting shall be submitted by contractor for approval of Engineer-in-charge.

55. **CEMENT:**

55.1 Cost: The cost of cement for the work is included/not included in the rates for Master schedule items of IRUSSOR-2021 mentioned in the tender as per notes/instructions given in IRUSSOR-2021. The cost of cement for the work is included/not included in the rates for NS items as mentioned in the relevant item.

55.2 The BBJ will not supply any cement for the works. The contractor has/ have to procure the cement required for the work from the market and transport the same to the site of work at his/ their own cost including all taxes, octroi etc, and / including all lead and handling etc.

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- 55.3 Purchase: The cement should be purchased by the contractor only from the Authorized / Approved manufacturers or their authorized agent. The contractor should produce the documented proofs such as bill Challan, etc, from such authorized manufactures/ Agents from whom the cement is purchased for every lot of cement brought at site and to be verified by the BBJ's representative. The cement brought at site without such documental proofs will not be permitted to be used in the works.
- 55.4 Storage: The cement as approved by the BBJ's representative will be properly stacked at site in the godown constructed by the contractor at his own cost. The contractors should keep the cement under their safe custody and will be made accessible to the BBJ's representative to physically verify and check at any time. The contractors will be fully responsible for the safeguard of the cement along with other materials and the BBJ will not compensate for any damage, loss or theft of the cement or any other materials at site.
- 55.5 Any delay in procurement of cement will not be considered as cause for granting extension for the date of completion
- 55.6 Quality and testing: The cement used shall be used with the prior approval of the Engineer in accordance with the Para 4.1 of Concrete Bridge Code
- 55.7 The cement should be net weight 50 Kg. In bags, cement bags should be preferably in paper bag/ polyphone bag packing and should bear the following information in legible markings.
- i) Manufacture's Name.
  - ii. Registered Trademark of Manufacture, if any.
  - iii) Type of cement with ISI Code No.
  - iv) Weight of each bag in Kgs.
  - v) Date / Month of Manufacture with Year.
- 55.8 Random specimen samples of cement taken from the lot brought at site should be tested at any authorized / approved Engineering Institute/ reputed laboratory, for its physical and chemical properties as specified in the IS specifications (IS-4031) and any other tests as specified by the Engineer or his representative. Some of the tests which should be carried out are:
- i) Compressive Strength.
  - ii) Initial and final setting time.
  - iii) Consistency.
  - iv) Soundness
- These tests will be got carried out by the BBJ's Representative and the arrangements and cost of tests including cost of cement for testing will be borne by the contractor. Such tests should be done at times when it is found necessary at the discretion of the site Engineer/ his Representative at site.
- 55.9 To ensure quality control test certificate from the manufactures should be produced by the contractors, which should confirm to the relevant specification.
- 55.10 Rejected lot should be removed from the site immediately by the contractors.
56. **CONSUMPTION USE AND ACCOUNTAL (CEMENT):**
- 56.1 The consumption or use of cement in the works will be at the rate of quantities specified for each item requiring nominal mix and as required for design mix.
- 56.2 In case of designed mixes of concrete, the contractors should submit the design of mix duly

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done by any approved Engineering Institute or Laboratory and the cement required as specified in the design should be used to achieve the specified strength of the concrete.

- 56.3 Proper accounts of the cement for receipt, consumption balance etc. should be maintained at site duly verified and signed by the contractors and the BBJ Representative / Engineer. It is entirely contractor's responsibility to safeguard the cement from damage, loss and theft etc. and BBJ will not pay any compensation for any such loss, damage or theft.
- 56.4 In case, the cement consumed in the work is lesser than specified, the cost of such cement used less, will not be paid in the contractor's bill not with-standings the fact that required strength is achieved by less quantity of cement used and also provided such works are qualitatively otherwise acceptable to the BBJ. In case of excess consumption, no extra cement will be paid to the contractor.
- 56.5 The cement should be fresh and generally consumed within three months of its age. If the cement is older than three months, test should be carried out for its lose of strength and other properties and additional/ extra quantity of cement will be used, as decided by the site Engineer, to achieve the required strength. No extra payment will be made by the BBJ/ for such additional quantity used by the contractor.
- 56.6 Cement brought at site by the contractor for a particular work should not be taken to other works/ site without the written approval/ permission of the BBJ's site Engineer.
- 56.7 Any cement left out on completion of works will be the property of the contractor. The contractor will be at liberty to dispose off the left-over cement. BBJ will neither take over the left-over cement nor will compensate the contractor in any manner whatsoever.

57. **SPECIAL CONDITIONS FOR USING CONTRACTOR'S STEEL:**

- a) Cost: **BBJ will supply reinforcement steel only for the works included in this tender. Structural steel will be procured by the Contractor.**
- b) Transport: HSD (TMT) steel bars of various dia. meters for reinforcement in RCC works and for other items of works as required, and structural steel for fabrication items of works will be transported to site by the contractor/s at his/their own cost. Contractor will transport the reinforcement steel form BBJ's designated place to site as per instruction of Engineer –in-Charge.
- c) Code: HSD (TMT) steel shall be used. The steel bars/ structural steel shall confirm to the relevant I.S. specifications. M.S. Bars should confirm to I.S. 432 (Part-I) 1982 and tor steel should confirm to I.S. 1786:2008 in standard lengths.
- d) Storage: The steel brought at site should be properly stacked diameter wise separately and protected from contact with earth water etc. Wherever the treatment of the steel against corrosion is specified, the same should be done as specified in the items and specification. Steel supplied for reinforcement shall be kept free of loose mill scales, loose rust and coats of oil, mud or other material which may destroy or reduce bond till concreting.
- e) Quality And Testing:
- i) All Structural Steel shall be procured as per specifications mentioned in IS:2062. Independent tests shall be conducted, wherever required to ensure that the material procured conform to the specifications.
- ii) These steel 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 basis raw material and having in house iron rolling facilities, followed by production of liquid steel and crude steel, as per Ministry of Steel's guidelines such as SAIL/TATA STEEL/RINL.

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- iii) However, only certain isolated sections of structural steel, not being rolled by ISP's 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 concerned SAG officer of the Zonal Railway on case-to-case basis for this purpose."
- f) (Authority RB L No. 2008/CE-I/CT/8 dated 01.05.2012 and NCR HQ letter No.278-W/CE/C/CTL/Steel dated 06.08.2018)
- g) Rejected material should be removed from the site by the contractor/s.

**58. CONSUMPTION USE AND ACCOUNTAL (STEEL):**

- 58.1 The steel should be used in the work as shown in the approved drawings. Overlaps if necessary, should be provided as required by design & specification.
- 58.2 Proper account will be maintained in the registers regarding consumption, balance etc. duly signed by the contractor/s and Railway's representative.
- 58.3 For the purpose of payment, linear measurement of reinforcement used for the work will be converted into mass/ unit weight. No rolling margin will be considered. **The cut pieces, wastage and the left-out reinforcement steel will be returned to BBJ with reconciliation statement at BBJ's designated place by the contractor as directed by Engineer-In-Charge.**
- 58.4 The steel brought at site by the contractor for a particular work should not be shifted to other works/ site without the written approval/ permission of the BBJ's site Engineer.
- 58.5 Welding of reinforcement will not be permitted except in special circumstances under the written approval of the Engineer.
- 58.6 Every bar shall be inspected before assembling on the works and any defective, brittle, levelling rusted or burnt bars shall be removed. Cracked ends of bars shall be cut out.

**59. PLACING SUPPORTING AND CLEANING:**

- 59.1 Binding wire shall be used as approved by Engineer in charge. All frames crossing one another shall be bound with this wire twisted tight to make the skeleton on network rigid so that the reinforcement is not displaced during placing of concrete. All ends of binding wires shall be carefully turned inside so that they do not project out of concrete to cause starting of rusting action.
- 59.2 Cleaning: Bars must be cleaned before concreting commences of all scale, rust or partially set concrete which may have been deposited there during placing of a previous lift of concrete.
- 59.3 The bars shall be cleaned with dry gunny bags if they are coated lightly with rust or other impurities. On no account shall the bars be oiled or painted nor shall mould oil used on the formwork be allowed to come in contact with the bars. Cement wash to bars will not be permitted.
- 59.4 Cover/Cover Blocks for reinforcement: The cover shall be uniform. Minimum clear cover shall be 50 mm or otherwise mentioned in the drawing. Suitable size of cover blocks of the same grade as that of concrete shall be cast in controlled conditions with binding wire fixed initially. All cover blocks shall be of cement and of the same strength as that of the surrounding concrete and properly compacted and vibrated on a vibrating table. They shall be cured for

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a minimum period of 21 days before they are used in the works.

59.4 Placing and Spacing of reinforcement shall be according to drawings supplied by BBJ. However, the spacing shall be sufficient to facilitate easy concreting and compaction. Proper detailing is essential as any cracking caused by defective detailing will cause Corrosion. All reinforcement shall be placed and maintained in the positions shown on the drawing. The Contractor shall provide approved types of supports as specified on the drawings for maintaining the top bars of the slab in position during concreting.

59.5 Overlaps for main reinforcement of piles will be paid taking standard length as 6.0 meter keeping in view difficulty in placement of 12 meter standard lengths reinforcement bars due to OHE etc. For all other works standard lengths of 12 m only shall be considered for payment of overlap of main reinforcement until unless mentioned otherwise in the relevant items.

**60. AGGREGATES:**

60.1 Only aggregate conforming to IS 383-1970 shall be used in concrete works whether it be plain or RCC. The provisions in IS-2386-1983 (Pt.-2) shall prevail when dealing with deleterious material and organic impurities.

60.2 Prior to deciding on the source for procurement of constituents of concrete, viz. Fine and coarse aggregate, the contractor shall specifically assess the soluble chloride any sulphate contents of fine and coarse aggregates (at source) and their permissible limits shall be got approved by BBJ, Regular checks as directed, shall also be carried out not only at the source of supply (of such materials) but also prior to their use in the permanent works to ensure that the aggregate do not contain impurities exceeding the permissible limits.

60.3 The special requirements to be satisfied are as under: -

	<b>Fine (Upper limits)</b>	<b>Coarse (Upper limits)</b>
1	Chloride content (Cl.) Max	0.04 % by wt.(Acid soluble)
2	Sulphate (SO <sub>3</sub> )- Max	0.04 % by Wt. (Acid Soluble)
3	Potential alkali reactivity	Absent
4	Water absorption- Max	3 % by wt.
5	Particle shape Mix	Shape Index 53% or Angularity N0.9
6	Mica-Maximum	1%
7	Silt-contents	3 % by weight
8	Soundness with Na <sub>2</sub> SO <sub>4</sub> MG SO <sub>4</sub>	10% Max 15 % maxi
9	Particles less than 75micron -Max.	3 % by wt.

60.4 The other requirement as regard to the overall limits of harmful salts contents, physical properties of aggregates, deleterious substances in aggregate and concrete etc. shall conform to the requirements of IS-2386(Part -I & II)-1963.

60.5 However, the final decision of acceptance criterion/rejection for aggregate to be used for permanent works shall lie with BBJ.

**61. WATER:**

Water used for mixing and curing shall be clean and free from injurious amount of oils, acids, alkalis, salt, sugar, organic, material or other substances that may be deleterious to concrete or steel. Potable water is generally considers satisfactory for mixing and curing of concrete.

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48.1 The water to be used for these purpose should be conforming to clause 5.4 of IS- 456. 2000. The permissible limits of solids in water tested as per IS.-3025 are given below:

<b>Sr. No.</b>	<b>Type of Solid</b>	<b>Permissible Limits</b>
1.	Organic	200 Mg per Litre
2.	In Organic	3000 Mg. Per Litre
3.	Sulphate (as SO <sub>3</sub> )	400 Mg. Per litre
4.	Chlorides (as Cl)	2000Mg per liter for concrete not containing embedded steel & 50 Mg per Litres reinforced concrete work
5.	Suspended matter	2000 mg. Per Litres.

62. **49.0 ADDITIVES/ADMIXTURES**

If contractor desires to use any additives/ admixtures from the consideration of strength and workability, it should be in accordance with Para No. 4.4 of IRS Bridge Code Of Practice For Plain, Reinforced And Prestressed Concrete for General Bridge construction and extra cost of such additives/ admixtures will be borne by the contractor and for which no extra payment will be admissible.

63. **FORM WORK AND FALSE WORK:**

63.1 Form work and false work are very important for all concrete structures in question for these have influence on strength and durability of the structures. For this reason form work must be correctly designed and installed. The design of the form work shall take in to account the required surface conditions also (appearance compatibility with the required finish). This form work and false work together must provide safe working conditions. Safe access must be provided using additional scaffolding as necessary.

63.2 Design: The choice of formwork and false work structure is very important; the majority of defects and accidents are attributable to structural deficiencies of form work. The strength and stability of formwork, false work shall be designed for the loads which they are liable to experience in service by method appropriate to their constituent materials. The design shall be checked by calculation, testing, application of accepted rules, and must be carried out by competent personnel. Formwork shall be so designed that it can be correctly removed without damage to the concrete. Consideration should be given.

1. To the stresses due to the weight of the concrete and due to any imposed loads.
2. To the striking operations.
3. To environmental conditions.

63.3 The loads and pressure to which form works and false works are exposed originate mainly form the weight of concrete (specially the horizontal thrust component of fresh concrete) the weight of the form work itself, the laying and fixing of reinforcement, load transfer on prestressing and as a result of wind, heat fluctuations, ground settlement etc. & therefore, it shall be properly considered in design of form work.

63.4 The deformations of work shall be compatible with the tolerance required of the structure and shall not adversely affect its behaviour. Stiffening arrangements shall be provided as per design requirements.

63.5 **Compatibility with Concreting Operation:**

- a) Formwork and false work shall be compatible with the method of placing and Vibration envisaged, with the requirements and with the curing scheduled for the concrete.
- b) For vibration through the form work, excessive energy losses through the support (Plastic suspension of the shuttering) should be avoided.



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63.6 Tightening of Formwork

- a) The form work shall be designed to prevent loss of material during concreting, particular care must be exercised to ensure the grout tightness of the joints between panels of the sheeting and between it and hardened concrete.
- b) Joints can be made grout-tight by ensuring proper contact between the edges of the panels, the shape of which may have been specially designed. In some cases, joint will need to be sealed with compressible gaskets or tapes.

63.4 Fixing the forms

- a) Where devices for holding the form work in place pass through the concrete these shall not affect the concrete.
- b) Ties and spacers left in-situ shall not impair either the durability or the appearance of the structure (For instance by leaving traces of rust or as a passage for water).
- c) Erection Supports: Foundation, false work and form work shall be positioned by skilled personnel in accordance with plans and specifications.
- d) Assembling False And Formwork: Particular attention must be paid to the making of structural joint, transmission of loads, structures equilibrium and resistance to bucking and subway.
- e) Tolerances: Formwork shall be so constructed that the finished concrete is within the required tolerances. Cumulative tolerances shall be considered as well as tolerances on single member
- f) Preparing The Form Work faces: The sheeting surface intended to come in contact with freshly made concrete shall be clean. Approved releasing Agent shall be applied in thin uniform layer and the concrete should be placed soon enough after this to prevent loss of its effectiveness.

63.5 Control of Formwork:

- a) Indicator should be installed at critical points to detect excessive deflection of the form work.
- b) Forms should be anchored to the props below so that up or lateral movement of any part of the forms will be prevented.
- c) Where there is a possibility of movement, means of adjustment (welded or jacks) should be provided to permit realignment or readjustment of props.
- d) Where the form work is trafficked by operatives or equipment, traffic should neither cause significant deflection nor bear directly on reinforcing steel.
- e) During and after concreting, but before stiffening of the concrete, form work systems should be checked for position. Appropriate adjustments should be made promptly where necessary. If during concreting, any weakness develops or Form work shows any undue settlement or distribution, the work shall be stopped and remedial action taken. Form work shall be continuously watched so that any corrective measures found necessary may be taken always work to be done under safe conditions and have a method of communication with concrete placing crews in case of emergency.
- f) Striking time: Forms should be retained in place until the concrete has hardened sufficient to withstand, without damage, the stresses imposed
- g) Striking Methods: Form work shall be struck, when the concrete is sufficiently hard, in accordance with the stages of construction as planned as without impact loading.

63.6 Stability:

Removal of the shoring supports should take into account of the time needed for adequate hardening for the concrete the support and of that on which they rest Retention of certain shoring elements may also be dictated by the general stability of the structure (wind-bracing).

64. **51.0 MIXING:**

Mixing shall conform to the requirements in Clause 9.3 and 9.3.1 of IS 456-2000.

**65. COMPACTION OF CONCRETE:**

- a) Power vibrators including surface vibrator and form vibrator shall be used for compacting concrete.
- b) All concrete members shall be compacted by vibration; generally internal vibrators shall be used on all sections that are sufficiently large to admit them.
- c) Vibrator shall have operating frequency of at-least 3600 impulses per minute. Higher frequencies up to twice the minimum are preferred.
- d) The following techniques shall be followed for vibrations.
  - i) Vibrators shall be distributed so that the concrete becomes a uniformly dense and plastic mass.
  - ii) Vibrators shall be used for compaction only and not for moving concrete.
  - iii) For horizontal and vertical operations of vibrators, the spacing of points of vibration shall be such that the zones of influence overlap.
- e) For concrete deposited in layers the vibrators shall be inserted vertically and allowed to sink due to its own weight to the bottom of the layer and be slowly withdrawn. For succeeding layer, the vibrator shall penetrate the surface of the previous layer.
- f) Compaction shall be according to clause 12.3 of IS.456-2000.

**66. CURING:**

- 66.1 Special attention shall be given to curing of concrete in order to ensure maximum Durability and to minimize cracking.
- 66.2 Concrete surface shall be kept continuously wet for a period of at least 15 days. Rapid lowering of concrete temperature, which may result in thermal shock, shall be avoided. Contractor will make all arrangement for curing of fresh concrete as per instructions in IS: 456-2000 or Concrete Bridge Code as applicable. If during inspections, it is found that curing is not being ensured, entry will be made in Site Order Book and penalty of Rs. 5000/- will be imposed for each incidence. Decision of Engineer will be final in this regard.
- 66.3 All concrete work/RCC work/Brick work in cement mortar plaster/pointing etc. shall be continuously cured for the prescribed period as per direction of the Engineer.
- 66.4 Curing shall be done by covering the newly laid concrete with gunny bags and keeping them wet constantly.
- 66.5 Contractor will also have to, arrange for curing by approved curing compounds, steam curing in certain cases during the progress of work as directed by the Engineer-in-charge. The rates shall include the cost of all such arrangements.
- 66.6 In case BBJ representative is not satisfied with the arrangements and is of the opinion that an effective robust system of water curing is not in place and rectification in line with curing related instructions are not being followed or adequate water-based curing is not feasible due to any reason, he may:
  - a) All the concrete cube test cubes to also be placed on the structure at suitable location as decided by the BBJ, being cured and not in a curing tank, to closely simulate the actual curing being obtained.
  - b) Require the contractor to adopt membrane curing (curing compounds) and / or
  - c) Require additional confirmatory tests for concrete strength finally obtained by taking out cores or suitable non-destructive tests.
  - d) Decision of BBJ will be final in this matter and no extra payment will be made.
- 66.7 Even after repeated imposition of penalty contractor does not carry out curing in proper

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manner, Engineer may stop the work till rectification is made or undertake the curing through another agency/labour without any notice to the contractor at the cost of the contractor. The cost incurred along with 2% incidental charges and supervision charges @ 12 ½% of the cost will be debited to the contractor. Intimation of the employment of another agency for curing will be given to the contractor as soon as possible. This intimation in writing to the contractor under the hand of the Engineer-in-charge of the work shall be conclusive evidence of the employment of another agency.

67. **SAMPLING, TESTING & ACCEPTANCE CRITERIA:**

Sampling & Testing of the concrete cubes shall be conducted for all concrete works as per clauses of IS456 and IRS Concrete Bridge Code. The specimen will be tested in a field and occasionally in reputed Government-testing laboratory, in the presence of BBJ's representative and the report shall be binding on all parties concerned. The quoted rate for concrete works would be deemed to include the cost of casting, curing specimens as well as testing charges. For field testing, calibration of probing ring will be arranged from reputed testing house.

68. **PUMPS AND PLASTICISER:**

68.1 Additives containing calcium chloride are forbidden in concrete.

68.2 Approval of an expert agency suggested by the BBJ shall be obtained prior to the use of admixtures or super - plasticizers if proposed by the Tenderer / Contractor. The contractor shall have to furnish the details/ chemical ingredients etc. duly tested for the approval of Engineer in-charge.

68.3 When concreting under water, the mix shall contain 10% extra cement than for a corresponding mix for concreting in the dry.

68.4 Transporting and placing, shall be according to Clause 12 of IS 456-2000. Transporting of the concrete shall be done so as to ensure monolithic and dense concrete without hollows honeycomb needing thereafter.

68.5 In case concrete is planned to be poured with the use of the concrete pumps as per provisions of I.S. code / American code. The concrete mix shall be designed and got approved by Engineer including use of particular plasticizer. The cost of plasticizer and extra cement, plant, fuel etc. if required, will be supplied by the contractor and for which no extra payment will be made.

69. **PLAIN/REINFORCED CEMENT CONCRETE:**

69.1 These items of work envisage cement concrete works (of approved design mix as specified) as appropriate in foundation and other components of the structure below ground level and above G.L.

69.2 56.2 For the purpose of determining the quantities of the work the average ground level shall be determined by the Engineer or his representative as related to the original ground levels with the periphery of the work, his decision in this regard being final and conclusive.

69.3 The measurement for the payment shall be worked out to the nearest 0.01m<sup>3</sup> with the size of the cement concrete elements being determined as per the dimension specific in the BBJ's drawings/requirements as directed by the Engineer or his representative without any deductions for the Anchor rods or Dowel bars or the stone ware / A.C. pipe fixed as weep holes.

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**70. SPECIFICATIONS FOR STEEL GIRDER & FABRICATION WORK:**

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

**70.1 Indian Railway Standard Codes and Specifications:**

- (i) IRS : Bridge Rules
- (ii) IRS : Welded Bridge Code(1972)
- (iii) IRS : Steel Bridge Code
- (iv) IRS : B1-2001 for Fabrication and erection of steel bridge girders.
- (v) IRS : M-28 Specifications for electrodes.

**70.2 Indian Standard Specification**

(i)	IS :2062-1999	Specification for structural steel
(ii)	IS : 814-1961	Specification of covered electrodes for manual metal arc weld
(iii)	IS :9595-1980	Specification for metal arc welding of carbon & carbon magnese steel.
(iv)	IS : 816-1968	Specification for metal arc welding for general const. in mild steel
(v)	IS : 102	Specification for ready mixed paint brushing red lead non setting priming
(vi)	IS : 123	Specification for ready mixed paint brushing, finishing
(vii)	IS : 2004	Specification for carbon steel forging
(viii)	IS: 822	Code of practice for inspection of welds
(ix)	IS : 1852	Specification for rolling and cutting tolerances for hot rolled steel
(x)		Specification of submerged arc welding

In addition to above any other IS or IRS specification as applicable and approved by Railway.

**71. SPECIFICATIONS FOR EXPANSION JOINTS**

- 71.1 This item includes designing supplying providing and fixing in position the approved type of expansion joints for ROB/Bridges.
- 71.2 The item includes all lead, lift, testing charges and work at all location and inclusive of all material labour for fixing the joint at required and nominated place.
- 71.3 The measurement will be for the exact quantity used on work and not the part which is left over or left after fixing the joint.
- 71.4 Contractor shall take prior approval from BBJ's Engineer in charge after submitting details and drawing.
- 71.5 The expansion joints at fix end and free end shall be provided according to the details shown on the approved drawings and in presence of manufacturer's representative.
- 71.6 Suitable arrangement to prevent ingress of ballast inside ballast retainers shall be provided as shown the drawing.
- 71.7 Expansion joint shall be provided for full width of super structure and ballast retainer.

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- 71.8 Inspection: Expansion joints shall not be used without the proper inspection certificate to be issued by the inspecting authority, or any representative as directed by the Engineer in charge, certifying the approval of expansion joints. Testing charges including cost of material shall be borne by the contractor.
- 71.9 The expansion joints and accessories thereof shall be subjected to all the specified tests as per relevant standard specifications on raw materials as well finished products in presence of Engineer in charge or his authorized representative at the manufacturer's works or at other approved laboratory as decided by Engineer in charge.
- 71.10 The contractor shall therefore, select a suitable expansion joints manufacturer having complete plant testing facilities so that the expansion joints under manufacturer can be tested at the place of manufacturer itself. Test certificates for the steel sections shall also be submitted by the manufacturer to the inspection agency.
72. **PRECAST RCC/PSCUNITS:**  
Concreting of the pre-cast units shall be done in right sequence and pouring shall be done in an approved manner in once complete operation. All holes for holding down bolts for temporary lifting arrangement, fixing ladders, ducts, vents, anchorage cones, sheaths etc. shall be provided in an approved manner according to the drawing. All pre-cast concrete unit shall be well vibrated, top surfaces of slab being finished with vibrating screens or plates to ensure a properly closed surface. All pre-cast units shall be moulded to exact shapes, sizes and dimensions as shown in the approved drawings or as instructed by the Engineer.
73. **PILE FOUNDATIONS:**  
Construction of bored pile foundations shall be strictly in accordance with the stipulations made in the building digest CBRI Indian 56 for bored piles for foundation and IS 2911-1979 part-I sec.2&3.
74. **WELL FOUNDATION:**  
Please refer concern IRS Code/IRC Code/IS Code for designing and execution purpose.
75. **READY MIX CONCRETE:**  
Indian Railway Standard Code of Practice for Plain, Reinforced and Pre-stressed concrete for General Bridge Construction (Concrete Bridge Code)  
  
Note: Based on Correction Slip No. 3 dated 01.08.2000 to Concrete Bridge Code 1997. RDSO Guideline (BS-23) shall be referred on use of Ready -mix Concrete.
76. **Note:**
- 76.1 In case of any disputes regarding interpretation of any of the above clause, decision of the BBJ shall be final and binding on the Contractor.
- 76.2 The work will be executed under the supervision of Railway / BBJ.
- 76.3 Supply of all materials will be as per Railway's approved list
- 76.4 All types of testing will have to be carried out as per Railway / BBJ instruction.
- 76.5 In case of any dispute arise, Railway / BBJ's decision will be final.
- 76.6 BBJ may provide Tools, tackles, Plants and equipment (Hydraulic Crane, Compressor, DG set etc.) to the contractor as per availability and as per requirement of the BBJ's Site In Charge. No extra claim will be made by the contractor, if BBJ fail to provide Tools, tackles,

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Plants and equipment (Hydraulic Crane, Compressor, DG set etc.) to the Contractor.

- 76.7 This contract is based on Railways tender no. Br-JHS-2024-04 dated 08/04/2024 and all the terms and conditions of Railways tender will be applicable to the agency except the price part

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**Annexure-A**

**DECLARATION BY AUTHORISED SIGNATORY OF BIDDER**

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

\_\_\_\_\_  
(Write Name and Designation of Officer of BBJ inviting the Tender)  
The Braithwaite Burn And Jessop Construction Co. Ltd.  
(A Government of India Enterprise)  
27, Rajendra Nath Mukherjee Road,  
Kolkata – 700001

Dear Sir,

Sub: **Declaration by Authorised Signatory regarding Authenticity of submitted documents.**

Ref: 1) NIT/Tender Enquiry No. & Date: .....  
2) All other pertinent issues till date

I/We, hereby certify that all the documents submitted by us in support of possession of "Qualifying Requirements" are true copies of the original and are fully compliant required for qualifying / applying in the bid and shall produce the original of same as and when required by The Braithwaite Burn And Jessop Construction Co. Ltd.

I / We hereby further confirm that no tampering is done with documents submitted in support of our qualification as bidder. I / We understand that at any stage (during bidding process or while executing the awarded works) if it is found that fake / false / forged bid qualifying / supporting documents / certificates were submitted, it would lead to summarily rejection of our bid / termination of contract. BBJ shall be at liberty to initiate other appropriate actions as per the terms of the Bid / Contract and other extant policies of The Braithwaite Burn And Jessop Construction Co. Ltd.

Yours faithfully,

**(Signature, Date & Seal of Authorized Signatory of the Bidder)**

**Date:**