

SCOPE OF SUPPLY AND WORK

1.0 General

The scope of work shall include the complete **design, proof checking, preparation of detailed drawings, manufacture, testing, inspection, packing, transportation, supply, delivery at different sites, supervision during installation, maintenance support and submission of all technical documents** for Rocker & Roller and Spherical Bearings required for Bridge No. 16, 391 & 50 under the Gorakhpur-Valmiki Nagar Doubling Project, Uttar Pradesh, in accordance with the relevant RDSO Drawings, IRS Specifications, IRC Codes, EN 1337, BS 5400 and other applicable standards.

The scope shall also include all incidental works necessary for satisfactory completion of the contract, whether specifically mentioned herein or not.

2.0 Scope of Supply

The Manufacturer shall design (where applicable), manufacture, test, inspect and supply the following:

(a) Rocker & Roller Bearings (02 Span Sets of 30.5M Span and 18 Span Sets for 61.0M Span).

Manufacture, testing, inspection, packing, supply and delivery at Bridge No. 16 of Rocker & Roller Bearings conforming to:

- RDSO Drawing No. RDSO/B-17182/3 (Alt.-3) for 61.0M Span – **18 Span Sets.**
- RDSO Drawing No. RDSO/B-17164 (Alt.-3) for 30.5M Span – **02 Span Sets.**

complete with:

- Anchor Bolts
- Anchor Pins
- Embedded components wherever applicable

excluding Saddle Turned & Fitted Bolts complete with Nuts & Washers.

One span set shall consist of:

- Two (02) Fixed Bearings
- Two (02) Expansion Bearings

(b) Spherical Bearings – 31 Span Sets, comprising **17 Span Sets for Bridge No. 391** and **14 Span Sets for Bridge No. 50**. BBJ reserves the right to direct delivery of any quantity to any other bridge/project location during execution of the Contract, without any additional financial implication to BBJ.

Design, proof checking, preparation of drawings, manufacture, testing, inspection, supply and delivery of Spherical Bearings conforming to:

- IRC:83 (Part-IV)
- IRS Bridge Substructure Code BS-102 (Rev.-1)
- EN 1337
- BS 5400
- All Applicable RDSO Drawings (Series no. RDSO/B-17182/R (Alt-6) to RDSO/B-17182/17) etc.
- Any other wherever it may be applicable.

One span set shall consist of:

- One Fixed Bearing
- One Longitudinally Guided Bearing
- One Transversely Guided Bearing
- One Free Bearing

3.0 Design and Drawings

The Manufacturer shall:

- Prepare detailed design calculations and approval from Railway before manufacturing.
- Prepare General Arrangement Drawings.
- Prepare Manufacturing Drawings.
- Prepare Installation Drawings.
- Prepare Bearing Setting Plan.
- Prepare Welding Details wherever applicable.
- Prepare Material Specifications.

The complete design shall be based on the loading data furnished by BBJ/Railway.

Approval of drawings by BBJ/Railway shall not relieve the Manufacturer of its responsibility regarding adequacy of design, structural safety and performance.

4.0 Proof Checking

The design and drawings of Spherical Bearings shall be proof checked by IIT or any other institution/agency approved by BBJ/Railway. All expenses towards proof checking shall be included in the quoted rates.

5.0 Quality Assurance

The Manufacturer shall prepare and obtain approval for:

- Quality Assurance Plan (QAP)
- Welding Procedure Specification Sheet (WPSS)
- Welding Procedure Qualification Record (WPQR)
- Welder Qualification Records
- Stage Inspection Plan
- Inspection & Test Plan (ITP)

prior to commencement of manufacture.

6.0 Manufacturing

Manufacture shall include but not be limited to:

- Procurement of raw materials
- Machining
- Heat treatment
- Fabrication
- Assembly
- Surface preparation
- Protective coating
- Corrosion protection
- Final assembly
- Identification marking
- Packing

All materials shall conform to approved specifications.

7.0 Inspection and Testing

Inspection shall be carried out by RDSO/ RITES/ KRCL (Konkan Railway)/ Railway or their authorised inspection agency.

The scope shall include:

- Stage inspection
- Dimensional inspection
- Material testing
- Mechanical testing
- Chemical testing
- Hardness testing

- Load testing
- Functional testing
- Sliding friction test (for spherical bearings)
- Rotation test
- Coating thickness measurement
- Final inspection

The Manufacturer shall provide all testing facilities without additional cost. Repeat testing due to rejection shall be at the Manufacturer's cost.

8.0 Packing, Transportation and Delivery

The Manufacturer shall:

- Pack each bearing adequately against transit damage.
- Clearly mark each bearing.
- Protect machined surfaces.
- Arrange transportation.
- Deliver bearings to the designated bridge site(s).

Transit risk shall remain with the Manufacturer until acceptance at site.

9.0 Technical Documentation

The Manufacturer shall submit:

- Approved drawings
- Design calculations
- Proof checking certificate
- Material Test Certificates
- Inspection Certificates
- Load Test Reports
- Coating Test Reports
- Guarantee Certificate
- Warranty Certificate
- Packing List
- Dispatch Documents

Three hard copies and one editable soft copy shall be supplied.

10.0 Supervision During Installation

The Manufacturer shall depute experienced engineers for supervision during installation.

The scope shall include:

- Verification of bearing levels
- Verification of pedestal dimensions
- Checking anchor bolt locations
- Verification of bearing orientation
- Supervision of lifting and placement
- Alignment checks
- Setting of bearings
- Final inspection
- Certification before casting/grouting
- Certification after installation

Necessary reports shall be submitted to BBJ/Railway.

11.0 Maintenance Support

The Manufacturer shall provide:

- Maintenance Manual (the Manufacturer to get the same approved by BBJ/Railway)
- Inspection Manual
- Replacement Procedure
- Recommended Maintenance Schedule
- Lubrication Schedule
- Troubleshooting Guide

The Manufacturer shall also impart training to BBJ/Railway personnel, if required.

12.0 Warranty and Defect Liability

The Manufacturer shall warrant that all bearings supplied are free from defects in:

- Design
- Material
- Manufacture
- Workmanship

The Defect Liability Period (DLP) shall be **thirty-six (36) months** from the date of supply of the complete quantity at the designated site or **twenty-four (24) months** from the date of acceptance/commissioning/CRS inspection, whichever is earlier.

Any defect noticed during the DLP shall be rectified or defective bearings replaced by the Manufacturer at its own cost.

13.0 Design Service Life

The Manufacturer shall clearly declare the **design service life** of the bearings in the bid. The bearings shall be designed to achieve the declared service life under the specified loading, environmental conditions and maintenance requirements in accordance with the applicable RDSO/ IRS/ IRC specifications.

14.0 Insurance

The Manufacturer shall obtain and maintain Transit Insurance covering the full replacement value of the bearings in favour of BBJ and/or Railway until successful delivery, installation and acceptance of the bearings.

15.0 General Responsibilities

The Manufacturer shall:

- Comply with all applicable RDSO, IRS, IRC, BIS and international standards specified in the tender.
- Coordinate with BBJ, Railway, RDSO, KRCL (Konkan Railway), RITES and other inspection agencies.
- Replace rejected bearings at no additional cost.
- Attend all inspections whenever required.
- Provide all technical assistance during execution.

मनीष कुमार
Manish Kumar
निदेशक/पुल एवं संरचना-II
Director/B&S-II



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Government of India-Ministry of Railways
Research Designs & Standards Organization
Lucknow- 226011
Phone / Fax : 0522-2465704

संख्या: CBS/DOW

दिनांक: 14.05.2026

Chief Bridge Engineer
North Eastern Railway,
Gorakhpur.

विषय: Request for providing Load data of spherical bearing for 61.0m OWG.

संदर्भ: W/247/Con/Br/CAO-C-NER/ENGG/DYCE-BR-GKP-01-2025/236 dated 22.04.2026.

1. In reference to above, it is to convey that for the purpose of design & drawing of spherical bearing, the details of bearing forces (unfactored) for individual bearing shall be as follows:

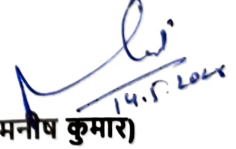
Load on Bearing of 61.0m span (25T Loading)

Type	Vertical Force (T)	Longitudinal Force (T)	Transverse Force (T)	Translation (mm)		Rotation (Rad)
				Longitudinal	Transverse	
Fixed Bearing	322	63	54	0	0	0.004
Longitudinal Guided Bearing	322	0	54	-42	+42	0.004
Transverse Guided Bearing	322	63	0	0	0	±3
Free Bearing	322	0	0	-42	+42	±3

2. However, it is informing that RDSO also has to develop the standard design of spherical bearings for 61.0m span, utilizing UHMPWE as the sliding material as per IRC 83 part-IV 2015 as per annexure attached. Therefore, Zonal Railways is requested to kindly do the design of spherical bearing and send the design details to RDSO for approval so that RDSO can approve and issue it as a standard drawing.

This is for your kind information and necessary action please.

DA: as above


(मनीष कुमार)
(Manish Kumar)
निदेशक/पुल एवं संरचना-II
Director/B&S-II

[On Non-Judicial Certificate of Rs. 100/- minimum]

WARRANTY CERTIFICATE

We, _____ (Name and Address of the Manufacturer), hereby warrant that the Spherical Bearings manufactured and supplied by us to The Braithwaite Burn and Jessop Construction Company Limited (BBJ), (A Government of India Enterprise) having its Registered Office at 27, Rajendra Nath Mukherjee Road, Kolkata – 700 001 against Purchase Order No. _____ dated _____ for the following projects:

- **Bridge No. 16 - Bakulha Project Site**, Near Bakulaha Railway Station, Dist.- Ballia, U.P-277208
- **Bridge No. 391 – Ramnagar Project Site**, Chowka Ghat, near Ghagraghat Railway Bridge, Barabanki, Uttar Pradesh – 225201; and
- **Bridge No. 50 – Paniahwa Project Site**, between Paniahwa and Valmiki Nagar Stations, Uttar Pradesh – 274801.

are manufactured from sound and defect-free materials and conform to the applicable specifications, approved drawings, and contractual requirements.

We further warrant that the bearings are free from defects in design, material, manufacturing, workmanship, and quality, and that appropriate quality assurance procedures have been followed at every stage of manufacture.

The bearings shall perform satisfactorily for a period of **Thirty (30) Years** from the date of commissioning under normal design loading, normal traffic conditions, and routine maintenance.

During the warranty period, should any defect attributable to defective design, material, manufacturing, or workmanship be detected, we shall, at our own cost and without any financial implication to BBJ, promptly repair or replace the defective bearing(s), either in part or in full, as may be required.

This warranty shall not apply to defects or damage arising due to theft, pilferage, vandalism, fire, flood, earthquake, war, riots, acts of terrorism, or any other force majeure event beyond our reasonable control.

Details of Materials Supplied

Sl. No.	Description	Capacity	Quantity
1	Free Spherical Bearing	322 MT	_____ Nos.
2	Guided (Longitudinal) Spherical Bearing	322 MT	_____ Nos.
3	Guided (Transverse) Spherical Bearing	322 MT	_____ Nos.
4	Fixed Spherical Bearing	322 MT	_____ Nos.
	Total		_____ Nos.

We hereby certify that the above declaration is true and correct and is issued in accordance with the terms and conditions of the Purchase Order.

For _____

(Manufacturer)

Authorized Signatory

Name: _____

Designation: _____

Date: _____

Place: _____

Company Seal

PROFORMA OF BANK GUARANTEE FOR SUBMISSION OF EMD BY BIDDER

(To be stamped in accordance with the Indian Stamp Act)

Ref: No. _____ Bank Guarantee No. _____ Date _____

To

The Braithwaite Burn And Jessop Construction Company Limited,

(A Government of India Enterprise)

Registered Office –

27, R.N.Mukherjee Road,

Kolkata-700 001.

Dear Sir(s),

This guarantee executed this ____ day of _____, 201__ by

_____, **BANK**, having its Registered Office at

Pin Code - _____, and acting through its branch office at _____, Pin Code - _____

(hereinafter referred to as **“the Bank”**) in favour of **THE BRAITHWAITE BURN AND JESSOP CONSTRUCTION COMPANY LIMITED**, a Government of India Enterprise and a company incorporated under the Companies Act, having its registered office at 27, R.N.Mukherjee Road, Kolkata – 700001 (hereinafter referred to as **“the Principal”**, which expression shall include its successors and assigns).

WE the Bank have been informed that **M/S.** _____, having its Registered Office at _____

_____, Pin Code - _____, (hereinafter referred to as **“the Bidder”**, which expression shall include its successors and assigns) intends to submit to the Principal its Tender (hereinafter called **“the Tender”**) for the execution of _____ (**name of the Contract**) under invitation for Tender(s) No. _____ dated _____.

Continued...

WHEREAS, the Bidder is required to furnish Earnest Money Deposit (EMD) for the sum of Rs. _____ /- (Rupees _____ only) in the form of Bank Guarantee, according to the Principal's condition of the Tender, to be issued in favour of the Principal for a period of _____ months (i.e. upto _____).

WHEREAS we _____ the Bank have been requested by the Bidder, agreed to give this Bank Guarantee of Rs. _____ /- (Rupees _____ only) for submission of EMD in favour of the Principal and we the Bank as the Guarantors are in agreement to do so.

NOW THIS BANK GUARANTEE WITNESSETH that We the undersigned being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that in consideration of the aforesaid premises, we the Bank hereby, unconditionally and irrevocably guarantee to pay to the Principal upon demand in writing whenever required by them to do so (during validity period), such sum or sums of money not exceeding the said sum of Rs. _____ /- (Rupees _____ only) as above stated.

We, the Bank hereby agree that upon receiving a written demand by the Principal we shall immediately honour the said claim of the Principal and promptly pay the amount claimed under this Guarantee without any demur and the Principal shall not be questioned for any justification of such demand in any manner whatsoever.

We, the bank further agree that the guarantee herein contained shall remain in full force for the agreed period as said above and in the event of claims lodged by the Principal this Bank Guarantee shall continue to remain enforceable till the Principal's claims are fulfilled or discharged by the Bank.

We, the bank do hereby undertake to indemnify and keep indemnified the Principal to the extent of Rs. _____ /- (Rupees _____ only).

We, the bank as the Guarantors, further agree that on a demand made by the Principal for honoring the Bank Guarantee, we have no right to refuse or decline such demand for any reason whatsoever. The fact that there is a dispute (in any manner whatsoever) between the Bidder and the Principal shall always have a right to enforce the Bank Guarantee unconditionally without any reference to the said Bidder.

We, the Bank, further agree that a mere written demand by the Principal is sufficient for us, to pay the full amount covered by the Bank Guarantee without reference to the said Bidder and any protest by the Bidder cannot be valid ground for us, to decline payment to the Principal.

We, the Bank, further agree that the Guarantee herein contained shall remain in full force and effect for _____ months (i.e. upto _____).

Continued...

It shall not be necessary for the Principal to proceed against the Bidder before proceeding against us, the Bank as the Guarantors and the guarantee herein contained shall be unconditionally enforceable against us, the Guarantors, notwithstanding any security which the Principal may have obtained or obtain from the Bidder at the time when proceedings are taken against us, the Guarantors, hereunder be outstanding or unrealized.

Provided always that we the Bank unconditionally undertake to renew this guarantee or to extend the period of guarantee from year to year before the expiry of the validity period or the extended period of the guarantee, as the case may be on being called upon to do so by the Principal and the cost related to this will be borne by the Bidder only. If the guarantee is not renewed or the period extended on demand, we the Bank shall pay the Principal the full amount or guarantee on demand and without demur.

The Bank agrees that no change, addition, modifications to the terms of the Tender documents or to any document, which have been or may be made between the Principal and the Bidder, will in any way absolve the Bank from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification made by Principal at any time.

We, the Bank hereby undertake not to revoke this Guarantee during its currency except with the previous consent of the Principal in writing and agree that any change in the constitution of the Bidder or the Bank shall not discharge our liability hereunder.

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

Notwithstanding anything contained herein:

- (i) Our liability under this Bank Guarantee shall not exceed Rs. _____ /- (Rupees _____ only).
- (ii) This Bank Guarantee shall be valid up to _____ and for claim upto _____.
- (iii) The Guarantee herein before contained shall not be affected in any way by any change in the constitution of the bank or of the Bidder.
- (iv) We are liable to pay to the Principal the Guarantee amount or any part thereof under this Bank Guarantee only and only if the Principal serves upon us a written claim or demand, on or before _____.