

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED



TENDER DOCUMENT

FOR

Tender No: HRIDC/GGN/MSIL/2022/01

Name of Work: CONSTRUCTION OF RAILWAY YARD IN MARUTI SUZUKI INDIA LIMITED PLANT AT MANESAR (HARYANA) INCLUDING EARTHWORK IN FORMATION, RCC BOX CULVERTS, SUPPLY OF BALLAST, SPECIAL PSC SLEEPERS, POINTS & CROSSINGS, AND P-WAY FITTINGS, TRACK LINKING, CC PAVER BLOCK PLATFORMS, RETAINING WALLS, BUILDING AND OTHER MISC. WORKS.

March 2022

Estimated Cost of Work: **6406 lacs**
Date of opening of Tender: **27.05.2022**
Completion Period: **15 months**

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

Office address: 143,5th Floor, RailTel Tower, Sector-44, Gurugram-122003

Website: www.hridc.co.in

<https://etendershry.nic.in>

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**HARYANA RAIL INFRASTRUCTURE DEVELOPMENT
CORPORATION LIMITED (HRIDC)**

Tender Document

(TOP SHEET)

(A) Details to be filled in by HRIDC:

Mode of Tender	E-tender (Two Packet System)
Tender Notice No.	HRIDC/GGN/MSIL/2022/01
Full name of work	Construction of Railway yard in Maruti Suzuki India Limited plant at Manesar (Haryana) including Earthwork in formation, RCC Box culverts, supply of ballast, special PSC sleepers, points & crossings, and P-way fittings, track linking, CC paver block platforms, retaining walls, building and other misc. works.
Approx. Cost	INR 6406 Lacs
Completion period	15 (Fifteen) months
Bid Security amount	INR 33,53,000/-
Issue of Tender Notice	Issue of Tender Notice on HRIDC website (www.hridc.co.in)
Sale/availability of tender document on e-procurement portal of Haryana Govt.	Tender documents will be available on e-procurement portal Government of Haryana i.e. https://etenders.hry.nic.in and HRIDC website i.e. www.hridc.co.in on 06.05.2022 at 05:00 PM to 27.05.2022 upto 03:00 PM.
Site visit and other related details	The prospective tenderers may contact the following for further details: Chief Project Manager/HRIDC (Email: horc.etendering@gmail.com)
Start date for submission of offer on the e-procurement portal of Haryana Govt. i.e. https://etenders.hry.nic.in	17.05.2022 at 05:00 PM
Last date/Time of uploading of tenders	27.05.2022 upto 03:00 PM.
Date/Time of Opening of Tender	Technical Bids will be opened after closing of uploading of tender i.e. 27.05.2022 at 03:30 PM. Financial bids of the eligible tenderers

	would be opened subsequently on the date & time to be notified later on.
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(B) PRECAUTIONS TO BE TAKEN FOR PREPARING LEGAL DOCUMENTS (For guidance to Tenderer):

1. Non-Judicial Stamp Paper

- i) Should have been purchased in the name of the Company/firm/executants
- ii) Should be purchased from the Place/State where the document is being executed.
- iii) Values of the non-judicial stamp paper (NJSP) should be as mentioned in Tender conditions, where value of NJSP is not mentioned in the tender conditions, value of NJSP should as per the law of the state in which the document is being executed.
- iv) Date of purchase of Non-Judicial stamp paper should be prior from the date of execution of document.

2. Signature on the document

- i) The document should be signed on each page and also at the appropriate place meant for signature of executants/deponent.
- ii) Signatory/executants should ensure that on the date of signing the document he/she has valid authority/attorney in his/her favour for signing.
- iii) In affidavit declaration clause as well as verification clause both should be signed by deponent/executants.
- iv) Where the document requires witnessing, it should be duly signed by witnesses along with their names and addresses.
- v) On Power of Attorney, signatures of the Attorney holder should also be got done and attested by executants.

3. Format of the document

- i) Where the format has been prescribed by HRIDC, the document should be executed in that format.
- ii) Date and place of execution should always be mentioned on the document.

4. Notarization of document

- i) The document should be duly attested (signed and stamped) by notary public on each page.
- ii) The seal of the notary public should contain his name, area of practice and Registration number.
- iii) Notarial stamps of appropriate value wherever required should be affixed on the document

**HARYANA RAIL INFRASTRUCTURE DEVELOPMENT
CORPORATION LIMITED**

TENDER NOTICE

1.0 The **Chief Project Manager/HRIDC** for and on behalf of **Haryana Rail Infrastructure Development Corporation** invites open e-tender under **Two-Packet System** for the following work:

S. No.	Name of work	Approx. Cost/	Bid Security	Cost of tender document/ e-service Fee	Completion Period
1	Name of Work: Construction of Railway yard in Maruti Suzuki India Limited plant at Manesar (Haryana) including Earthwork in formation, RCC Box culverts, supply of ballast, special PSC sleepers, points & crossings, and P-way fittings, track linking, CC paver block platforms, retaining walls, building and other misc. works.	Approx. Cost: INR 6406 Lacs	33.53 Lacs	Cost of tender document: INR 50,000/- only (including GST @18%) e-service Fee: INR 1,000/- (Rupees One thousand + 18% GST)	15 Months

2.0 Critical Dates

Code	Activity	Date
D	Issue of Tender Notice on HRIDC Website (i.e. www.hridc.co.in)	04.05.2022
D1= D +02 days	Availability of tender documents on e-procurement portal of Government of Haryana (i.e. www.etenders.hry.nic.in) and HRIDC website (i.e. www.hridc.co.in)	06.05.2022 at 05.00 pm
D2 = D +13 days	Start of submission of offer on e-procurement portal i.e. https://etenders.hry.nic.in	17.05.2022 at 05.00 pm

D3 = D + 23 days	<ul style="list-style-type: none"> • End of availability of tender documents at https://etenders.hry.nic.in • Opening of tender/ offer <p>Note: <i>This is also the last date of uploading of completed offers by the Tenderers</i></p>	<p>27.05.2022 up to 03.00 pm</p> <p>27.05.2022 at 03.30 pm</p>
The reference time for all the above activities is indicated in Table (A) of Top Sheet above.		
NOTE: <i>In case the intended date for opening of tenders is declared a holiday, the tenders will be opened on the next working day at the same time.</i>		

3.0 Validity of Offer: 120 days from the date of opening of Technical Bid (D3).

4.0 Tender Documents to be Submitted by Tenderer(s) and information regarding Tender:

- (i) The tenders are to be uploaded upto date D3 along with scanned copy of all the requisite documents mentioned in “**General Tender Conditions and instructions to tenderers**” and **Annexure-1 of Tender Notice** by all Tenderer(s) failing which the offer will be considered incomplete and action shall be taken as given in **Annexure-1 of Tender Notice**.
- (ii) Technical Bids will be opened on Date D3 immediately after closing of uploading of tenders.
- (iii) Financial bids of the eligible tenderers would be opened subsequently on the date and time to be notified later on.
- (iv) Cost of tender document and e-service fee shall be deposited by all the tenderer(s) via **ONLINE MODE** failing which the offer will be **summarily rejected**.
- v) Tenderer(s) to please note that after opening of tender, any document/credential pertaining to technical, financial eligibility, constitution of firm etc. shall neither be asked nor be entertained/considered under any circumstances and no claim or representation whatsoever from the tenderer in this regard shall be entertained. **Scanned copy of the documents, uploaded by the Tenderer, shall be clear & readable.** However, HRIDC reserves the right to ask for any clarification on the documents/credentials already submitted by the tenderer along with the offer.
- (vi) Tenderer may have to submit the original documents in physical form at short notice whenever asked by HRIDC at any stage of tender evaluation process or even after finalization of tender.
- (vii) The tenderers are requested to carefully peruse the Tender Documents and upload all requisite documents/credentials along with the offer. **Documents submitted/uploaded previously or along with another tender currently under consideration shall not be considered while evaluating the present tender.**

- (viii) After opening of the tender, any document pertaining to the constitution of Sole Proprietorship Firm / Partnership Firm / Registered Company/ Registered Trust / Registered Society / HUF etc. shall neither be asked nor be considered, if submitted. Further, no suomoto cognizance of any document available in public domain (i.e., on internet etc.) or in Railway's/HRIDC record/office files etc. will be taken for consideration of the tender, if no such mention is available in tender offer submitted.
- (ix) In e-tender, all submissions of documents are to be uploaded on the e-procurement portal as indicated in the Tender Document. There may be last minute hic-cups and delay in uploading the documents. Tenderer(s)/Prospective Tenderers are advised to upload their offer well in time. HRIDC will not be responsible for any delay/non submission of offer due to any reason whatsoever.
- (x) The Tenderer (s) shall visit the site of work and acquaint himself/themselves with the conditions of work viz. approach roads and accessibility, nature of soil/rock, availability of materials, electric power, water for work and drinking purposes, site for labour camps, stores, godowns, extent of lead/lift in work, availability of skilled and unskilled labour etc. that may be encountered in the course of execution of work. In short, he/they should familiarize himself/themselves fully with the conditions of the site and furnish a certificate to this effect, in the Proforma appended as **Annexure-C**.

(xi) Two Packet System.

The tender uploaded by the tenderer(s) will consist of TWO Packets/Files i.e. Packet-I/File-I for Technical Bid and Packet-II/File-II for Financial Bid.

1. "Packet-I/File-I" – Technical Bid will be opened after closing of uploading of tender (D3) i.e. **27.05.2022 at 03:30 PM**. The Bid shall contain (a) Tender form (First sheet), (b) All requisite documents mentioned in **"General Tender Conditions and instructions to tenderers"** and **Annexure-1 of Tender Notice**, (c) Complete Tender document along with Corrigendum/Addendum if any issued time to time. Tenderers are requested to ensure that all such documents and Annexures duly filled and signed by legally authorized signatory are uploaded, completed in all respects with their Packet-I/File-I failing which his/their offer is likely to be rejected/summarily rejected, as applicable.

2. Packet II/File II-FINANCIAL BID (SECOND PACKET) shall contain the Financial Bid only and will be uploaded along with File-I/Packet-I on or before the tender opening date D3. Financial Bid of only those tenderer(s) will be opened whose Packet-I/File-I (Technical Bid) is found eligible as per Tender Conditions. The time, date and venue of opening of Packet-II/File-II (Financial Bids) shall be notified to the successful tenderer(s) after evaluation of Packet-I/File-I (Technical Bids). The same shall be opened on due date in the presence of tenderers/their representatives as may wish to attend the same.

Further, offered rates should be filled up in the BOQ at specified space i.e. Financial Bid Sheet (Packet-II/File-II). Rates offered in any other Proforma/Form shall be summarily rejected.

- (xii) Tenderer should keep the validity of their offer for **120 days**. Any deviation will not be accepted under any circumstances.
- (xiii) **Tenderer(s) participating in this tender are deemed to have accepted all the conditions given in Tender document.**
- (xiv) The tenderer(s) may note that the HRIDC reserves its right to either accept or reject any Bid/s without assigning any reasons whatsoever and tenderer(s) shall have no claim(s) on this account.
- (xv) Prospective tenderer(s) may contact **Chief Project Manager, Haryana Rail Infrastructure Development Corporation 5th Floor, RailTel Tower, Plot No. 143, Sector 44, Gurugram, Haryana, 122003** for obtaining further clarifications, if required, **during the working hours.**
- (xvi) **Instructions regarding GST**
- Tenderer to please note that all rates given in BOQ are inclusive of GST and all other taxes.
 - Works contracts shall be treated as supply of services as per Schedule–II GST Act.
 - GST Act and Rules issued from time to time by the Government/ concerned authorities shall be applicable
 - Contractor/ suppliers/ service providers/ parties shall register their firms State wise under GSTIN (GST Identification Number) and submit at the time of opening of tender or before the signing the agreement and shall mention place of business, registered office address and email id.
- (xvii) The cost of the Tender Documents is non-refundable and Tender Document is not transferable.
- (xviii) The detailed e-tender notice is available on e-procurement portal of Government of Haryana i.e. **<https://etenders.hry.nic.in>**.
- (xix) The Tenderers are expected to meet the required safety guidelines (also mentioned in this document) and keep a constant vigil on safety related aspects. Tenderers are also advised to visit the site before submission of their tenders to understand the need for adopting safety related precautions at the work site.
- (xx) Provisions of Make in India Policy 2017 issued by Govt. of India, as amended from time to time, shall be followed for consideration of tenders.

- (xxi) The tenderers who desire to participate against e-tenders, are advised to electronically register themselves on website <https://etenders.hry.nic.in> for which they would require to obtain Class III digital certificate (if already not obtained) issued by CCA under IT Act-2000. The detailed process for the same is explained in the **Annexure-P** (Instructions regarding electronic tendering system)
- (xxii) All other terms and conditions in respect of above tender are given in the tender document.
- (xxiii) Only e-tenders will be accepted, and tenders submitted in any other form will be summarily rejected.
- (xxiv) The tenderer(s) shall abide by the Indian Railways Standard General Conditions of Contract (April 2022) with all corrections slips issued from time to time, wherever applicable, in addition to the conditions mentioned in this tender document.**

Chief Project Manager
Haryana Rail Infrastructure Development Corporation Limited
5th Floor, 143, RailTel tower, Sector-44, Gurugram

Scanned copy of the Documents to be uploaded along with offer

S.No.	Document	Required in the form	If Not submitted along with the tender, then
1.	Cost of Tender Document (in terms of Clause 2.1.2 of “ General Tender Conditions and instructions to tenderer(s) ” of tender document)	ONLINE MODE (no documentary proof required)	Summarily Rejected
2.	Bid Security /Earnest Money	ONLINE MODE (no documentary proof required)	Summarily Rejected
3.	E-Service Fee	ONLINE MODE (no documentary proof required)	Summarily Rejected
4.	Constitution of Firm documents (as required in terms of Clause 2.4 of the tender document)		As per Clause 2.4.1.1 of Special Tender conditions and Instruction to the tenderer, “After opening of the tender, any document pertaining to the constitution of the firm/ JV/ sole/ partnership firm/ company/ Society (as applicable), shall not be entertained/ considered under any circumstances and no claim or representation whatsoever from the tenderer in this regard shall be entertained”.
(A)	In case of Sole Proprietorship Firm	(i) A copy of notarized Affidavit certifying the Sole Proprietorship of the firm. (Standard Affidavit as per Annexure O –1) (ii) An undertaking that he/Sole Proprietorship Firm is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a	Note: If all the requisite documents pertaining to the constitution of the firm/JV/sole/partnership

		<p>partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).</p> <p>(iii) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p>	<p>firm/company/Society etc., as specified in clause 2.4.1 below, are not submitted, offer will be considered as incomplete and shall be summarily rejected.</p>
(B)	In case of HUF	<p>i) A copy of notarized affidavit on Stamp Paper declaring that he who is submitting the tender on behalf of HUF is in the position of ‘Karta’ of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.</p> <p>ii) An undertaking that the HUF is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which HUF was / is a partner/member. Concealment /wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022)</p> <p>iii) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p>	

(C)	In case of a “Partnership Firm/Concern”	<p>(i) Notary certified copy of the Partnership Deed.</p> <p>(ii) Document(s) in support of Registration of firm with Registrar of firms viz. Registration certificate/ Form- A & Form-B/ Form C (as applicable) etc. issued by Registrar of firms.</p> <p>(iii) Power of Attorney (duly notarised/registered) in favour of the individual signing the tender documents, agreement and create liability against the Firm. (Standard Performa as per Annexure O-2)</p> <p>iv) An undertaking by all the partners of the Partnership Firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which HUF was / is a partner/member. Concealment /wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022)</p> <p>v) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p>	
(D)	In case of a “JV Firm”	(i) A copy of MOU/JV Agreement duly notarized in accordance with the Annexure K to “General Tender Conditions and Instructions	

		<p>to Tenderers” of Tender Document, duly signed by the Power of Attorney (POA) holders/authorized signatories of all the constituents/members of the JV.</p> <p>(ii) Power of Attorney/ authorization duly Notarised by all JV constituents, in favour of the individual signing the tender document on behalf of the JV. (Standard Performa as per Annexure O-3)</p> <p>(iii) An undertaking that the JV is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which HUF was / is a partner/member. Concealment/wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).</p> <p>NOT APPLICABLE as JV is not permitted in this Tender</p>	
(E)	<p>In case of a “Company” registered under Companies Act-2013</p>	<p>(i) Copy of the MOA (Memorandum of Association)/AOA (Articles of Association) of the Company;</p> <p>(ii) A copy of Certificate of Incorporation</p> <p>(iii) A copy of notarized/registered Power of Attorney (Standard Performa as per Annexure O-9) by the Company (backed by the resolution of Board of Directors)</p>	

		<p>(Standard Performa as per Annexure O-10) in favour of the individual signing the tender on behalf of the Company and create liability against the company.</p> <p>(iv)An undertaking that the Company is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).</p> <p>(v)All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s)</p>	
(F)	In case of a “LLP (Limited Liability Partnership)”	<p>(i)Notarised copy of the LLP Agreement;</p> <p>(ii)A Copy of Certificate of Incorporation; and</p> <p>(iii)A copy of notarized/registered Power of Attorney/authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP. (Standard Performa as per Annexure O-11)</p> <p>(iv)An undertaking that the LLP is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or</p>	

		<p>any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).</p> <p>(v)All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s)</p>	
(G)	In case of a Registered Society/ Registered Trust	<p>(i)A notarised copy of the Certificate of Registration;</p> <p>(ii)Notarised copy of Deed of Formation; and</p> <p>(iii)A notarised/registered copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust.</p> <p>(iv)An undertaking that Registered Society/ Registered Trust is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62</p>	

		<p>of the General Conditions of Contract (April 2022).</p> <p>(v) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p>	
5.	<p><u>Technical Eligibility Criteria</u> –</p> <p>The sub-clause 10.1 of IR GCC, April 2022 shall not be applicable for the subject tender. as per clause 2.3.2 (A) of General Tender Conditions and instructions to Tenderer(s) to be apply for the subject tender.</p>	Copy	<p>Note: <i>“After opening of the tender, any document/ credential pertaining to the technical & financial eligibility and available bid capacity, constitution of firm etc. shall neither be asked nor be entertained/ considered under any circumstances and no claim or representation whatsoever from the tenderer in this regard shall not be entertained”</i></p> <p>Summarily rejected.</p>
6.	<p><u>Financial Eligibility Criteria</u>– The tenderer must have minimum average annual contractual turnover of 1.5 V/N crores; where V= Advertised value of the tender in crores of Rupees N= Number of years prescribed for completion of work for which bids have been invited.</p> <p>The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years, as per the audited balance sheet. However, in</p>	Copy	

	<p>case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover. The tenderers shall submit requisite information as per Annexure-O-14, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet as per Clause 2.3.2 (B) of General Tender Conditions and instructions to Tenderer(s).</p>		
7.	Tender Form (First Sheet)	Copy	Liable to be rejected
8.	Annexure-C Declaration form regarding site etc.	Copy	Liable to be rejected
9.	Annexure-D Declaration regarding constitution of firm	Copy	Liable to be rejected
10.	Annexure-E (Plant and Machinery)	Copy	Liable to be rejected
11.	Annexure-F (Engineers/ Personnel)	Copy	Liable to be rejected
12.	Annexure-G (Works executed during last seven years ending last day of the month previous to the one in which tender is opened)	Copy	Liable to be rejected

13	Annexure-H Work in Hand - in support of Credentials.	Copy	Liabile to be rejected
14	Annexure-I (Detail of Contractual Payment received in previous three financial years and the current financial year)	Copy	Liabile to be rejected
15	Annexure-J (Bank Detail/ RTGS)	Copy	Liabile to be rejected
16	Completion Certificate*	Copy	Summarily Rejected
17	Annexure-M Mandatory Affidavit to be submitted by tenderer along with the tender documents	Copy	Summarily Rejected
18	Annexure-Q - Mandatory undertaking Regarding Employment/ Partnership of Retired Government of India/ Haryana Employees.	Copy	Summarily Rejected

* Tenderer should make all efforts to submit the Completion certificate as per Annexure-L.

COVERING NOTE

FOR THE SPECIAL ATTENTION OF THE TENDERERS

1.0 The tenderers are requested to carefully peruse the Tender Documents **and upload all requisite documents/credentials along with the offer. Scanned copy of the documents uploaded by the tenderer shall be clear & readable. Documents submitted/uploaded previously or along with another tender currently under consideration SHALL NOT be considered while evaluating the present tender.**

2.0 The tenderer (s) shall visit the site of work and acquaint himself/themselves with the conditions of work viz. approach roads and accessibility, nature of soil/rock, availability of materials, electric power, water for work and drinking purposes, site for labour camps, stores, godowns, extent of lead/lift in work, availability of skilled and unskilled labour etc. that may be encountered in the course of execution of work. In short, he/they should familiarize himself/themselves fully with the conditions of the site and FURNISH A CERTIFICATE TO THIS EFFECT, in the Proforma appended as **Annexure-C**.

3.0 Further, offered rates should be filled up in the Tender Schedule at specified space i.e. **Financial bid sheet. Rates offered in any other Proforma/Form shall be summarily rejected.**

4.0 Pre-bid Queries and Pre-bid Meeting

A. **Pre-bid Queries:** Tenderers shall review the tender documents in a detailed manner, conduct site inspections at their own cost and carry out a detailed review of drawings for the works mentioned in this tender document. Further, in case of queries/ clarifications, if any, Tenderers shall send their pre-bid queries to HRIDC through mail on the email id horc.etendering@gmail.com clearly mentioning their name as well as the name of the tender document at least 8 days before the scheduled date for the Pre-bid meeting. Additionally, Tenderers can also send their pre-bid queries through registered post to the office of Chief Project Manager, Haryana Rail Infrastructure Development Corporation, 5th Floor, Railtel Tower, Plot No. 143, Sector 44, Gurugram, Haryana, 122003 at least 1 (one) week before the scheduled date for the Pre-bid meeting.

B. **Pre-bid Meeting:** The date, time and venue of the Pre-Bid Meeting shall be:

Date: 14.05.2022

Time: 11:00 AM

Venue: Haryana Rail Infrastructure Development Corporation, 5th Floor, Railtel Tower, Plot No. 143, Sector-44, Gurugram, Haryana-122003

Note: A maximum of two representatives of each Tenderer shall be allowed to participate on production of an authority letter from the Tenderer.

5.0 Two Packet System.

5.1 The tender uploaded by the tenderer(s) will consist of TWO Packets/Files i.e. Packet-I/File-I and Packet-II/File-II.

5.2 **“Packet-I/File-I” – Technical Bid** will be opened immediately after close of uploading of tender (D2) i.e. 27.05.2022 at 03:30 PM. This Bid shall contain (a) Tender form (First sheet), (b) Special Tender Conditions and Instructions to tenderer/s and (c) Special conditions relating to site data, specification and Special conditions of Non-Schedule Items. This Bid shall contain all the documents as listed in Annexure-1 & Annexure-2 of Tender Notice, Para (D) of Top Sheet and the Covering note. Tenderers are requested to ensure that all such documents and Annexures duly filled in are uploaded, complete in all respects with their Packet-I/File-I failing which his/their offer is likely to be rejected/summarily rejected, as applicable.

5.3 Packet II/File II-FINANCIAL BID (SECOND PACKET) of only those tenderer(s) will be opened whose Packet-I/File-I (Technical Bid) is found eligible as per Tender Conditions. The time, date and venue of opening of Packet-II/File-II (Financial Bids) shall be notified to the successful tenderer(s) after evaluation of Packet-I/File-I (Technical Bid). The same shall be opened on due date in the presence of tenderers/their representatives as may wish to attend the same.

Further, offered rates should be filled up in the Tender Schedule at specified space i.e. Financial bid sheet (Packet-II/File-II). Rates offered in any other Proforma/Form shall be summarily rejected.

6.0 Tender Document shall be uploaded along with the following documents:

- (i) Bid security, Cost of Tender Document and E-service fees ONLINE MODE
- (ii) All other mandatory documents as listed in the document

7.0 Tenderer(s) to please note that after opening of tender, any document/credential pertaining to technical & financial eligibility, constitution of firm etc. shall neither be asked nor be entertained/ considered under any circumstances and no claim or representation whatsoever from the tenderer in this regard shall be entertained. Scanned copy of the documents, uploaded by the tenderer shall be clear & readable. However, HRIDC reserves the right to seek any clarification on the documents/credentials already submitted by the tenderer along with the offer.

7.1 Tenderer should keep the validity of their offer for 120 days. Any deviation from this will not be accepted under any circumstances.

8.0 Tenderer may have to submit the original Documents in physical form at short notice whenever asked by HRIDC at any stage of tender evaluation process or even after finalization of tender.

9.0 **In E-tender, all submissions of documents are to be uploaded on e-procurement portal indicated in this tender document. There may be last minute hic-cups and delay in uploading the documents and payment of Bid Security etc. Tenderer's/Prospective bidders are advised to upload their offer well in time. HRIDC will not be responsible for any delay/non submission of offer due to any reason whatsoever.**

10.0 Each page of the tender papers will be treated as signed/ accepted by the tenderer(s) or such person(s) on his/their behalf who is/are legally authorized to sign for him/them.

11.0 The tenderer(s) may note that the HRIDC reserves its right to either accept or reject any Bid/s without assigning any reasons whatsoever and tenderer(s) shall have no claim(s) on this account.

12.0 Prospective tenderer(s) may contact **Chief Project Manager, Haryana Rail Infrastructure Development Corporation 5th Floor, Railtel Tower, Plot No. 143, Sector 44, Gurugram, Haryana, 122003** for obtaining further clarifications, if required, **during the working hours.**

**HARYANA RAIL INFRASTRUCTURE DEVELOPMENT
CORPORATION LIMITED**

TENDER FORMS (FIRST SHEET)

Tender no: HRIDC/GGN/MSIL/2022/01

Name of work: Construction of Railway yard in Maruti Suzuki India Limited plant at Manesar (Haryana) including Earthwork in formation, RCC Box culverts, supply of ballast, special PSC sleepers, points & crossings, and P-way fittings, track linking, CC paver block platforms, retaining walls, building and other misc. works.

To,

The Managing Director,

Haryana Rail Infrastructure Development Corporation Limited

SCO-. 17-19, 3rd Floor, Sector-17A, Chandigarh

E-mail: hridc2017@gmail.com

Dear Sir,

I/We, _____ have read the various conditions to tender attached hereto and agree to abide by the said conditions. I/We also agree to keep this tender open for acceptance for a period of 120 (One hundred twenty) days from the date fixed for opening the same and in default thereof, I/We will be liable for forfeiting of my/our "Bid Security". I/We offer to do the work "*Construction of Railway yard in Maruti Suzuki India Limited plant at Manesar (Haryana) including Earthwork in formation, RCC Box culverts, supply of ballast, special PSC sleepers, points & crossings, and P-way fittings, track linking, CC paver block platforms, retaining walls, building and other misc. works*" for Haryana Rail Infrastructure Development Corporation Limited, at the rates quoted in the attached schedule and hereby bind myself/ourselves to complete the work in all respects within **15 (Fifteen) months** from the date of issue of letter of acceptance of the tender.

2. I/We also hereby agree to abide by the **Indian Railways Standard General Conditions of Contract (April ,2022)**, with all correction slips issued from time to time and to carry out the work according to the Special Conditions of Contract, Technical Specifications, specifications of materials and Schedule of Rates as laid down by HRIDC in the present contract.
3. Bid Security Rs. 33,53,000 /- has already been deposited online/submitted as Bank Guarantee bond. Bid security may be forfeited without prejudice to any other right or remedies in case my/our Tender is accepted and if:
 - a) I/We do not submit the Performance Guarantee within the time specified in the Tender document;
 - b) I/We do not execute the contract documents within seven (7) days after receipt of notice issued by HRIDC that such documents are ready; and
 - c) I/We do not commence the work within fifteen (15) days after receipt of orders to that effect.

4. (a) I/We am/are a Startup firm registered by Department of Industrial Policy and Promotion (DIPP) and my registration No. is valid upto (copy enclosed) and hence exempted from submission of Bid Security.

5. We are a labour Co-operative society and our registration No. is With And hence require to deposit only 50% of Bid Security.

6. Until a formal Contract Agreement is prepared and executed, acceptance of this tender shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the letter of acceptance of my/our offer for this work.

Signature of Witnesses:

.....

(1)

(2)

Signature of Tenderer(s)

Date.....

Address of the Tenderer(s)
(Complete postal address)

GENERAL TENDER CONDITIONS AND INSTRUCTIONS TO TENDERER(S)

1.0	<u>DETAILS OF WORKS:</u>
	Tenders are invited for the work “Construction of Railway yard in Maruti Suzuki India Limited plant at Manesar (Haryana) including Earthwork in formation, RCC Box culverts, supply of ballast, special PSC sleepers, points & crossings, and P-way fittings, track linking, CC paver block platforms, retaining walls, building and other misc. works.”
2.0	<p><u>TENDER DOCUMENTS:</u></p> <p>One set of complete tender documents contains the following:</p> <p>Packet I – Technical Bid It consists of Top sheet, Tender Notice, Addendum/Corrigendum, if any, Tender form (first sheet), General Tender Conditions and Instructions to Tenderer(s) along with related Annexures, Special Conditions related to Site Data and Specifications along with related Annexures. The above documents must be uploaded along with all mandatory documents/credentials as directed in Annexure-1 of Tender Notice and General Tender Conditions and Instructions to Tenderer(s).</p> <p>Packet II – Financial Bid It consists of Schedule of Items and Quantities with provision for quoting of rates in excel sheet (BOQ) online by tenderers. All rates given in BOQ are inclusive of GST and all other taxes.</p>
2.1	<u>SUBMISSION OF TENDERS:</u>
2.1. 1 (a)	<p>The offer is to be uploaded online from 17.05.2022 at 05:00 PM to 27.05.2022 upto 03:00 PM (D3) along with scanned copy of all the requisite documents (as per Annexure-1 of Tender Notice).</p> <ul style="list-style-type: none"> • Tenderer may have to submit the original documents in physical form at short notice whenever asked by HRIDC at any stage of tender evaluation process or even after finalization of tender. • In e-tender, all submissions of documents are to be uploaded on the e-procurement portal of Government of Haryana i.e. https://etenders.hry.nic.in. There may be last minute hic-cups and delay in uploading the Documents. Tenderer’s/ Prospective Tenderers are advised to upload their offer well in time. HRIDC will not be responsible for any delay/non submission of offer due to any reason whatsoever.

(b)	<p>“Packet-I/File-I” – Technical Bid will be opened after closing of uploading of tender (D3) i.e. 27.05.2022 at 03:30 PM. The Bid shall contain (a) Tender form (First sheet); (b) All requisite documents mentioned in “General Tender Conditions and instructions to tenderers” and Annexure-1 of Tender Notice; (c) Complete Tender document duly signed by competent authority at each page. Tenderers are requested to ensure that all such documents and Annexures duly filled and signed by legally authorized signatory are uploaded, completed in all respects with their Packet-I/File-I failing which his/their offer is likely to be rejected/summarily rejected, as applicable.</p>
(c)	<p>Packet II/File II-FINANCIAL BID (SECOND PACKET) shall contain the Financial Bid only and will be uploaded along with File-I/Packet-I on or before the tender opening date D3. Financial Bid of only those tenderer(s) will be opened whose Packet-I/File-I (Technical Bid) is found eligible as per Tender Conditions. The time, date and venue of opening of Packet-II/File-II (Financial Bids) shall be notified to the successful tenderer(s) after evaluation of Packet-I/File-I (Technical Bids). The same shall be opened on due date in the presence of tenderers/their representatives as may wish to attend the same.</p> <p>Further, offered rates should be filled up in the BOQ at specified space i.e. Financial Bid Sheet (Packet-II/File-II). Rates offered in any other Proforma/Form shall be summarily rejected.</p>
(d)	<p>Care in submission of tender</p>
(i)	<p>Before submitting a tender, the tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates he enters in the tender forms are adequate and all-inclusive to accord with the provisions in Clause-37 of the Standard General Conditions of Contract (April 2022) for the completion of works to the entire satisfaction of the Engineer-in-charge.</p>
(ii)	<p>Tenderers will examine the various provisions of The Central Goods and Services Tax Act, 2017(CGST)/Integrated Goods and Services Tax Act, 2017(IGST)/Union Territory Goods and Services Tax Act, 2017(UTGST)/ respective state’s State Goods and Services Tax Act (SGST) also, as notified by Central/State Govt& as amended from time to time and applicable taxes before bidding. Tenderer’s will ensure that full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.</p>
(iii)	<p>The successful tenderer who is liable to be registered under CGST /IGST/ UTGST/ SGST Act shall submit GSTIN along with other details required under CGST/IGST/UTGST/SGST Act to HRIDC immediately after the award of</p>

	contract, without which no payment shall be released to the Contractor. The Contractor shall be responsible for deposition of applicable GST to the concerned authority.
(iv)	In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/SGST Act, the HRIDC shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concerned authority.
(v)	When work is tendered for by a firm or company, the tender shall be signed by the individual legally authorized to enter into commitments on their behalf.
(vi)	The HRIDC will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. It may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.
(vii))	The tenderers shall submit a copy of certificate stating that all their statements/documents submitted along with bid are true and factual. Standard format of certificate to be submitted by the Tenderer is enclosed as Annexure-M . Non submission of above certificate by the Tenderer shall result in summarily rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self-attested by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document.
2.1. 2	Cost of Tender Documents Tender Documents will be available on the e-procurement portal https://etenders.hry.nic.in from 06.05.2022 at 05:00 PM to 27.05.2022 upto 03:00 PM (D3) .The cost of Tender Document will have to be deposited ONLINE. The cost of tender document is Rs. 50,000/- (including GST @ 18%).

2.1. 3	The Tender Document consisting of TWO Packets/Files i.e., Packet-I/File-I (TECHNICAL BID) and the Packet-II/File-II (FINANCIAL BID), shall be uploaded by 27.05.2022 upto 03:00 PM (D3) . The Packet-I/File-I (Technical Bid) will be opened after closing of uploading of tender i.e. 27.05.2022 at 03:30 PM . Technical details and commercial conditions read out in the presence of such tenderer(s) as is/are present if any. The time, date and venue of opening of Packet-II/File-II (Financial Bids) shall be notified to successful tenderer(s) after evaluation of Packet-I/File-I (Technical Bids). The offer shall be uploaded along with scanned copy of all the requisite document (as per Annexure-1 of Tender Notice and General Tender Conditions & Instructions to Tenderer(s)). In case the intended date for opening of tenders is declared a holiday, the tenders will be opened on the next working day at the same time.
2.2	<u>COMPLETION OF TENDER DOCUMENTS:</u>
2.2. 1	The tenderer(s) shall quote his single percentage rate in financial bid sheet against each bill in Bill of Quantities (Packet-II, Financial Bid). Every possible fluctuation, in the rate of labour, material and general commodities, and other possibilities of each and every kind which may affect the rates, should be considered and kept in view before quoting the rates and no claim on this account shall be entertained by HRIDC under any circumstances except the price escalation payable as per price variation clause, if any, provided separately in the tender documents.
2.2. 2	<p>The rate should be quoted in percentage only in Financial bid sheet. However, the quoted percentage rate against BOQ will automatically be converted into total quoted amount in figures and words in Financial Bid sheet.</p> <p>Only one single percentage above/below/at par the on total estimated value for each bill shall be quoted by the tenderer and any tenderer quoting rates other than single percentage shall be summarily rejected.</p> <p>In case, the tenderer(s) quote/s multiple rates*, the offer will be treated as incomplete and shall be summarily rejected.</p> <p>Rebate if any, one single rebate over entire Tender schedule shall be considered.</p> <p>*Multiple Rates - in case tenderer/s quote selective rebate on any individual item(s), the same will be treated as multiple rate and their offer will be summarily rejected.</p>

	If a tenderer does not quote rate/rates in the format as specified in this tender document i.e. Financial bid sheet (Package II/File-II- Financial Bid) , the offer will be treated incomplete and summarily rejected .
2.2. 3	Tenderer(s) participating in this tender are deemed to have accepted all the conditions given in Tender document.
2.2. 4	The rates, rebates and/or other financial terms, if any, quoted by tenderer in the relevant fields of the Financial Bid page will only be the ruling terms for deciding the inter-se ranking, and any such condition having financial repercussions, if quoted by them anywhere else including attached documents shall not be considered for deciding inter-se ranking.
2.2. 5	Additional conditions or stipulations, if any, must be made by the tenderer/s in a covering letter with the tender. HRIDC reserves the right not to consider conditional tenders and reject the same without assigning any reason. Only those additional conditions which are explicitly accepted by HRIDC shall form part of the contract.
2.2. 6	An affidavit is required to be uploaded/submitted by all tenderers (as given in Annexure-M). Based on this affidavit, Tender Committee will deliberate and decide eligibility of tenderers for first packet.
2.2. 7	Tenderer may have to submit the original Documents in physical form at short notice whenever asked by HRIDC at any stage of tender evaluation process or even after finalization of tender.
2.2. 8	In E-tender, all submissions of documents are to be uploaded on the e-procurement portal https://etenders.hry.nic.in . There may be last minute hiccups and delay in uploading the Documents. Tenderer's/Prospective Tenderers are advised to upload their offer well in time. HRIDC will not be responsible for any delay/non submission of offer due to any reason whatsoever.
2.2.9	Tenders containing erasures and / or alterations of tender documents are liable to be rejected. Any correction made by tenderer(s) in his/their entries must be attested by him / them.
2.2.1 0	The works are required to be completed within a period of 15 months from the date of issue of acceptance letter.
2.2.1 1	Employment/Partnership, etc. of Retired Government of India/ Government of Haryana Employees: (a) Should a Tenderer

- i) be a retired Engineer of the gazetted rank or any other gazetted officer working before his retirement, whether in the executive or administrative capacity or whether holding a pensionable post or not, in the Engineering or any other department of Government of India/ Government of Haryana and administered by the President of India/ Competent Authority for the time being , OR
- ii) being partnership firm/ company/ registered society/ registered trust etc have as one of its partners a retired Engineer of the gazetted rank or any other gazetted officer working before his retirement in Government of India/ Government of Haryana, OR
- iii) being an incorporated company have any such retired Engineer of the gazetted rank or any other gazetted officer working before his retirement in Government of India/ Government of Haryana as one of its directors

AND

in case where such Engineer or officer had not retired from government service at least 1 year prior to the date of submission of the tender

THEN

the tenderer will give full information as to the date of retirement of such Engineer or gazetted officer from the said service and as to whether permission for taking such contract, or if the Contractor be a partnership firm or an incorporated company, to become a partner or director as the case may be, has been obtained by the tenderer or the Engineer or officer, as the case may be from the President of India/ Competent Authority duly authorized by him in this behalf, shall be clearly stated in writing at the time of submitting the tender.

(b) In case, upon successful award of contract, should a tenderer depute for execution of the works under or to deal matters related with this contract, any retired Engineer of gazette rank or retired gazetted officer working before his retirement in the Engineering or any other department of Government of India/ Government of Haryana and administered by the President of India/ Competent Authority for the time being, and now in his employment, then the tenderer will ensure that retired Engineer or retired gazetted officer had retired from government service at least 1 year prior to the date of his employment with tenderer and in case he had retired from service within a year then he possesses the requisite permission from the President of India/ Competent Authority or any officer, duly authorized by him in this behalf, to get associated with the tenderer.

(c) Should a tenderer or Contractor being an individual, have member(s) of his family or in the case of partnership firm/ company / registered society / registered trust etc. one or more of his partner(s)/shareholder(s) or member(s) of the family of partner(s)/shareholder(s) having share of more than 1% in the tendering entity employed in gazetted capacity in the Engineering or any other

	<p>department of Government of India/ Government of Haryana, then the tenderer at the time of submission of tender, will inform the authority inviting tenders the details of such persons.</p> <p>Note: The undertaking for the above shall be submitted as per Annexure-Q. Tenders without the above information referred to or a statement to the effect that no such retired Engineer or retired gazetted officer is so associated with the Tenderer, as the case may be, shall be summarily rejected.</p>
2.3	<u>CREDENTIALS TO BE UPLOADED/SUBMITTED ALONG WITH TENDER DOCUMENTS:</u>
2.3. 1	The tenderer(s) shall upload with his/their tender a list of serviceable machinery, tools and plants, equipment and vehicles he/they has/have in hand for executing the work & those, he/they intends/intend to purchase as per Annexure-E .
2.3 .2 (A)	<p>Technical Eligibility Criteria</p> <p>The Sub-clause 10.1 of IR GCC, April 2022 shall not be applicable. The technical eligibility criteria for the subject Tender shall be as follows:</p> <p>The Tenderer shall upload the documents to prove their technical eligibility as per following criteria:</p>
	<p>I. Specific Construction & Contract Management Experience The tenderer must have successfully completed/substantially completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:</p> <p>(i) One similar work each costing not less than the amount equal to 60% of advertised value of the tender.</p> <p>Similar Work for 2.3.2 (A) I (i) above shall be that work which meets the requirement of any one of the following:</p> <p>a) Execution of 4.0 TKM or more of Track linking works in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects, or</p> <p>b) Execution of 2.0 Lakh cum of Earthwork in formation in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects, or</p> <p>c) Execution of 8,000 cum or more PCC/RCC for bridges/ viaduct in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects</p> <p style="text-align: center;">OR</p>

- (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of the tender

Similar Work for 2.3.2 (A) I (ii) above shall be that work which meets the requirement of any one of the following:

- a) Execution of 2.75 TKM or more of Track linking works in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects, or
- b) Execution of 1.50 Lakh cum of Earthwork in formation in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects, or
- c) Execution of 5,500 cum or more PCC/RCC for bridges/ viaduct in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects

OR

- (iii) Three similar works each costing not less than the amount equal to 30% of advertised value of the tender

Similar Work for 2.3.2 (A) I (iii) above shall be that work which meets the requirement of any one of the following:

- a) Execution of 2.0 TKM or more of Track linking works in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects, or
- b) Execution of 1.10 Lakh cum of Earthwork in formation in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects, or
- c) Execution of 4,000 cum or more PCC/RCC for bridges/ viaduct in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects

II. Construction Experience in key activities

For the above or any other contracts executed during the period indicated in 2.3.2(A) I above, a minimum construction experience is required in all the following key activities listed below:

- a) Execution of 4.5 TKM or more of Track linking works in one year in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects.
- b) Execution of 2.4 Lakh cum of Earthwork in formation in one year in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects.
- c) Execution of 8,800 cum or more PCC/RCC for bridges/ viaduct in one year in Railway/Metro Rail / Regional Rapid Transit Systems (RRTS) projects

Substantially completed work(s) shall mean: The work(s) is considered as substantially completed when the value of executed work i.e. payment received

	<p>is 80% or more of the contract value subject to the condition that work is not terminated by the concerned department/Client or abandoned by the Contractor and balance work is progressing satisfactory. This is to be substantiated by a certificate from the concerned department/Client.</p> <p><i>Note:</i></p> <p><i>i. Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organisation, work experience certificate issued by Public listed company having average annual turnover of Rs. 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, incorporated/registered at least 5 years prior to the date of opening of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.</i></p> <p><i>In case tenderer submits work experience certificate issued by public listed company, the tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.</i></p> <p><i>Further, it may be kindly noted that the above work, if executed as part of any other single work, will also be considered eligible as similar work provided the value of that part of single work meets the minimum amount as mentioned in clause above.</i></p>
<p>2.3. 2 (B)</p>	<p><u>Financial Eligibility Criteria:</u></p> <p>The tenderer must have minimum average annual contractual turnover of 1.5 V/N crores; where V= Advertised value of the tender in crores of Rupees N= Number of years prescribed for completion of work for which bids have been invited.</p> <p>The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years, as per the audited balance sheet. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.</p> <p>The tenderers shall submit requisite information as per Annexure-O-14, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet.</p>

<p>2.3. 2 (C)</p>	<p><u>Bid Capacity:</u></p>
	<p>Tenderers meeting the minimum eligibility criteria will be qualified only if their available Bid capacity is equal to or more than estimated cost of the present work. The available bid capacity of the tenderer shall be worked out by the following formula:</p> <p>Available Bid capacity= $[A \times N \times 2] - 0.33 \times N \times B$</p> <p>Where,</p> <p>A = Maximum value of payment received for contractual work in any one of the previous three financial years (i.e 2018-19,2019-20,2020-21) or the current financial year (up to date of inviting tender i.e 2021-2022), taking into account the completed as well as work in progress.</p> <p>N = Number of years prescribed for completion of work for which bids has been invited.</p> <p>B = Value of existing commitments and balance amount of ongoing works with the tenderer to be completed in next 'N' years.</p> <p>(a) The tenderer(s) shall furnish the details of</p> <ol style="list-style-type: none"> i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) for calculating A, and ii) Existing commitments and balance amount of ongoing works with tenderer as per the prescribed Proforma in Annexure-H for statement of all works in progress and also the works which are awarded to tenderer but yet not started up to the date of inviting of tender. In case of no works in hand, a Nil statement should be furnished. <p>The submitted details for (i) and (ii) above should be duly verified by the Chartered Accountant.</p> <p>b) In case of JV, the tenderer(s) must furnish the details of</p> <ol style="list-style-type: none"> i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) for calculating A, and ii) Existing commitments and balance amount of ongoing works with each member of JV as per the prescribed proforma in Annexure-H for statement of all works in progress and also the

	<p>works which are awarded to tenderer but yet not started up to the date of inviting of tender. In case of no works in hand, a 'NIL' statement should be furnished. The submitted details for (i) and (ii) above should be duly verified by the Chartered Accountant.</p> <p>This statement should be submitted duly verified by Chartered Accountant.</p> <p>c) Value of a completed work/work in progress/work awarded but yet not started for a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned bid capacity in the tender under consideration.</p> <p>d) The arithmetic sum of individual "bid capacity" of all the members shall be taken as JV's "bid capacity".</p> <p>e) In case the tenderer(s) fail(s) to submit the above statements i.e. Annexure-H along with offer, their/his offer shall be considered as incomplete and will be summarily rejected.</p> <p>f) The available bid capacity of tenderer shall be assessed based on the details submitted by the tenderer. In case, the available bid capacity is lesser than estimated cost of work put to tender, his offer shall not be considered even if he has been found eligible in other eligibility criteria/tender requirement.</p>
<p>2.3. 2 (D)</p>	<p>Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under:</p> <p>The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India or entity authorized by RBI to do so for the relevant date or immediately previous date for which rates have been published. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date or immediately previous date for which rates have been published.</p>
	<p>Notes for clause 2.3.2 (A) to 2.3.2 (D)-</p> <p><i>1. Substantially Completed Work means an ongoing work in which payment equal to or more than 90% of the present contract value (excluding</i></p>

the payment made for adjustment of Price variation (PVC), if any) has been made to the contractor in that ongoing contract and no proceedings of termination of contract on Contractor's default has been initiated. The credential certificate in this regard should have been issued not prior to 60 days of date of invitation of present tender.

2. In case a work is started prior to 07 (seven) years, ending last day of month previous to the one in which tender is invited, but completed in last 07 (seven) years, ending last day of month previous to the one in which tender is invited, the completed work shall be considered for fulfillment of credentials.

3. If a work is physically completed and completion certificate to this extent is issued by the concerned organization but final bill is pending, such work shall be considered for fulfillment of credentials

4. In case of completed work, the value of final bill (gross amount) including the PVC amount (if paid) shall be considered as the completion cost of work. In case final bill is pending, only the total gross amount already paid including the PVC amount (if paid) shall be considered as the completion cost of work.

In case of substantially completed work, the total gross amount already paid including the PVC amount (if paid), as mentioned in the certificate, shall be considered as the cost of substantially completed work.

5. If a bidder has successfully completed a work as subcontractor and the work experience certificate has been issued for such work to the subcontractor by a Govt. Organization or public listed company as defined in Note for Item 10.1 Para 10 of the Tender Form (Second Sheet), the same shall be considered for the purpose of fulfillment of credentials.

6. In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost including the PVC amount (if paid) of that completed work or substantially completed work, shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.

7. In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of $0.3 \times 0.2 \times \text{value of the work done in the previous entity}$. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.

8. In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-

worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm (e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.

9. In case of existing partnership firm if any new partner(s) joins the firm without any modification in the name and PAN/TAN no. of the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.

10. Any partner in a partnership firm cannot use or claim his credentials in any other firm without leaving the partnership firm i.e., In a partnership firm of A&B partners, A or B partner cannot use credentials of partnership firm of A&B partners in any other partnership firm or propriety firm without leaving partnership firm of A&B partners.

11. In case a partner in a partnership firm is replaced due to succession as per succession law, the proportion of credentials of the previous partner will be passed on to the successor.

12. If the percentage share among partners of a partnership firm is changed, but the partners remain the same, the credentials of the firm before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, in case a partner of partnership firm retires without taking away any credentials from the firm, the credentials of partnership firm shall remain the same as it is without any change in their value.

13. In a partnership firm "AB" of A&B partners, in case A also works as propriety firm "P" or partner in some other partnership firm "AX", credentials of A in propriety firm "P" or in other partnership firm "AX" earned after the date of becoming a partner of the firm AB shall not be added in partnership firm AB.

14. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.

15. In case company A is merged with company B, then company B would get the credentials of company A also.

(E)	Statement of works executed/completed by the contractors during last 7 (Seven) years must be submitted as per Annexure-G . Tenderer should make all efforts to submit the Completion certificate as per Annexure-L .
(F)	The following will be applicable in evaluating the eligibility:
(a)	Similar nature of work physically completed within the qualifying period i.e., the last 07 (seven) years, ending last day of the month previous to the one in which tender is invited (even though the work might have commenced before the qualifying period) should only be considered in evaluating the eligibility criteria.
(b)	<p>The total value of similar nature of work completed during the qualifying period and not the payments received within qualifying period alone, should be considered. In case, the final bill of similar nature of work has not been passed and final measurements have not been recorded; the paid amount including statutory deductions is to be considered. If final measurements have been recorded and work has been completed with negative variation, then also the paid amount including statutory deductions is to be considered.</p> <p>However, if final measurements have been recorded and work has been completed with positive variation, but variation has not been sanctioned, original agreement value or last sanctioned agreement value whichever is lower should be considered for judging eligibility.</p>
(G)	The tenderer(s) shall submit a statement of contractual payments received during the last three financial years and current year on the prescribed Performa as detailed at Annexure-I . The details shall be based on the Form 16-A issued by employer i.e., the certificate of deduction of tax at source under Section 203 of the Income Tax Act, 1961 & Form 26-AS issued by Income tax department. Self-attested photocopies of the form 16-A/ form 26AS shall be enclosed in support of the above. HRIDC may invite the tenderer for online verification of Form 26AS.
(H)	The overall financial soundness of the tenderer(s) will be evaluated based upon the volume of the work handled, Turn over, Balance Sheet etc. Tenderer(s) will accordingly furnish these particulars for the last 3 (three) years (i.e. Current year and Three Previous Financial Years) duly supported by latest audited results/Balance Sheets.
(I)	If the tenderer(s) is a JV/Consortium, each partner of JV/Consortium should have good credentials and the JV/Consortium should meet the technical and financial eligibility criteria as per the guidelines given above and in Clause 2.4.1 (C)

2.4	<u>CONSTITUTION OF THE FIRM:</u>
2.4. 1	<p>(i) The tenderer shall clearly specify whether the tender is submitted on his own (Proprietary Firm) or on behalf of a Partnership Firm / Company / Joint Venture (JV) / Registered Society / Registered Trust / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern, and copy of PAN Card along with their tender. Tender Documents in such cases are to be signed by such persons as may be legally competent to sign them on behalf of the firm, company, association, trust or society, as the case may be.</p> <p>The tenderer(s) must necessarily upload the legal documents at the time of tendering on or before closing of uploading of tender (D3), pertaining to the constitution of their Concern as applicable, along with the tender, as enumerated below. Tender Documents in such cases are to be signed by such persons as may be legally competent to sign them on behalf of their Concern.</p> <p>The tenderer(s) shall give full details of the constitution of the Firm/JV/Company/Society etc. in “Annexure-D” to “General Tender Conditions and Instructions to Tenderers” of Tender Document and must submit the following documents, without fail: -</p>
(A)	<u>Sole Proprietorship Firm:</u>
	<p>Following documents shall be submitted by the tenderer on or before closing of uploading of tender (D3).</p> <p>(i) A copy of notarized Affidavit certifying the Sole Proprietorship of the firm. (Standard Affidavit as per Annexure O-1)</p> <p>(ii) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p> <p>(iii) All details of firm must be provided in Annexure-D.</p>
(B)	<u>Partnership Firm:</u>
	<p>If the tender is uploaded on behalf of a “Partnership firm/concern”, The Partnership Firm should be registered with Registrar of firms before the date of opening of tender. The tenderer must submit following documents along with the offer:</p> <p>i) Notary certified copy of the Partnership Deed.</p>

- ii) Document(s) in support of Registration of firm with Registrar of firms viz. Registration certificate/ Form- A & Form-B/ Form C (as applicable) etc. issued by Registrar of firms.
- iii) Power of Attorney (duly notarised/registered) in favour of the individual signing the tender documents, agreement and create liability against the Firm. **(Standard Performa as per Annexure O-2).**
- iv) An undertaking by all the partners of the Partnership Firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which HUF was / is a partner/member. Concealment /wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022)
- v) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D)of General Tender Conditions and Instructions to Tenderer(s).
- vi) All details of Firm must be provided in **Annexure D.**

Guidelines for submitting tenders by Partnership Firms and their Eligibility Criteria:

1. The Partnership Firms participating in the tender should be legally valid under the provisions of the Indian Partnership Act.
2. The partnership firm should have been in existence or should have been formed prior to submission of tender. Partnership firm should have either been registered with the Registrar or the partnership deed should have been notarized prior to date of tender opening as per the Indian Partnership Act.
3. Separate identity/ name should be given to the partnership firm. The partnership firm should have PAN/ TAN number in its own name and PAN/ TAN number in the name of any of the constituent partners shall not be considered. The valid constituents of the firm shall be called partners.
4. Once the tender has been submitted, the constitution of the firm shall not normally be allowed to be modified / altered / terminated during the validity of the tender as well as the currency of the contract except when modification becomes inevitable due to succession laws etc., in which case prior permission should be taken from HRIDC and in any case the minimum eligibility criteria should not get vitiated. The re-constitution of firm in such cases should be followed by a notary certified Supplementary Deed. The approval for change of constitution of the firm, in any case, shall be at the sole discretion of HRIDC and the tenderer shall

have no claims what-so-ever. Any change in the constitution of Partnership firm after opening of tender shall be with the consent of all partners and with the signatures of all partners as that in the Partnership Deed. Failure to observe this requirement shall render the offer invalid and the Tender-Securing declaration shall be executed.

5. If any Partner/s withdraws from the firm after opening of the tender and before the award of the contract, the offer shall be rejected and the Tender-Securing declaration shall be executed. If any new partner joins the firm after opening of tender but prior to award of contract, his / her credentials shall not qualify for consideration towards eligibility criteria either individually or in proportion to his share in the previous firm. In case the tenderer fails to inform HRIDC beforehand about any such changes / modification in the constitution which is inevitable due to succession laws etc. and the contract is awarded to such firm, then it will be considered a breach of the contract conditions liable for determination of the contract under Clause 62 of General Conditions of Contract.
6. A partner of the firm shall not be permitted to participate either in his individual capacity or as a partner of any other firm in the same tender.
7. The tender form shall be submitted only in the name of partnership firm. The Tender-Securing Declaration shall be submitted by or as mentioned in tender document. The Tender-Securing Declaration submitted in the name of any individual partner or in the name of authorized partner (s) shall not be considered.
8. One or more of the partners of the firm or any other person (s) shall be designated as the authorized person (s) on behalf of the firm, who will be authorized by all the partners to act on behalf of the firm through a “Power of Attorney”, specially authorizing him / them to submit & sign the tender, sign the agreement, receive payment, witness measurements, sign measurement books, make correspondences, compromise / settle / relinquish any claim (s) preferred by the firm, sign “No Claim Certificate”, refer all or any dispute to arbitration and to take similar such action in respect of the said tender / contract. Such “Power of Attorney” shall be notarized / registered and submitted along with the tender.
9. On issue of Letter of Acceptance (LOA) to the partnership firm, all the guarantees like Performance Guarantee, guarantee for various Advances to the Contractor shall be submitted only in the name of the partnership firm and no splitting of guarantees among the partners shall be acceptable.
10. On issue of Letter of Acceptance (LOA), contract agreement with partnership firm shall be executed in the name of the firm only and not in the name of any individual partner.
11. In case the Letter of Acceptance (LOA) is issued to a partnership firm, the

	<p>following undertakings shall be furnished by all the partners through a notarized affidavit, before signing of contract agreement.</p> <p>(a) <u>Joint and several liabilities</u>: The partners of the firm to which the Letter of Acceptance (LOA) is issued, shall be jointly and severally liable to the HRIDC for execution of the contract in accordance with General and Special Conditions of the Contract. The partners shall also be liable jointly and severally for the loss, damages caused to HRIDC during the course of execution of the contract or due to non-execution of the contract or part thereof.</p> <p>(b) <u>Duration of the partnership deed and partnership firm agreement</u>: The partnership deed/partnership firm agreement shall normally not be modified/alterd/ terminated during the currency of contract and the maintenance period after the work is completed as contemplated in the conditions of the contract. Any change carried out by partners in the constitution of the firm without permission of HRIDC, shall constitute a breach of the contract, liable for determination of the contract under Clause 62 of the General Conditions of Contract.</p> <p>(c) <u>Governing laws</u>: The partnership firm agreement shall in all respect be governed by and interpreted in accordance with the Indian laws.</p> <p>(d) No partner of the firm shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other partner/s and that of the HRIDC.</p> <p>12. Evaluation of eligibility of a partnership firm:</p> <p>Technical and financial eligibility of the firm shall be adjudged based on satisfactory fulfilment of the eligibility criteria laid down in Clause 2.3.2 (A) to 2.3.2 (D) above.</p>
(C)	<p><u>Joint Venture (JV): (Not Applicable as</u> Joint Venture (JV) is not permitted for subject Tender)</p> <p>If the tender is uploaded on behalf of a JV, the tenderer must upload the following documents along with the tender on or before closing of uploading of tender (D3):</p> <p>(i) A copy of MOU/JV Agreement duly notarized in accordance with the Annexure K to “General Tender Conditions and Instructions to Tenderer(s)” of Tender Document, duly signed by the Power of Attorney (POA) holders/authorized signatories of all the constituents/members of the JV.</p> <p>(ii) Power of Attorney/ authorization duly Notarised by all JV constituents, in favour of the individual signing the tender document on behalf of the JV. (Standard Performa as per Annexure O-3)</p>

(iii) An undertaking that the JV is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which HUF was / is a partner/member. Concealment/wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022)

(iv) All details of firm must be provided in **Annexure-D**.

In addition, following documents must be uploaded by the JV firms along with the tender:

A. In case one or more of the members of the JV is/are partnership firm(s), following documents shall be submitted:

(i) Notary certified copy of the Partnership Deed and document(s) in support of registration of firm with registrar of firms viz. Registration certificate/ Form-A & Form-B/Form C (as applicable) etc. issued by registrar of firms;

(ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a Stamp Paper of appropriate value **(Standard Performa as per Annexure O-4)**

(iii) Power of Attorney (duly registered/notarized as per prevailing law) in favour of the individual to sign the MOU/JV Agreement on behalf of the Partnership Firm and create liability against the Firm. **(Standard Performa as per Annexure O-5)**

(iv) An undertaking by all the partners of the Partnership Firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which HUF was / is a partner/member. Concealment /wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022)

(v) All other documents in terms of explanatory notes for Clause 2.3.2 A to 2.3.2 (C) of General Tender Conditions and Instructions to Tenderer(s).

B. In case one or more members of the JV is/are Proprietary Form or HUF, the following documents shall be enclosed:

i) A copy of notarized affidavit on Stamp Paper confirming that his/her Concern is a Proprietary Concern and he/she is Sole Proprietor of the Concern OR he/she is in position of "Karta" of Hindu Undivided Family (HUF) and he/she has the authority, power and consent given by other partners to act on behalf of HUF. **(Standard Affidavit as per Annexure O-6)**

(ii) An undertaking that he/Sole Proprietary firm/HUF is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).

(iii) All other documents in terms of explanatory notes for Clause 2.3.2 A to 2.3.2 (C) of General Tender Conditions and Instructions to Tenderer(s).

C. In case one or more members of the JV is/are Limited companies, the following documents shall be submitted:

(i) A notary certified copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement, authorizing MD or one of the Directors or Managers of the Company to sign JV MOU/Agreement and such other documents required to be signed on behalf of the Company and enter into liability against the Company and/or do any other act on behalf of the Company. **(Standard Performa as per Annexure O-7)**

(ii) Notarised copy of MOA (Memorandum of Association) / AOA (Articles of Association) of the company duly registered as per prevailing law.

(iii) A copy of Certificate of Incorporation

(iii) A copy of Authorization/copy of Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender, sign MOU/JV Agreement on behalf of the company and create liability against the company. **(Standard Performa as per Annexure O-8)**

(iv) An undertaking that the Company is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).

(v) All other documents in terms of explanatory notes for Clause 2.3.2 A to 2.3.2 (C) of General Tender Conditions and Instructions to Tenderer(s).

D. In case one or more members of JV is/are LLP firm, the following documents shall be submitted.

(i) A notarised copy of certificate of incorporation and LLP agreement;

- (ii) A notarised copy of resolution of the partners of LLP, permitting the LLP to enter into a JV agreement, authorising one of the partners of LLP to sign JV MOU/agreement and such other documents required to be signed on behalf of the LLP and to create liability against the LLP and/or to do any other act on behalf of LLP. **(Standard Performa as per Annexure O-12)**
- (iii) A notarised/ registered copy of authorisation/copy of power of attorney issued by the LLP (backed by resolution of partners) in favour of individual to sign the tender, sign MOU/JV agreement on behalf of the LLP and create liability against the LLP. **(Standard Performa as per Annexure O-13)**
- (iv) An undertaking that LLP firm is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022)
- (v) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (C) of General Tender Conditions and Instructions to Tenderer(s).

Guidelines for Participation of Joint Venture (JV) Firms:

1. Separate identity/name shall be given to the Joint Venture.
2. Number of members in a JV shall not be more than three, if the work involves only one department (say Civil or S&T or Electrical or Mechanical) and shall not be more than five, if the work involves more than one Department. One of the members of the JV shall be its **Lead Member** who shall have a majority (at least 51%) share of interest in the JV. The other members shall have a share of not less than 20% each in case of JV with upto three members and not less than 10% each in case of JV with more than three members. In case of JV with foreign member(s), the Lead Member has to be an Indian firm/company with a minimum share of 51%.
3. A member of JV shall not be permitted to participate either in individual capacity or as a member of another JV in the same tender.
4. The tender form shall be purchased and submitted only in the name of the JV and not in the name of any constituent member. The tender form can however be submitted by JV or any of its constituent member or any person authorized by JV through Power of Attorney to submit tender.
5. The Joint Venture Firm shall be required to submit Bid Security along with the tender through e-payment gateway in terms of the provisions contained in **Clause 3.0** (Bid Security) of tender document.
6. A copy of Memorandum of Understanding (MoU) duly executed by the JV

members on a stamp paper, shall be submitted by the JV along with the tender. The complete details of the members of the JV, their share and responsibility in the JV etc. particularly with reference to financial, technical and other obligations shall be furnished in the MoU. (The MoU format for this purpose is enclosed as **Annexure-K**).

7. Once the tender is submitted, the MoU shall not be modified / altered / terminated during the validity of the tender. In case the tenderer fails to observe/comply with this stipulation, the full Bid Security shall be liable to be forfeited.

8. Approval for change of constitution of JV shall be at the sole discretion of the HRIDC. The constitution of the JV shall not be allowed to be modified after submission of the tender bid by the JV, except when modification becomes inevitable due to succession laws etc., provided further that there is no change in qualification of minimum eligibility criteria by JV after change of composition. However, the Lead Member shall continue to be the Lead Member of the JV. Failure to observe this requirement would render the offer invalid.

9. Similarly, after the contract is awarded, the constitution of JV shall not be allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and minimum eligibility criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all consequential penal action as per contract conditions.

10. On award of contract to a JV, a single Performance Guarantee shall be submitted by the JV as per tender conditions. All the Guarantees like Performance Guarantee, Bank Guarantee for Mobilization Advance, Machinery Advance etc. shall be accepted only in the name of the JV and no splitting of guarantees amongst the members of the JV shall be permitted.

11. On issue of LOA (Letter of Acceptance), the JV entity to whom the work has been awarded, with the same shareholding pattern as was declared in the MOU/JV Agreement submitted along with the tender, shall be got registered before the Registrar of the Companies under 'The Companies Act -2013' (in case of Company) or before the Registrar/Sub-Registrar under the 'The Indian Partnership Act, 1932' (in case of Partnership Firm) or under 'The LLP Act 2008' (in case of LLP). A separate PAN shall be obtained for this entity. The documents pertaining to this entity including its PAN shall be furnished to HRIDC before signing the contract agreement for the work. In case the tenderer fails to observe/comply with this stipulation within 60 days of issue of LOA, contract is liable to be terminated. In case contract is terminated HRIDC shall be entitled to forfeit the full amount of the Bid Security and other dues payable

to the Contractor under this contract. The entity so registered, in the registered documents, shall have, inter-alia, following Clauses:

11.1 Joint and Several Liability - Members of the entity to which the contract is awarded, shall be jointly and severally liable to the HRIDC for execution of the project in accordance with General and Special Conditions of Contract. The members of the entity shall also be liable jointly and severally for the loss, damages caused to the HRIDC during the course of execution of the contract or due to non-execution of the contract or part thereof.

11.2. Duration of the Registered Entity - It shall be valid during the entire currency of the contract including the period of extension, if any and the maintenance period after the work is completed.

11.3. Governing Laws - The Registered Entity shall in all respect be governed by and interpreted in accordance with Indian laws.

12. Authorized Member - Joint Venture members in the JV MoU shall authorize one of the members on behalf of the Joint Venture to deal with the tender, sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/contract. All notices/correspondences with respect to the contract would be sent only to this authorized member of the JV.

13. No member of the Joint Venture shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other members and that of the HRIDC in respect of the said tender/contract.

14. All the Members of JV shall certify that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders/contract on the date of opening of bids either in their individual capacity or as a member of the JV in which they were/are members.

15. Credentials & Qualifying Criteria: Technical, financial eligibility and Bid capacity of the JV shall be adjudged based on satisfactory fulfilment of the following criteria:

15.1 Technical Eligibility Criteria ('a' or 'b' mentioned here under):

The technical eligibility for the work as per Clause 2.3.2 (A) of General Tender Conditions and Instructions to Tenderer(s) above, shall be satisfied by either the 'JV in its own name & style' or 'any member having min 26% share'. Each **other** member of JV shall have technical capacity of minimum 10% of the cost

	<p>of work i.e., each JV member must have satisfactorily completed during the last 07 (seven) years, ending last day of month previous to the one in which tender is invited, one similar single work for a minimum of 10% of advertised value of the tender.</p> <p>Note:</p> <p><i>Value of a completed work done by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above-mentioned technical eligibility criteria in the tender under consideration.</i></p> <p>15.2 Financial Eligibility Criteria</p> <p>The JV shall satisfy the requirement of “Financial Eligibility” mentioned at Clause 2.3.2 (B) of General Tender Conditions and Instructions to Tenderer(s) above. The “financial capacity” of the lead partner of JV shall not be less than 51% of the financial eligibility criteria mentioned at Clause 2.3.2 (B) of General Tender Conditions and Instructions to Tenderer(s) above.</p> <p>The arithmetic sum of individual “financial capacity” of all the members shall be taken as JV’s “financial capacity” to satisfy this requirement.</p> <p>Note:</p> <p><i>Contractual payment received by a Member in an earlier JV shall be reckoned only to the extent of the concerned member’s share in that JV for the purpose of satisfying compliance of the above-mentioned financial eligibility criteria in the tender under consideration.</i></p>
(D)	<u>Company registered under Companies Act-2013:</u>
	<p>If the tender is uploaded on behalf of a Company registered under Companies Act-2013, the tenderer must submit/upload along with the tender the following documents on or before closing of uploading of tender (D3):</p> <ul style="list-style-type: none"> (i) Copy of the MOA (Memorandum of Association)/AOA (Articles of Association) of the Company; (ii) A copy of Certificate of Incorporation (iii) A copy of notarized/registered Power of Attorney (Standard Performa as per Annexure O-9) by the Company (backed by the resolution of Board of Directors) (Standard Performa as per Annexure O-10) in favour of the individual signing the tender on behalf of the Company and create liability against the company. (iv) An undertaking that the Company is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).

	<p>(v) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p> <p>(vi) All details of firm must be provided in Annexure-D.</p>
(E)	<u>Registered Society & Registered Trust:</u>
	<p>If the tender is submitted on behalf of a Society, the tenderer must upload these documents on or before closing of uploading of tender (D3),</p> <p>(i) A Notarised copy of the Certificate of Registration;</p> <p>(ii) A Notarised copy of Deed of Formation;</p> <p>(iii) A Notarised/registered copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust.</p> <p>(iv) An undertaking that Registered Society/ Registered Trust is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).</p> <p>(v) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p> <p>(vi) All details of firm must be provided in Annexure-D.</p>
(F)	<u>LLP (Limited Liability Partnership):</u>
	<p>If the tender is submitted on behalf of LLP registered under LLP Act-2008, the Tenderer shall submit along with the tender-</p> <p>(i) Notarised copy of the LLP Agreement;</p> <p>(ii) A Copy of Certificate of Incorporation; and</p> <p>(iii) A copy of notarized/registered Power of Attorney/authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP (Standard Performa as per Annexure O-11)</p> <p>(iv) An undertaking that the LLP is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member. Concealment / wrong information in regard to above</p>

	<p>shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).</p> <p>(v) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p> <p>(vi) All details of firm must be provided in Annexure-D.</p>
(G)	In case of HUF
	<p>(i) A copy of notarized affidavit on Stamp Paper declaring that he who is submitting the tender on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.</p> <p>(ii) An undertaking that the HUF is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India or any other Ministry / Department of Govt. of Haryana from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which HUF was / is a partner/member. Concealment /wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract (April 2022).</p> <p>(iii) All other documents in terms of explanatory notes for Clause 2.3.2 (A) to 2.3.2 (D) of General Tender Conditions and Instructions to Tenderer(s).</p> <p>(iv) All details of firm must be provided in Annexure-D.</p>
2.4.1. 1	<p>After opening of the tender, any document pertaining to the constitution of Sole Proprietorship Firm / Partnership Firm / Registered Company/ Registered Trust / Registered Society / HUF etc. shall be neither asked nor considered, if submitted. Further, no suo moto cognizance of any document available in public domain (i.e., on internet etc.) or in HRIDC's record/office files etc. will be taken for consideration of the tender, if no such mention is available in tender offer submitted.</p> <p>No change in the constitution of the <i>firm/ JV/ sole/ Partnership firm/ Company/ LLP/Society</i> shall be permitted after opening of the tender except where necessitated due to the operation of succession law.</p> <p>Note: If all the requisite documents pertaining to the constitution of the firm/JV/sole/partnership firm/company/LLP/Society etc., as specified in clause 2.4.1 above, are not submitted, offer will be considered as incomplete and shall be summarily rejected.</p>
2.4.2	<p>(i) If it is NOT mentioned in the submitted tender that tender is being submitted on behalf of a Sole Proprietorship firm / Partnership firm / Joint Venture / Registered Company etc., then the tender shall be treated as</p>

	<p>having been submitted by the individual who has signed the tender.</p> <p>(ii) A tender from JV / Partnership firm etc. shall be considered only where permissible as per the tender conditions.</p> <p>(iii) The HRIDC will not be bound by any change in the composition of the firm made subsequent to the submission of tender. HRIDC may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.</p> <p>(iv) The tenderer whether sole proprietor / a company or a partnership firm / joint venture (JV) / registered society / registered trust / HUF etc if they want to act through agent or individual partner(s), should submit along with the tender, a copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person specifically authorizing him/them to submit the tender, sign the agreement, receive money, co-ordinate measurements through contractor's authorized engineer, witness measurements, sign measurement books, compromise, settle, relinquish any claim(s) preferred by the firm and sign "No Claim Certificate" and refer all or any disputes to arbitration. The above power of attorney shall be submitted even if such specific person is authorized for above purposes through partnership deed / Memorandum of Understanding/ Article of Association or such other document, failing which tender is liable to be rejected.</p>
2.4. 3	<p>i. If the tenderer expires after the submission of his tender or after the acceptance of his tender, HRIDC shall deem such tender/contract as cancelled, if a partner of firm expires after the submission of their tender, HRIDC shall deem such tender as cancelled unless the firm retain its character.</p> <p>ii. If the Contractor's firm is dissolved on account of death, retirement of any partners or for any reason what-so-ever before fully completing the whole work or any part of it, undertaken by the principal agreement the surviving partners shall remain jointly/severally and personally liable to complete the whole work to the satisfaction of HRIDC due to such dissolution. The amount of such compensation shall be decided by Chief Project Manager, Haryana Rail Infrastructure Development Corporation, 5th Floor, Railtel Tower, Plot No. 143, Sector 44, Gurugram, Haryana, 122003 and his decision in the matter shall be final and binding on the Contractor.</p> <p>iii. The cancellation of any documents such as power of attorney, partnership deed etc., shall forth be communicated to HRIDC in writing, failing which HRIDC shall have no responsibility or liability for any action taken on the strength of the said documents.</p> <p>iv. The value of contract and the quantities given in the attached schedule of items, rates and quantities are approximate and are given only as a guide. These are subject to variations/additions and omission. The quantum of work</p>

	to be actually carried out shall not form the basis of any dispute regarding the rates to be paid and shall not give rise to claim for compensation on account of any increase or decrease either in the quantity of in the contract value.
2.5	<u>INCOME TAX DEDUCTION:</u>
2.5.1	Under Section 194-C of the Income Tax Act 1961, deduction of 2% plus surcharge as applicable on Income Tax will be made for sums paid for carrying out the work under this contract.
3.0	<u>Bid Security</u>
3.1	The tenderer must deposit Bid Security of Rs.33,53,000/- online failing which the tender shall be summarily rejected .
3.1.2	The tenderer(s) shall keep the offer open for a period of 120 days from the date of opening of the tender in which period tenderer(s) cannot withdraw his/their offer subject to period being extended further, if required, by mutual agreement from time to time. It is understood that the Tender Documents have been sold/issued to the tenderer(s) and tenderer(s) is/are being permitted to in consideration of stipulation on his/their part that after submitting his/their offer, he/they will not resile from his/their offer or modify the terms and conditions thereof in a manner not acceptable to HRIDC. Should the tenderer(s) fail to observe/to comply with the foregoing stipulation or fail to undertake the contract after acceptance of his/their tender, the Tender-Securing Declaration shall be executed and the Tenderer will be declared ineligible for a period of Five (05) years for participation in any Tender invited by HRIDC.
4.0	<u>ACCEPTANCE OF TENDER</u>
4.1	If the tenderer(s) deliberately gives wrong Information/ credentials/ documents in his/their tenders and thereby create(s) circumstances for acceptance of his/their Tender, HRIDC reserves the right to reject such tender at any stage, besides, shall suspend the business for up to 5 (five) years.
4.2	The authority for acceptance of the Tenders rests with Managing Director (HRIDC)/ Director (HRIDC)/ Designated Competent Authority, as the case may be, who does not undertake to assign reasons for declining to consider any particular tender or tenders. He also reserves the right to accept the tender in whole or in part or to divide the tender amongst more than one tenderer if deemed necessary.

4.3	The successful tenderer/s shall be required to execute an agreement with the HRIDC for carrying out of the work as per agreed conditions. The cost of stamp for the agreement will be borne by HRIDC.
4.3.1	The Contractors operations and proceedings in connection with the works shall at all times be conducted during the continuance of contract in accordance with the laws, ordinance, rules and regulations for the time being in force and the Contractor shall further observe and comply with the bye-laws and regulations of the Govt. of India, State Govt. and of Municipal & other authorities having jurisdiction in connection with the works or site over operations such as these are carried out by the Contractor/s and shall give all notice required by such bye-laws and regulations. The Hospital and medical regulations in force for the time being shall also be complied with by the Contractor/s and his workmen.
4.3.2	The Contractor shall be responsible for the observance of the rules and regulations under the mines act and mineral rules and Indian Metallurgical rules and regulations of State/Central Govt. concerned as amended from time to time.
4.3.3	Contractor shall at all times keep the HRIDC administration indemnified against all penalties that may be imposed by the Govt. of India or State Govt. for infringements or any of the clauses of the mines act and rules made there under in respect of quarries from which the ballast for these works is procured.
4.4	The tenderer/s shall not increase his/their rate in case the HRIDC Administration negotiates for reduction of rates. Such negotiations shall not amount to cancellation or withdrawal of the original offer and rates originally quoted will be binding on the tenderer/s.
4.5	The tenderer/s shall submit an analysis of rates if called upon to do so.
4.6	Non-compliance with any of the conditions set forth herein is liable to result in the tender being rejected.
4.7	<u>Variation in quantity</u>
4.7.1	Unless otherwise specified in the special conditions of the contract, the accepted variation in quantity of each individual item of the contract would be up to 25% of the quantity originally contracted, except in case of foundation work (in which no variation limit shall apply). However, the rates for the increased quantities shall be as per clause 4.7.2 below.

4.7.2	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 25% variation in quantity of individual item of works.
4.7.3	In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, then same shall be executed at following rates:
4.7.3.1	Quantities operated in excess of 125% but up to 140% of the agreement quantity of the concerned item, shall be paid at 98% of the rate awarded for that item in that particular tender;
4.7.3.2	Quantities operated in excess of 140% but up to 150% of the agreement quantity of the concerned item shall be paid at 96% of the rate awarded for that item in that particular tender;
4.7.3.3	Variation in quantities of individual items beyond 150% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.
4.7.3.4	<p><u>Variation to quantities of Minor Value Item:</u></p> <p>The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). <i>A minor value item for this purpose is defined as an item whose original agreement value is less than 1% of the total original agreement value.</i></p> <p>a) Quantities operated up to and including 100% of the agreement quantity of the concerned minor value item, shall be paid at the rate awarded for that item in that particular tender;</p> <p>b) Quantities operated in excess of 100% but up to 200% of the agreement quantity of the concerned minor value item, shall be paid at 98% of the rate awarded for that item in that particular tender;</p> <p>c) Variation in quantities of individual minor value item beyond 200% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.</p>
4.7.4	In case of earthwork, the variation limit of 25% shall apply to the gross quantity of earthwork and variation in the quantities of individual classifications of soil shall not be subject to this limit.
4.7.5	In case of foundation work, no variation limit shall apply, and the work shall be carried out by the Contractor on agreed rates irrespective of any variation.

<p>4.7. 6</p>	<p>As far as Standard Schedule of Rates (SSOR) items are concerned, the variation limit of 25% would apply to the value of SSOR schedule(s) as a whole and not on individual SSOR items. However, in case of Non Standard Schedule of Rates (SSOR) items, the limit of 25% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).</p>
<p>4.7. 7</p>	<p><u>Rates for Extra Items of Works:</u> a)Standard Schedule of Rates (SSOR) Items: Any item of work carried out by the Contractor on the instructions of the Engineer which is not included in the accepted Bill(s) of Quantities but figures in the Standard Schedule of Rates (SSOR), shall be executed at the rates set forth in the "Standard Schedule of Rates (SSOR)" modified by the tender percentage as accepted in the contract for that chapter of Standard Schedule of Rates (SSOR). However, the cumulative value of all such extra item(s) together (modified by the respective tender percentage) shall not exceed 10 % of the original contract value.</p> <p>For item(s) not covered in this sub clause, the rate shall be decided as agreed upon between the Engineer and the Contractor before the execution of such items of work as per sub clause (b).</p> <p>b)Other Items: For any item of work to be carried out by the Contractor but not included in the accepted Bill(s) of Quantities and also not covered under sub clause (a) above, the Contractor shall be bound to notify the Engineer at least seven days before the necessity arises for the execution of such items of works that the accepted Bill(s) of Quantities does not include rate or rates for such extra work involved. The rates payable for such items shall be decided at the meeting to be held between the Engineer and Contractor, in as short a period as possible after the need for the special item has come to the notice. In case the Contractor fails to attend the meeting after being notified to do so or in the event of no settlement being arrived at, the Railway shall be entitled to execute the extra works by other means and the Contractor shall have no claim for loss or damage that may result from such procedure.</p> <p>The assessment of rates for extra item(s) shall be arrived at based on the prevailing market rates of labour, machinery & materials and by taking guidance from the following documents in order of priority:</p> <p>i)Analysis of Rates for “Unified Standard Schedule of Rates of Indian Railways (USSOR)”</p> <p>ii)Analysis of Rates for “Delhi Schedule of Rates issued by CPWD (DSR)”</p> <p>iii)Market Analysis.</p>
<p>4.8</p>	<p>Vitiation Clause</p> <p>In the event of vitiation occurring due to increase or decrease in quantities among the first, second and third lowest valid tenderers, the vitiation shall be to contractor's account. The total value of the work done shall be calculated at</p>

	<p>the rate offered by those tenderers and the amount payable shall be limited to the lowest aggregate value as worked out.</p> <p>Vitiation as above shall be worked out as a whole for Agreement including all variations in quantities.</p>
5.0	<u>Security Deposit and Performance Guarantee on Acceptance of Tender</u>
5.1	<u>Security Deposit:</u>
5.1.1	<p>The Security Deposit shall be 5% of the contract value. The Security Deposit shall be 5% of the contract value. The Bid Security submitted by the Contractor with his tender will be retained/encashed by the Railways as part of security for the due and faithful fulfillment of the contract by the Contractor. Provided further that, if Contractor submits the Cash or Term Deposit Receipt issued from a Scheduled commercial bank of India or irrevocable Bank Guarantee Bond from a Scheduled commercial bank of India, either towards the Full Security Depositor the Part Security Deposit equal to or more than Bid Security, the Railway shall return the Bid Security, to the Contractor.</p> <p>Balance of Security Deposit may be deposited by the Contractor in cash or Term Deposit Receipt issued from Scheduled commercial bank of India or irrevocable Bank Guarantee bond issued from Scheduled commercial bank of India, or may be recovered at the rate of 6% of the bill amount till the full Security Deposit is recovered. Provided also that in case of defaulting Contractor, the Railway may retain any amount due for payment to the Contractor on the pending "on account bills" so that the amounts so retained (including amount guaranteed through Performance Guarantee) may not exceed 10% of the total value of the contract.</p> <p>The Irrevocable Bank Guarantee submitted towards Security deposit shall be initially valid up to the stipulated date of Maintenance period plus 60 days and shall be extended from time to time, depending upon extension of contract granted in terms of Clause 17A and 17B of the Standard General Conditions of Contract.</p> <p>Note: Security Deposit deposited in cash by the Contractor or recovered from the running bills of a Contractor or submitted by contractor as Term Deposit Receipt(s) can be refunded/returned to the contractor, in lieu of irrevocable Bank Guarantee bond issued from scheduled commercial bank of India, to be submitted by him, for an amount equal to or more than the already available Security Deposit, provided however that, in a contract of value less than Rs. 50 Crore, such refund/ return of the already available Security Deposit is permitted up to two times and in a contract of value equal to or more than Rs. 50 Crore, such refund / return of the already available Security Deposit is permitted up to three times.</p>

5.1. 2	<p><u>Refund of Security Deposit:</u></p> <p>Security Deposit mentioned in sub-clause 5.1.1 above shall be returned to the Contractor along with or after, the following:</p> <ul style="list-style-type: none"> a) Final Payment of the Contract as per Clause 51(1) of the Standard General Conditions of Contract (April 2022), and b) Execution of Final Supplementary Agreement or Certification by Engineer-in-charge that HRIDC has no claim on Contractor, and c) Maintenance Certificate issued (if applicable), on expiry of the maintenance period as per Clause 50(1) of the Standard General Conditions of Contract (April 2022). in case applicable.
5.1. 3	<p><u>Forfeiture of Security Deposit:</u> Whenever the Contract is rescinded as a whole under clause 62 (1) of GCC (April 2022), the Security Deposit already with HRIDC under the Contract shall be forfeited. However, in case the contract is rescinded in part or parts under clause 62 (1) of GCC (April 2022), the Security Deposit shall not be forfeited.</p>
5.1. 4	<p>No interest shall be payable upon the Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited in terms of Sub-Clause 16 (4)(b) of GCC (April 2022) will be payable with interest accrued thereon.</p>
5.2	<p><u>Performance Guarantee:</u></p> <p>(a) The successful Tenderer shall have to submit a performance Guarantee (PG) within 21 (Twenty-one) days from the date of issue of letter of acceptance (LOA). Extension of time for submission of PG beyond 21 (Twenty-one) days and upto 60 days from the date of issue of LOA may be given by the authority who is competent to sign the contract agreement as per Annexure-S. However, a penal interest of 12% per annum shall be charged for the delay beyond 21(Twenty-one) days, i.e. from 22nd day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of HRIDC, submission of PG can be accepted on the next working day.</p>

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit Bid Security and other dues payable to the contractor against that particular contract, subject to maximum of PG amount. In case a tenderer has not submitted Bid Security on the strength of their registration as a Startup recognized by Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect.

The failed Contractor shall be debarred from participating in re-tender for that work.

(b) The successful Tenderer shall submit the **performance Guarantee (PG)** in any of the following forms, **amounting to 5% of the contract value**:

- i) A deposit of cash;
- ii) Irrevocable Bank Guarantee;
- iii) Government Securities including State Loan Bonds at 5% below the market value;
- iv) Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India;
- v) Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
- vi) Deposit in the Post Office Saving Bank;
- vii) Deposit in the National Savings Certificates;
- viii) Twelve years National Defence Certificates;
- ix) Ten years Defence Deposits;
- x) National Defence Bonds and
- xi) Unit Trust Certificates at 5% below market value or at the face value whichever is less. Also, FDR in favour of FA&CAO (free from any encumbrance) may be accepted.

Note: The instruments as listed above will also be acceptable for Guarantees in case of mobilization advance. All the instruments mentioned in (i) to (xi) above should be in favour of Chief Project Manager, Haryana Rail Infrastructure Development Corporation 5th Floor, RailTel Tower, Plot No. 143, Sector 44, Gurugram, Haryana, 122003

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

	<p>(d) The value of PG to be submitted by the Contractor is based on original contract value and shall not change due to subsequent variation(s) in the original contract value.</p> <p>(e) The Performance Guarantee (PG) shall be released after physical completion of the work based on 'Completion Certificate' issued by the competent authority stating that the Contractor has completed the work in all respects satisfactorily.</p> <p>(f) Whenever the contract is rescinded, the Performance Guarantee already submitted for the contract shall be encashed.</p> <p>(g) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the President of India is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:</p> <p>(i) Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee.</p> <p>(ii) Failure by the Contractor to pay President of India any amount due, either as agreed by the Contractor or determined under any of the Clauses/Conditions of the Agreement, within 30 days of the service of notice to this effect by Engineer.</p> <p>(iii) The Contract being determined or rescinded under clause 62 of these conditions.</p>									
6.0	<u>CONDITIONS OF CONTRACT</u>									
6.1	<p>Except where specifically stated otherwise in the tender documents the work is to be carried out in accordance with (i) Indian Railways Standard General Conditions of Contract, April 2022 amended from time to time & up to date; (ii) Northern Railway Unified Standard Schedule of Rates (Works & Material)-2010 amended from time to time and up to date and (iii) Indian Railway Unified Standard Specifications (Material and Works)-2010 Volume-I and Volume-II. Copies of all these publications can be obtained from the office of Chief Project Manager, Haryana Rail Infrastructure Development Corporation, 5th Floor, RailTel Tower, Plot No. 143, Sector 44, Gurugram, Haryana, 122003 on payment as under:</p> <table border="1"> <tr> <td>(i)</td> <td>Indian Railways Standard General Conditions of Contract, April 2022;</td> <td>Rs.100/-</td> </tr> <tr> <td>(ii)</td> <td>Northern Railway Unified Standard Schedule of rates (Works & Materials)-2010</td> <td>Rs.1000/-</td> </tr> <tr> <td>(iii)</td> <td>Indian Railways Unified Standard Specifications (Material and Works)-2010 volume-I & volume-II</td> <td>Rs.1000/- (Each volume)</td> </tr> </table>	(i)	Indian Railways Standard General Conditions of Contract, April 2022;	Rs.100/-	(ii)	Northern Railway Unified Standard Schedule of rates (Works & Materials)-2010	Rs.1000/-	(iii)	Indian Railways Unified Standard Specifications (Material and Works)-2010 volume-I & volume-II	Rs.1000/- (Each volume)
(i)	Indian Railways Standard General Conditions of Contract, April 2022;	Rs.100/-								
(ii)	Northern Railway Unified Standard Schedule of rates (Works & Materials)-2010	Rs.1000/-								
(iii)	Indian Railways Unified Standard Specifications (Material and Works)-2010 volume-I & volume-II	Rs.1000/- (Each volume)								

	<p>Note: For the reference publication documents in the above table, listed prices are indicative, and the latest rates shall be applicable.</p> <p>Demand for these publications from out will be considered only if a sum of Rs.50/- towards postal charges is also sent with the cost of the books by money order.</p>
6.2	<p>The tender documents referred to in Clause 2.0 above will govern the works done under this contract in addition to documents referred to in clause 6.1 above. Where there is any conflict between General Tender Conditions and instructions to tenderer/s, Special conditions relating to site data and specifications and the stipulations contained in the schedule of rates and quantities on the one hand and the Indian Railway Unified Standard Specifications (Works and Material)-2010 Volume-I & Volume-II, Indian Railways Standard General Conditions of Contract, April 2022 amended from time to time etc. and the Northern Railway Unified Standard Schedule of Rates (Works & Materials) 2010 on the other hand the former shall prevail.</p>
7.0	<u>STUDY OF DRAWINGS AND LOCAL CONDITIONS</u>
7.1	<p>The Drawings of the works can be seen in the office of the Chief Project Manager, Haryana Rail Infrastructure Development Corporation, 5th Floor, RailTel Tower, Plot No. 143, Sector 44, Gurugram, Haryana, 122003. It should be noted by tenderer/s that these drawings are meant for general guidance only and the HRIDC may suitably modify them during the execution of the work according to the circumstances without making the HRIDC liable for any claims on account of such changes.</p>
7.2	<p>The tenderer/s is/are advised to visit the site of work and investigate actual conditions regarding nature and conditions of soil, difficulties involved due to inadequate stacking space, due to build up area around the site, availability of materials water and labour probable sites for labour camps, stores, godowns, etc. They should also satisfy themselves as to the sources of supply and adequacy for their respective purpose of different materials referred in the specifications and indicated in the drawings. The extent of lead and lift involved in the execution of works and any difficulties involved in the execution of work should also be examined before formulating the rates for complete items of work described in the schedule.</p>
7.3	<p><u>Barricading with safety tape at work site</u> Contractor(s) while executing the work near Railway line/Roads shall provide suitable barricading to protect/segregate the existing Railway line/Roads from any damage and un-toward incident at his own cost, as per the directions or plan approved by Engineer-in-charge. No work will be started till the</p>

	barricading is provided and clearance in writing is issued by the Engineer-in-charge.
7.4	<p><u>Safety Gear:</u> During execution of the work, Contractors shall ensure that all safety precautions are taken by their men to protect themselves and site to prevent any untoward incident. In this regard Contractor will ensure that adequate number of safety helmets, safety belts, safety jackets with reflective arm band, rope, ladders emergency light etc. are available at site before the work is actually started. The above list is only indicative and is not exhaustive and safety item will be arranged as per the requirement. HRIDC reserve the right to stop the work in the absence of proper safety gear and no claim shall be entertained in this regard. Decision of the Engineer-in-charge will be final and binding upon the Contractor. The cost of all the safety gear is deemed to have been included in the rates quoted and nothing extra is payable under this contract.</p> <p><u>Note:</u> In addition to the above, the Contractor shall also be required to comply with all the requirements mentioned in the section ‘Safety, Health and Environment (SHE) Protocol to be followed by the Contractor’ of this tender document.</p>
8.0	<u>PERIOD OF COMPLETION</u>
8.1	The entire work is required to be completed in all respects within fifteen (15) months from the date of issue of Acceptance letter. Time is the essence of contract. The Contractor/s will be required to maintain speedy and required progress to the satisfactions of the Engineer-in-charge to ensure that the work will be completed in all respects within the stipulated period failing which action may be taken by the HRIDC Administration in terms of Clause 17 and/or Clause 62 of the Indian Railways Standard General Conditions of Contract, April 2022 amended from time to time & up to date.
8.2	The Contractor/s shall arrange to execute the different items of works in close consultation with and as per directions of the Engineer-in-charge. It may be noted, however, that any delay in the execution of departmental works, for whatsoever reason shall not be accepted as an excuse for non-performance of the contract.
8.3	The Contractor/s will be required to give HRIDC a monthly progress report of the work done during the month on 4 th of the following month. The Contractor will also prepare and submit the programme of work to be done in coming month by 25 th of the preceding month to HRIDC. The programme will be subject to alteration or modifications at the direction of the HRIDC, who may discuss such modifications or alterations with the Contractor as considered

	necessary. Approval of any programme shall not in any way relieve the Contractor from any of his obligations to complete the whole of the work by the prescribed time or extended time, if any.
9.0	<u>RATES FOR PAYMENT</u>
9.1	The rates given in the attached schedule of rates tendered by the Contractor and as accepted by HRIDC will form the basis of payment for such items under this contract.
9.2	No material price variation or wages escalation on any account whatsoever the compensation for `Force Majeure' etc. shall be payable under this contract except price escalation clause payable as per price escalation clause, if any, provided separately in the tender documents.
9.3	<p>The rates for any item of work not included in the (Schedule of Items, Rates and Quantities) and which the Contractor may be called upon to do by HRIDC Administration shall be fixed by the supplementary written agreement between the Contractor and HRIDC before the particular item or items of work is/are executed.</p> <p>In the event of such agreement not being entered into and executed HRIDC may execute these works by making alternative arrangements. HRIDC will not be responsible for any loss or damages on this account.</p>
9.3.1	The Contractor shall work in close co-operation with the Contractors, departmental staff working in the adjacent sections of HRIDC & local authorities.
9.4	It should be specifically noted by the tenderers that no separate loading, unloading and leading charges for materials (which are supplied by the HRIDC) if any shall be paid for by HRIDC and the rates quoted by the tenderer/s shall be inclusive of all these charges.
9.5	The item numbers, description, units and rates given in schedule of rates are as per Northern Railway Unified Standard Schedule of Rates, 2010 and any discrepancy during the execution of the work in the working rates, quantity and units etc. should be rectified by reference to the printed schedule of rates which be treated as authority and will be binding on the Contractor.
9.6	Should there arise any items which may be necessary for the completion of work but which does not appear in the Schedule of Items, Rates and Quantities attached, its rate will be fixed by analysis of actual inputs of all types including

	labour and material or derived from the labour and material rates given in the Northern Railway Unified Standard Schedule of Rates, 2010. The rates for such non-scheduled items occurring during the course of construction shall be payable subject to the approval of the competent authority. No items or work requiring non-schedule rates will be carried out unless ordered to do so by the Engineer-in-charge. The rates derived from the Northern Railway Unified Standard Schedule of Rates, 2010 will be subject to percentage above or below tendered by the Contractor
9.7	Payment for the work done will be made to the Contractor only when the formal agreement has been executed between the parties.
9.8	The rates quoted by the Contractor as per Schedule of Items, Rates and Quantities shall form the basis of 'on account payment' or the various items under this contract.
9.9	In the course of execution of various items of work under schedule of Items, Rates and Quantities running bills payment for partly completed works will be made to the Contractor. The quantum of such work for payment shall be decided by the Engineer-in-charge whose decision shall be final and binding on the Contractor.
9.1 0	No on account payment by HRIDC shall protect the Contractor/s against or prevent HRIDC from recovering from the Contractor/s any over payment made to him/them.
9.1 1	Final payment of the balance amount due, exclusive of the security deposit required in terms of Clause 5.1.1 of these special conditions, will be made after the completion of the entire work and on the certification of the Engineer-in-charge that work has been completed in all respects and found satisfactory. The security deposit will be refunded after the date of completion according to Clause 5.1.2 of these conditions.
9.1 2	<u>SUPPLEMENTARY AGREEMENT</u> After the work is completed and taken over by HRIDC as per terms and conditions of the contract agreement or otherwise concluded by the parties with mutual consent and full and final payment is made by HRIDC to the Contractor for work done under the contract the parties shall execute the supplementary agreement annexed here to as Annexure-B .
9.1 3	Measures to be taken in construction and repairs on roads, embankments, etc.

9.13. 1	All borrow pits dug for and in connection with the construction and repairs of buildings, roads, embankments, etc. shall be deep and connected with each other in the formation of a drain directed towards the lowest level and properly sloped for discharge into a river, stream, channel or drain and no person shall create any isolated borrow pit which is likely to cause accumulation of water which may breed mosquitoes.
9.13. 2	Non fulfilment of the provision in 9.13.1 above shall be a breach of the contract and Contractor/s shall be liable to pay by way of agreed liquidated damages to HRIDC at the rate of 150% of the amount incurred by HRIDC in getting the said job/s done at the risk and cost of the Contractor. Besides this, the Contractor will also be held responsible for any laws for contravening them.
9.13. 3	Note: In addition to the above clauses, the Contractor shall also be required to comply with the relevant requirements mentioned in the section ‘ Safety, Health and Environment (SHE) Protocol to be followed by the Contractor ’ of this tender document.
10. 0	<u>SETTING OUT WORKS</u>
10. 1	The Contractor is to set out the whole of the work in consultation with the engineer or an official to be deputed by the Engineer and during the progress of works to amend on the requisition of the Engineer any errors, which may arise there in and provide efficient and sufficient staff and labour thereon. The Contractor shall also alter or amend any errors in the dimension lines on levels to the satisfaction of the Engineer-in-charge or his authorized representative without claiming any compensation for the same.
10. 2	The Contractor shall provide, fix and be responsible for maintenance of all stocks, templates, profiles, land marks, points, buries, monuments, centre line pillars, reference pillars, etc and shall take all necessary precautions to prevent their being removed altered or disturbed and will be responsible for the consequence of such removal, alterations or disturbance and for their efficient reinstatement.
10. 3	The Contractor shall protect and support, as may be required or as directed by the Engineer, all building, fences, walls, towers, drains, road paths, waterways, foreshores banks, bridges, Railway/HRIDC ground and overhead electric lighting, the telegraphs/ telephones and crossing water service Main pipes and cables and wires and altogether matters and things of whatever kind not otherwise herein specified other than those specified or directed to be removed or altered which may be interfered with or which likely to be affected disturbed or endanger by the execution completion of maintenance of the works and shall

	<p>support provided under this clause to such cases as directed by the Engineer-in-charge. No payment shall be made by HRIDC to the Contractor for these works on account of delay for re-arrangement of road traffic or in the Contractor having to carry out the short lengths and, in such places, as per conditions and circumstances may warrant. These will not form the basis of any claim and or dispute for compensation of any kind.</p>
11.0	<u>DRAWINGS FOR WORKS:</u>
11.1	The HRIDC Administration reserves the right to modify the plans and drawings as referred to in the special data and specifications as also the estimate and specifications without assigning any reasons as and when considered necessary by HRIDC. The percentage rates quoted by the Contractor as may be accepted by HRIDC will, however, hold good irrespective of any changes, modifications, alterations, additions, omissions in the locations of structures and detailed drawings, specifications and/or the manner of executing the work.
11.2	It should be specifically noted that some of the detailed drawings may not have been finalized by HRIDC and will, therefore, be supplied to the Contractor as and when they are finalized on demand. No compensation whatsoever on this account shall be payable by the HRIDC Administration.
11.3	No claim whatsoever will be entertained by the HRIDC on account of any delay or holdup of the work/s arising out of delay in approval of drawings, changes, modifications, alterations, additions, omission and the site layout plans or details drawings and design and or late supply of such material as are required to be arranged by HRIDC or due to any other factor on HRIDC Accounts.
12.0	<u>SUPPLY OF MATERIALS BY THE HRIDC</u>
12.1	If at any time, material which the Contractor/s should normally have to arrange himself/themselves, are supplied by the HRIDC either at the Contractor's request or in order to prevent any avoidable delay in the execution of work due to the Contractor's inability to make adequate timely arrangements for supply thereof or for any other reason, recovery will be made from the Contractor's bill either at the market rate prevailing at the time of supply or at the book rate whichever is greater, plus fixed departmental charges viz. Freight at 5% (8.33% for items of Iron and G.I. pipe steel) incidental charges at 2% and added on total cost supervision charges at 12.50%. No carriage or incidental charges will be borne by the HRIDC. The Contractor cannot, however, claim as a matter of right the issue of such material by HRIDC which he/they is required to arrange himself/themselves in accordance with the terms and conditions of this contract.
12.1.1	In case, cement and/or steel is issued to the Contractor/s free of cost or on cost to be recovered for use on the work, the supply thereof shall be made in stages limited to the quantity/ quantities computed by HRIDC according to the prescribed specifications and approved drawings as per the agreement. The cement and/or steel issued in excess of the requirements as above shall be returned in perfectly good conditions by the Contractor to HRIDC immediately after completion or

	<p>determination of the contract. If the Contractor/s fail/s to return the said stores, then the cost of cement and/or steel issued in excess of the requirement computed by HRIDC according to the specifications and approved drawing will be recovered from the Contractor/s @ twice the prevailing procurement cost at the time of last issue viz. 2 X (purchase price + 5% freight only). This will be without prejudice to the right of HRIDC to take action against the Contractor/s under the conditions of the contract for not doing/completing the work according to the prescribed specifications and approved drawings. If it is discovered that the quantity of cement and or steel used is less than the quantity ascertained as herein before provided, the cost of the cement and/or steel not so used shall be recovered from the Contractor/s on the basis of the above stipulated formula.</p>
12.1.2	<p>The Contractor shall be responsible for the safe transport custody and storage of all HRIDC materials issued to him and he will be liable to make good the loss due to any cause whatsoever, that may be suffered by HRIDC on this account. Special precautions should be taken in respect of cement while transporting cement, steps should be taken to safeguard against cement becoming damp or wet due to moisture or rain. The Contractor will also be responsible for storing cement in damp proof conditions at site of work at his own cost in accordance with the standard specifications. The Engineer shall decide whether the cement stored in the godown is fit for the work and his decision shall be final and binding on the Contractor/s.</p>
12.2	<p>The Contractor should supply a schedule showing the requirements of explosives/materials required to be supplied to him by HRIDC based on detailed plans. The materials will be arranged by HRIDC according to this schedule unless otherwise modified by HRIDC due to additions or alterations in the approved plans. No claim whatsoever will be entertained by HRIDC on account of late supply of such materials as are required to be arranged by the HRIDC.</p>
12.3	<p><u>SUPPLY OF CEMENT AND STEEL BY HRIDC</u></p>
	<p>2.3.1 Cement, Mild Steel/H.Y.S.D./Bars/RSJ/MS Plate, etc. to be supplied by the HRIDC if available in the store of HRIDC to the extent as would become a part of the work involved in the tender schedule will be supplied by the HRIDC free of cost or on cost recovery basis as the case may be as per relevant clauses of special conditions relating to site data and specifications at construction store godown. The Contractor will be required to lead the same to the site of work at his own cost subject to payment at the rate as quoted against relevant item of N.S. Items in the Schedule of Items, Rates & Quantities.</p> <p>2.3.2 Cement and steel required for temporary works timbering, shuttering, centering, scaffolding, etc. will have to be arranged entirely by the Contractor at his own cost.</p> <p>2.3.3 The empty cement bags for the supply of cement by HRIDC shall be property of the Contractor and the cost of the same shall be recovered at the rate of Rupees 2 (Two) per empty cement bag from the 'on account bill' of the Contractor in case the cement is supplied in Jute bags. No recovery on account of empty cement bags shall be made from the Contractor, in case the cement is</p>

	supplied in H.D.P.E. bags. HRIDC, however, reserves its right to take empty bags as are in good conditions and in that case no recovery will be made for bags so taken back. These rates will apply for bags deteriorated while in use and not found acceptable to the HRIDC so taken back from the Contractor.
13.0	<u>SUPPLY OF MATERIALS BY THE CONTRACTOR/S</u>
	<p>13.1 Materials used in the work by the Contractor shall conform to the Northern Railway Standard Specifications and the relevant I.S.I./I.R.S Specifications and should be approved by the Engineer-in-charge before utilizing them on works.</p> <p>13.2 It should be clearly understood that the tendered rates include wastage and wash away due to rains, storms, floods or any other cause whatsoever.</p> <p>13.3 No loading, unloading, lead, lift, stacking, octroi, sales tax, toll tax, royalty or any other charges will be paid for the materials, tools and plants and tools arranged and brought by the Contractor to the site of work.</p> <p>13.4 Stage payment for supply of steel by the Contractor (For works above Rs.15 Crores): Stage payment limited to 75% of the rate of steel awarded in the contract (as a separate NS item for the purpose) shall be made to the Contractor for steel physically brought by the Contractor to the site (even before its actual use in the work) subject to following:-</p> <ol style="list-style-type: none"> The material shall be strictly in accordance with the contract specifications. The material shall be delivered at site and properly stored under covered sheds at Contractor's cost and protected against damage, deterioration, theft, fire etc. to the satisfaction of the engineer in charge. The Contractor shall store the bulk material in the measurable stacks. The quantities of materials shall be brought to the site only in such instalments that would facilitate smooth progress of work and consumed in reasonable time. The decision of Engineer-in-charge regarding quantity of steel to be brought to the site shall be final and binding to the Contractor. Proper accountal in the material registers to be maintained in the prescribed format at the site for the receipt and use of the material on day to day basis. Submission of indemnity bond with validity up to the completion/extended period in the prescribed format at the Contractor's cost, vesting the ownership of such material with the HRIDC. Submission of insurance policy with a validity up to the completion/extended period at the Contractor's cost, in favour of HRIDC against damage, deterioration, theft, fire etc. <p>The balance payment shall be released only after material is actually consumed in the work. The price variation claim for steel would continue to be governed as per extant PV clause and with reference to delivery at site.</p>
14.0	<u>SERVICE ROADS</u>

	<p>14.1 The Contractor/s shall make his/their arrangements for service roads, paths etc for carrying his/their tools and plants, labour and materials, etc. and will also allow HRIDC use of such paths and service roads, etc for plying its own vehicles free of cost. The tenderer/s will be deemed to have included the cost of making any service roads, roads or paths, etc., that may be required by him/them for plying his/their vehicles for the carriage of his/their men and materials, tools, plants and machinery for successful completion of the work. Similarly, any other feeder road connecting any of the existing roads will be made by the Contractor at his/their own cost including any compensation that may be required to be paid for the temporary occupation and or usage of Govt. and or private land and without in any way involving HRIDC in any dispute for damage and/or compensation.</p> <p>14.2 In case HRIDC has its own paths, service roads, the Contractor/s will be allowed to use of such paths or service roads free of cost. He/They shall, however, in no way involve HRIDC in any claims or dispute of whatever kind due to the inaccessibility of such paths or service roads or due to their poor condition and or maintenance or their being to be blocked and/or closed.</p> <p>14.3 The rates quoted by the Contractor as per Schedule of Items, Rates and Quantities shall form the basis of 'on account payment' or the various items under this contract.</p> <p>14.4 In the course of execution of various items of work under schedule of Items, Rates and Quantities running bills payment for partly completed works will be made to the Contractor. The quantum of such work for payment shall be decided by the Engineer-in-charge whose decision shall be final and binding on the Contractor.</p> <p>14.5 No 'on account payment' by HRIDC shall protect the Contractor/s against or prevent HRIDC from recovering from the Contractor/s any over payment made to him/them.</p> <p>14.6 Final payment of the balance amount due, exclusive of the security deposit required in terms of Clause 5.1.1 of these special conditions, will be made after the completion of the entire work and on the certification of the Engineer-in-charge that work has been completed in all respects and found satisfactory. The security deposit will be refunded after the date of completion according to Clause 5.1.2 of these conditions.</p>
15.0	<u>EMERGENCY WORK</u>
	<p>15.1 In the event of any accident or failure occurring in or about the work of arising out for or in connection with the construction completion or maintenance of the work which in the opinion of the Engineer require immediate attention, HRIDC may be with its own workmen or other agency execute or partly execute the necessary work or carry out repairs if the Engineer-in-charge considers that the</p>

	<p>Contractor is not in a position to do so in time and charge the cost thereof, as to be determined by the Engineer-in-charge to the Contractor.</p> <p>15.2 In terms of Clause 32 of Indian Railways Standard General Conditions of Contract, April 2022 amended from time to time & upto date, the material and plants brought by the Contractor on the site or land occupied by the Contractor in connection with the works and intended to be used for execution thereof shall immediately, they are brought upon the sites of this said land be deemed to be the property of HRIDC, vehicles, equipment, plant and machinery of the Contractor can be drafted by HRIDC Administration at their discretion in case of accidents, natural calamities involving human lives, breaches, stoppage of train operations or any contingencies which require such requisitioning as essential. The decision in this regard of the Engineer-in-charge or his superiors shall be final and beyond the ambit of arbitration clause.</p> <p>15.3 In terms of clause 2.3.1, tenderer is required to submit the list of equipment, machinery, construction tools and plants available/ deployed at site. The successful tenderer on receipt of acceptance letter and conveying their consent shall submit name, addresses, telephone numbers, Fax number/E Mail address of the persons to be contacted for requisitioning the above items as detailed in forgoing clause 15.2 and notify from time to time if any change in the list of equipment/machinery or the addresses/ individuals to the Engineer-in charge in writing. The name and address, telephone numbers and the Contractor officials name shall also be displayed at the site of work.</p>
16.0	<u>NIGHT WORK</u>
	If the Engineer-in-charge is satisfied that the work is not likely to be completed in time except by resorting to night work, he may order for the night work as per requirement, without confirming any right on the Contractor for claiming any extra payment for the same.
17.0	<u>DISPOSAL OF SURPLUS EXCAVATED MATERIALS</u>
	<p>17.1 The Contractor shall at all-time keep the site free from all surplus earth, surplus materials, and all rubbish which shall arise from the works and should dispose of the surplus excavated materials as ordered by the Engineer-in-charge failing which it will be done at the cost of the Contractor and cost will be deducted from his dues.</p> <p>17.2 The Contractor shall within 15 days of completion of entire works remove all unused and surplus materials tools and plants staging and refuge or other materials produced by his operations and shall leave the site in a clear and tidy conditions.</p>
18.0	<u>SITE INSPECTION REGISTER</u>
	18.1 A site inspection register will be maintained by the Engineer or his representative in which the Contractor will be bound to sign day to day entries made by the Engineer or his representative. The Contractor is required to take note of the instructions given to him through the site inspection register and

	<p>should comply with the same within a reasonable time. The Contractor will also arrange to receive all the letters etc. issued to him at the site of works.</p> <p>18.2 The Contractor shall, from time to time (before the surface of any portion or the site is interfered with or the work thereon begun) take such levels as the Engineer may direct in his presence or any person authorised by him in writing. Such levels approved and checked by him or such authorised persons shall be recorded in writing and signed by the Contractor and shall form the basis of the measurements. Immediately before any portion of the work, below water level is started, the existing water levels are to be taken and recorded in a similar manner.</p>
19.0	The Contractor shall have to make and maintain at his own cost suitable approach road and path, etc for proper inspection of the various works. He shall also provide all facilities as required by the Engineer such as Ladder and other appliances for satisfactory inspection of the works and places where materials for the work are stored or prepared.
20.0	<p><u>OPENING UP OF WORK OR MATERIALS FOR INSPECTION OR TEST:</u></p> <p>Should the Engineer-in-charge, or any representative consider it necessary for the purpose of enabling inspection of tests analysis to be made to verify or ascertain the quality of any part of the works or of any materials, the Contractor shall as and when required by the Engineer or his representatives open up the work or materials for inspection or test or analysis, pull down or cut into any part of the work to make such openings, into under or through any part of the works as may be directed and shall provide all things facilities which in the opinion of the Engineer or his representative are necessary and essential for the purpose of inspection or test or analysis of the works or of any part thereof or the materials, or of workmanship and the Contractor shall close up, cover, rebuild and made good the whole at his own cost, as and when directed by and to the satisfaction of Engineer provided always that of the work in the opinion of the Engineer is found to his satisfaction and in accordance with the contract. The excess expenditure in such examination, inspection or test shall, upon the certificate of the engineer, be borne by HRIDC.</p>
21.0	GENERAL
	<p><u>21.1 PROVISION OF LIGHT SIGNALS ETC.</u></p> <p>The Contractor/s shall make such provision for lighting the works, materials and plant and provide all such marks and lights, signals and other appliances as may be necessary or as may be required by the Engineer or other responsible authorities during the execution completion and maintenance of the work and shall provide all labour, stores, etc. required for their efficient working and use at any time of day or night. He/They shall also provide all arrangement of every description of watching and maintenance required in connection with the foregoing and all other services for protection of any securing all dangerous places whether to the Contractor's workmen or to other persons and or vehicular traffic until the work is certified by the engineer to have been completed and taken over in accordance with the contract.</p>

	<p>21.2 The Contractor/s will provide upon the works to the satisfaction of the Engineer and at such, places as he may nominate, proper and sufficient lifesaving, fire-fighting and first aid appliances which shall at all times be available for use.</p> <p>21.3 LABOUR CAMPS</p> <p>The Contractor shall at his own expense make adequate arrangements for the housing, supply of drinking water and provision of latrines and urinals for his staff and workmen, directly or through the petty Contractors or sub-contractors and for temporary creche (Bal-Mandir) where 50 or more women are employed at a time. Suitable sites on Railway land, if available, may be allotted to the Contractor for the erection of labour camps, either free of charge or on such terms and conditions that may be prescribed by the Railway. All camp sites shall be maintained in clean and sanitary conditions by the Contractor at his own cost.</p> <p>Land for setting up a workshop by the Contractor or for his labour camp or for any other purpose, shall have to be arranged by the Contractor at his own cost and under his own arrangements. The Contractor, however, will be permitted to make use of MSIL land to the extent that can be made available to him free of cost, by HRIDC/MSIL in the vicinity of the site of works. The Contractor/s shall at all times be responsible for any damage or trespass committed by his agent and workmen for carrying out the work.</p> <p>21.4 The HRIDC Administration may recommend to the concerned authorities the issue of necessary transport permits for the work. The Contractor shall, however, furnish full justification for the above facilities, to enable the HRIDC Administration to address the State Government or other authorities in this connection. The Contractor shall also maintain regular log book of receipts and issue of the materials to work, if so required by the Civil Authorities. No claim would, however, be entertained by the non-issue of any priority permits or owing to any interruption in supply.</p> <p>21.5 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.</p> <p>21.6 Note: In addition to the above clauses, the Contractor shall also be required to comply with the requirements mentioned in the section ‘Safety, Health and Environment (SHE) Protocol to be followed by the Contractor’ of this tender document.</p>
22.0	<u>Extension of Time in Contracts</u>
	<p>22.1 17A Extension of Time in Contracts: Subject to any requirement in the contract as to completion of any portion or portions of the works before completion of the whole, the Contractor shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may</p>

	<p>be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:</p> <p>(i) Extension due to Modification: If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise.</p> <p>(ii) Extension for Delay not due to Railway or Contractor: If in the opinion of the Engineer, the progress of work has any time been delayed by any act or neglect of Railway's employees or by other Contractor employed by the Railway under Sub-Clause (4) of Clause 20 of these Conditions or in executing the work not forming part of the contract but on which Contractor's performance necessarily depends or by reason of proceeding taken or threatened by or dispute with adjoining or to neighbouring owners or public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Engineer pending arbitration or in consequences of the Contractor not having received in due time necessary instructions from the Railway for which he shall have specially applied in writing to the Engineer or his authorized representative then upon happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer within 15 days of such happening, but shall nevertheless make constantly his best endeavours to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Engineer to proceed with the works. The Contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time.</p> <p>(iii) Extension for Delay due to Railways: In the event of any failure or delay by the Railway to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the Railway due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the Contractor to damages or compensation therefor, but in any such case, the Railway may grant such extension or extensions of the completion date as may be considered reasonable.</p> <p>22.2 The Contractor shall indicate the period for which the work is likely to be delayed and shall seek extension of time as may be considered necessary under clause 17A(i) or/and 17A(ii) or/ and 17A(iii) above, as soon as the cause thereof shall arise and, in any case, not less than one month before the expiry of the date fixed for completion of the works. The Engineer shall consider the same and shall grant and communicate such extension of time as in his opinion is reasonable having regard to the nature and period of delay and the type and quantum of work affected thereby. No other compensation shall be payable for works so carried forward to the extended period of time; the same rates, terms</p>
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and conditions of contract being applicable, as if such extended period of time was originally provided in the original contract itself. The non-submission of request for extension or submission of request within less than one month before the expiry of the date fixed for completion of the works, shall make him ineligible for extension under these sub clauses, subject to final decision of Engineer.

17B Extension of Time with Liquidated Damages (LD) for delay due to Contractor: The time for the execution of the work or part of the works specified in the contract documents 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 other than the reasons specified in Clause 17 and 17A, the Railway may, if satisfied that the works can be completed by the Contractor within reasonable short time thereafter, allow the Contractor for further extension of time (Proforma at Annexure-VII) as the Engineer may decide. On such extension the Railway will be entitled without prejudice to any other right and remedy available on that behalf, to recover from the Contractor as agreed damages and not by way of penalty for each week or part of the week, a sum calculated at the following rates of the contract value of the works. For the purpose of this Clause, the contract value of the works shall be taken as value of work as per contract agreement including any supplementary work order/contract agreement issued. Provided also, that the total amount of liquidated damages under this condition shall not exceed 5% of the contract value or of the total value of the item or groups of items of work for which a separate distinct completion period is specified in the contract.

S.No.	Duration of extension of time under Clause 17-B	Rate of Liquidated Damages
(i)	Up to Twenty Five percent of original period of completion including period of extension of time granted under Section 17A(i)	As decided by Engineer, between 0.01% to 0.05% of contract value for each week or part of the week
(ii)	Above Twenty Five percent but upto Fifty percent of original period of completion including period of extension of time granted under Section 17A(i)	0.10 % of contract value for each week or part of the week
(iii)	Above Fifty percent of original period of completion including period of extension of time granted under Section 17A(i)	0.30 % of contract value for each week or part of the week

Provided further, that if the Railway is not satisfied that the works can be completed by the Contractor and in the event of failure on the part of the contractor to complete the work within further extension of time allowed as

	<p>aforesaid, the Railway shall be entitled without prejudice to any other right or remedy available in that behalf, to appropriate the contractor's Security Deposit and rescind the contract under Clause 62 of these Conditions, whether or not actual damage is caused by such default.</p> <p>NOTE: In a contract, where extension(s) of time have been allowed once under clause 17B, further request(s)</p>
<p>23.0</p>	<p><u>TAXES</u></p> <p>The Contractor shall be governed by the Taxes applicable at the place of actual execution of work.</p>
	<p>23.1 Taxes on works contract, octroi, royalty, toll tax, local tax on materials as well as services and any other tax levied by Central Govt /State Govt. or local bodies shall be borne by the tenderer. No part of such taxes on Contractor's labour/material or any other account will be paid by HRIDC. Therefore, the Contractor must ascertain the various taxes levied by the concerned Govt or local bodies at the place of execution of work and take into account for the same while quoting the rates. This should be kept in view before tendering.</p> <p>Note:</p> <ol style="list-style-type: none"> i. Tenderer to please note that all rates given in BOQ are inclusive of GST and all other taxes. ii. Works contracts shall be treated as supply of services as per Schedule –II GST Act. iii. GST Act and Rules issued from time to time by the Government/ concerned authorities shall be applicable. iv. Contractor/ suppliers/ service providers/ parties shall register their firms State wise under GSTIN (GST Identification Number) and submit at the time of opening of tender or before the signing the agreement and shall mention place of business, registered office address and email id. <p>23.2 If rates of existing GST or cess on GST for Works Contract is increased or any new tax /cess on Works Contract is imposed by Statute after the date of opening of tender but within the original date of completion/date of completion extended under clause 17 & 17A of GCC and the Contractor thereupon properly pays such taxes/cess, the Contractor shall be reimbursed the amount so paid. Further, if rates of existing GST or cess on GST for Works Contract is decreased or any tax/cess on Works Contract is decreased / removed by Statute after the date of opening of tender, the reduction in tax amount shall be recovered from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.</p> <p>23.3 HRIDC will deduct the taxes specified by the concerned Central Govt/State Govt/Local bodies if required to be deducted at source under the relevant laws as applicable on the date of making the payment. HRIDC will issue a certificate regarding tax so deducted. It will be responsibility of the Contractor to make</p>

	<p>further correspondence with concerned Govt or local bodies to ensure full deposition of the tax or for claiming a refund, if due, as is done in case of income tax.</p> <p>23.4 In case any tax is notified to be deducted at source from a specified date and certain payments have already been made in the period that lapsed between the date of applicability of tax and the actual date of implementation of the same, tax required to be deducted at source for this period will be recovered from the subsequent payment.</p> <p>23.5 Implementation of “The Building and Other Construction Workers (RECS) Act, 1996 and The Building and Other Construction Workers Welfare Cess Act, 1996 in HRIDC Contracts: “The tenderer for carrying out any construction work in Haryana (name of the State) must get themselves registered from the Registering Officer under Section-7 of the Building and other Construction Workers Act, 1996 and rules made thereto by the Haryana Govt. and submit certificate of Registration issued from the Registering Officer of the Haryana Govt. (Labour Deptt). As per this Act, the tenderer shall be levied a cess @1% (if applicable) of the cost of construction work, which would be deducted from each bill. Cost of material, when supplied under a separate schedule item, shall be outside the purview of cess.”</p>
24.0	<p>All payments in respect of the contract during the currency of the contract shall be made through National electronic Fund transfer (NEFT) or Real Time Gross Saving (RTGS). The successful tenderer on award of contract must submit RTGS/NEFT Mandate Form complete in all respects as detailed at Annexure-J of the tender document. However, if the facility of RTGS/NEFT is not available at a particular location, the payment shall be made by Cheque. In such case the successful tenderer on award of contract will have to furnish Contractor’s Bank Account Number and Name of the Bank against which all payments in respect of the contract during the currency of contract shall be made.</p>
25.0	<p><u>Damage to the HRIDC/Railway Property:</u> Contractor(s) executing the works adjacent to the existing Railway track for e.g. doubling, gauge conversion, yard re-modelling etc. will take all care for avoiding any damage to the underground/OH services such as S&T cables, electric cables/wires, pipelines/sewer lines etc. They must ensure that the work is started after obtaining clearance in writing from the Engineer-in-charge regarding the route for signalling/ Electrical cables/water supply/ sewer lines etc. However, if any damage occurs during execution, he will immediately report the same to the Engineer-in-charge and stop the work further till clearance for restarting the work is given by the Engineer-in-charge. It may be further noted that if it is proved that damage is occurred due to the negligence on the part of the Contractor, the cost of the damage will be recovered from him/them. The decision of Engineer-in-charge will be final and binding upon the Contractor(s).</p>
26.0	<u>Applicable for tender documents downloaded from internet</u>

26.1	Master copy of the tender document, which shall be also available for Tenderers to download online, will be available in the office of Chief Project Manager, Haryana Rail Infrastructure Development Corporation Limited. The bid documents submitted by the Tenderer(s) should strictly match the requirements of the tender uploaded by HRIDC. In case of any discrepancy in the submissions by Tenderers, their offers shall be summarily rejected and no claim on this account will be entertained by HRIDC.
27.0	DELETED
28.0	Defect Liability Period: 12 Months from the date of completion of work as certified by Engineer-in-charge of the work.
29.0	Price Variation Clause:
	<p>29.1 Price Variation Clause (PVC) shall be applicable only in tender having advertised value above Rs. 2 Crores and having completion period above 12 months. Provided further that, in a contract where PVC is applicable, following shall be outside the purview of price adjustments (i.e. shall be excluded from the gross value of the work for the purpose of price variation) :</p> <p>a) Materials supplied by Railway to the Contractors, either free or at fixed rate;</p> <p>b) Any extra item(s) included in subsequent variation falling outside the purview of the Bill(s) of Quantities of tender, under clause 39. (1)(b) of these Standard General Conditions, unless applicability of PVC and 'Base Month' has been specially agreed, while fixing the rates of such extra item(s).</p> <p>29.2 Base Month: The Base Month for 'Price Variation Clause' shall be taken as the one month prior to closing of tender, unless otherwise stated elsewhere. The quarter for applicability of PVC shall commence from the month following the Base month. The Price Variation shall be based on the average Price Index of the quarter under consideration.</p> <p>29.3 Validity: Rates accepted by Railway Administration shall hold good till completion of work and no additional individual claim shall be admissible except:</p> <p>(a) Payment/recovery for increase/decrease in GST on works contract or imposition/removal of any tax/cess on Works Contract as per Clause 37,</p> <p>(b) Payment/recovery for overall market situation as per Price Variation Clause given hereunder.</p> <p>29.4 Components of various items in a contract on which variation in prices be admissible, shall be steel, cement, ferrous material, non-ferrous material, insulators, zinc and other materials, labour, plant & machinery, fuel, explosives, detonators etc. Adjustment for variation in prices of these items shall be determined in the manner prescribed.</p> <p>29.5 No price variation shall be admissible for fixed components.</p>

29.6 The percentages of various components in various type of works shall be as specified for all item (s)/ Bill(s) of Quantities in tender document and the same shall be fixed as per table & classifications given below:

(I) For Civil Engineering Works:

S N	Classification		1A, 2 & 3A	4A	5A	6A	7	8A	9A	1B, 3B, 4B, 5B, 6B 8B & 9B	1C, 3C, 4C, 5C, 6C, 8C & 9C	3D, 4D, 5D, 6D, 8D & 9D	3E, 4E, 5E, 6E, 8E & 9E
	Components	*											
1	Fixed	*	15	15	15	15	15	15	15	15	15	15	15
2	Labour	L _c	15	20	25	15	15	15	20	5	5	10	25
3	Steel	S _c	0	0	20	0	0	0	0	75	0	50	0
4	Cement	C _c	0	0	15	0	0	0	0	0	75	0	0
5	Plant Machinery & Spares	PM _c	35	15	0	20	20	20	30	0	0	10	30
6	Fuel & Lubricants	F _c	25	15	10	35	35	35	15	5	5	10	20
7	Other materials	M _c	10	15	15	15	15	15	20	0	0	5	10
8	Detonators & Explosive	E _c	0	20	0	0	0	0	0	0	0	0	0
Total			100	100	100	100	100	100	100	100	100	100	100

*It shall not be considered for any price variation

The classification mentioned in the table above represents following type of item(s) in the work(s) –

1. Earthwork in Formation

1A All Item(s) excluding 1B or/and 1C

1B Item(s) for supply of Steel

1C Item(s) for supply of Cement

2. Ballast Supply Works

3. Tunnelling Works (Without Explosives)

3A All Item(s) excluding 3B or/and 3C or/and 3D or/and 3E

3B Item(s) for supply of Steel

3C Item(s) for supply of Cement or/and Grout

3D Item(s) for Fabrication & Erection of Structures including supply of Steel

3E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

4. Tunnelling Works (With explosives)

4A All Item(s) excluding 4B or/and 4C or/and 4D or/and 4E

4B Item(s) for supply of Steel

4C Item(s) for supply of Cement or/and Grout

4D Item(s) for Fabrication & Erection of Structures including supply of Steel

4E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

5. Building Works

5A All Item(s) excluding 5B or/and 5C or/and 5D or/and 5E

5B Item(s) for supply of Steel

5C	Item(s) for supply of Cement
5D	Item(s) for Fabrication & Erection of Structures including supply of Steel
5E	Item(s) for Fabrication & Erection of Structures excluding supply of Steel.
	6. Bridges & Protection work
6A	All Item(s) excluding 6B or/and 6C or/and 6D or/and 6E
6B	Item(s) for supply of Steel
6C	Item(s) for supply of Cement
6D	Item(s) for Fabrication, Assembly, Erection& Launching of Girders including supply of Steel.
6E	Item(s) for Fabrication, Assembly, Erection & Launching of Girders excluding supply of Steel.
	7. Permanent Way linking
	8. Platform, Passenger Amenities
8A	All Item(s) excluding 8B or/and 8C or/and 8D or/and 8E 8B Item(s) for supply of Steel item/fittings
8C	Item(s) for supply of Cement Item
8D	Item(s) for Fabrication & Erection of Structures including supply of Steel
8E	Item(s) for Fabrication & Erection of Structures excluding supply of Steel
	9. Any Other Works not covered in Classification 1 to 8
9A	All Item(s) excluding 9B or/and 9C or/and 9D or/and 9E
9B	Item(s) for supply of Steel
9C	Item(s) for supply of Cement or/and Grout
9D	Item(s) for Fabrication & Erection of Structures including supply of Steel
9E	Item(s) for Fabrication & Erection of Structures excluding supply of Steel
29.7 Formulae: The Amount of variation in prices in several components (labour material etc.) shall be worked out by the following formulae:	
(i)	$L = \frac{(W \text{ or } W_S \text{ or } W_C \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (L_Q - L_B) \times L_C}{L_B \times 100}$
(ii)	$M = \frac{(W \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (M_Q - M_B) \times M_C}{M_B \times 100}$
(iii)	$F = \frac{(W \text{ or } W_S \text{ or } W_C \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (F_Q - F_B) \times F_C}{F_B \times 100}$
(iv)	$E = \frac{(W \text{ or } W_S \text{ or } W_C \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (E_Q - E_B) \times E_C}{E_B \times 100}$
(v)	$PM = \frac{(W \text{ or } W_S \text{ or } W_C \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (PM_Q - PM_B) \times PM_C}{PM_B \times 100}$
(vi)	$S = \frac{(W \text{ or } W_S \text{ or } W_{SF}) \times (S_Q - S_B) \times S_C}{S_B \times 100}$
(vii)	$C = \frac{(W \text{ or } W_C) \times (C_Q - C_B) \times C_C}{C_B \times 100}$
Note: Formulae at (vi) & (vii) can be used directly for working out PVC payment for supply of Steel and Cement respectively where separate items for 'supply of Steel' and 'supply of Cement' are provided in the tender schedule. However,	

where combined/mix items including supply of steel and Cement' are provided in tender schedule, the amount of price variation for the component of supply of steel and Cement shall be adjusted (paid/recovered) separately using the above formulae at (vi) & (vii) with following stipulations:-

(a) Steel work items:

Price variation for the component of supply of steel shall be worked out from formulae at (vi) above taking value of steel supplied component i.e. Sw as **82%** of value combined/ mix item and for balance portion/component (labour, material, fuel Plant Machinery), price variation shall be worked out using general PVC formulae for remaining **18%** of gross value of combined/mix item executed.

(b) Concrete work items (MCC, RCC, PSC):

Price variation for the component of supply of Cement shall be worked out from formulae at (vii) above taking value of Cement supplied component i.e. Cv as **40%** of value of combined/mix item and for balance portion/component (labour, material, fuel), price variation shall be worked out using general PVC formulae for remaining **60%** of gross value of combined/mix item executed.

For Railway Electrification Works:

$$(i) \quad T = [0.4136x(C_Q - C_B) / C_B] \times 85$$

$$(ix) \quad R = [0.94x(R_T - R_O) / R_O + 0.06x(Z_T - Z_O) / Z_O] \times 85$$

$$(x) \quad N = [(P_T - P_O) / P_O] \times 85$$

$$(xi) \quad I = [(I_T - I_O) / I_O] \times 85$$

$$(xii) \quad G = [(M_Q - M_B) / M_B] \times 85$$

$$(xiii) \quad Er = [(L_Q - L_B) / L_B] \times 85$$

Where,

Where,

- L Amount of price variation in Labour
M Amount of price variation in Materials
F Amount of price variation in Fuel
E Amount of price variation in Explosives
PM Amount of price variation in Plant, Machinery and Spares
S Amount of price variation in Steel Supply Item
C Amount of price variation in Cement Supply Item
T Percentage variation payable on the gross value of bill of Concreting (Bill(s) of Quantities for concrete items)
R Percentage variation payable on the gross value of bill of Ferrous Items (Bill(s) of Quantities for ferrous items)
N Percentage variation payable on the gross value of bill of Non-Ferrous Items (Bill(s) of Quantities for non-ferrous items)
I Percentage variation payable on the gross value of bill of Insulator (Bill(s) of Quantities for Insulator items)
G Percentage variation payable on the gross value of bill of General Works (Bill(s) of Quantities for General items)
Er Percentage variation payable on the gross value of erection (Bill(s) of Quantities for Erection Item)
Lc % of Labour Component in the item(s)
Mc % of Material Component in the item(s)
Fc % of Fuel Component in the item(s)
Ec % of Explosive Component in the item(s)
PMc % of Plant, Machinery and Spares Component in the item(s)
Sc % of Steel Supply item Component in the item(s)
Cc % of Cement Supply item Component in the item(s)
W Gross value of work done by Contractor as per on-account bill(s) excluding the Gross value of work under W_S or/and W_C or/and W_{SF} or/and W_F or/and W_{SFL} or/and W_{FL} and cost of materials supplied by Railway either free or at fixed rate,

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29.8 The demands for escalation of cost shall be allowed on the basis of provisional indices made available by Reserve Bank of India. Any adjustment needed to be done based on the finally published indices shall be made as and when they become available.

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

SL	Classification	Rates to be used for calculating S_Q or S_B
1.	Reinforcement bars and otherrounds	Average of per tonne rates of 10mm dia TMT & 25mmdia TMT; confirming IS1786; Fe 500

		2.	All types and sizes of angles, channels and joists	Average of per tonne rates of 'Angle 75x75x6mm, MildSteel Plate 10mm thickness and Channel 150x75mm; confirming IS2062, E250 Gr "A"
		3.	All types and sizes of plates	Average of per tonne rates of 'MS Plates 10mm thickness and 25mm thickness; confirming IS2062, E250 Gr "A"
		4.	Any other section of steel not covered in the above categories	Average of price for the 3 categories covered under SL 1, 2 & 3 in this table.
	<p>29.10 Price Variation During Extended Period of Contract</p> <p>The price adjustment as worked out above, i.e. either increase or decrease shall be applicable upto the stipulated date of completion of work including the extended period of completion where such extension has been granted under Clause 17A of the Standard General Conditions of Contract. However, where extension of time has been granted due to Contractor's failure under Clause 17B of the Standard General Conditions of Contract, price adjustment shall be done as follows:</p> <p>a. In case the indices increase above the indices applicable to the last month of original completion period or the extended period under Clause 17A, the price adjustment for the period of extension granted under Clause 17B shall be limited to the amount payable as per the Indices applicable to the last month of the original completion period or the extended period under Clause 17A of the Standard General Conditions of Contract; as the case may be.</p> <p>b. In case the indices fall below the indices applicable to the last month of original/ extended period of completion under Clause 17A, as the case may be; then the lower indices shall be adopted for the price adjustment for the period of extension under Clause 17B of the Standard General Conditions of Contract.</p> <p>Note:- 1) The 1st date of measurements of on account bills shall be taken in to account for consideration of quarter of the bill.</p> <p>2) In case of final bill, the date of completion of work or 1st date of measurements of final bill, whichever is earlier shall be taken in to account for consideration of quarter of the bill.</p>			
30.0	Mobilization Advance: (For Contract Value Rs. 25 Crores and Above) No Mobilization Advance shall be paid			
31.0	<u>System of Measurement of work by Contractors in works Contract</u>			

	<p>31.01 Measurement of work by Contractors shall be allowed only in works tender having value Rs.20 crore or more.</p> <p>31.02 Measurement recorded by the Contractor shall be test checked by HRIDC within 45 days of submission of measurements.</p> <p>31.03 While processing 75% provisional payment bill, concerned DGM/ HRIDC shall ensure that supply items given by Contractor are commensurate with requirement for execution of works.</p> <p>31.04 For such contracts, Contractor shall be responsible for carrying out measurements of work executed and recording of measurements for the release of on account/final payment. In such cases, the detailed procedure for recording of measurements, provisional payment, test check and final payment shall be as follows:</p> <p>Contractor's Measurement Book:</p> <p>31.1 HRIDC shall arrange Contractor's measurement book (CMB), each having sheet No.1A to 4A (Form E 1313), followed by 100 machine number pages (Form E 1313, sheet No.5A). On the top of each sheet of CMB, there shall be provision for recording the name of the work, agreement number, name of Contractor and CMB number.</p> <p>31.2 CMBs shall be printed in such a way so as to keep a clear margin of 50mm on the left side of page. Further, the left side shall have pinhole tear line at a distance of 15mm from edge for ease of taking out sheets from these books. The binding shall be within 15mm of the margin available between edge and pinhole tear line. This shall ensure availability of minimum 35mm clear margin to re-bind measurement books later on.</p> <p>Movement and upkeep of Contractor's Measurement Book:</p> <p>31.3 Chief project Manager(CPM)/HRIDC shall hand over required No. of CMBs to Deputy General Manager (DGM)/ HRIDC after taking receipt of the same on sheet No.2A (Form E.1313) for further issuance to Contractor time to time as per progress of work.</p> <p>31.4 CMB shall be registered with unique No. in the Register of Measurement Books (Form E.1314) maintained in the office of CPM/HRIDC. Separate accountal of CMBs for each agreement shall be maintained in the office of CPM/HRIDC and DGM/ HRIDC.</p> <p>31.5 In case of change of 'Contractor's authorized engineer', fresh approval shall be taken from CPM/HRIDC before recording of measurement.</p>
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31.6 While issuing the CMB to Contractor, DGM/ HRIDC shall take out sheet No.2A to 4A from the CMB, take receipt of CMB from Contractor on sheet No.3A (Form E 1313), and keep the same in safe custody.

31.7 Similar system as for CMB, shall be followed for issuing Field Book/Level Book (E.1317/A) to Contractor for recording of levels in the field book/level book.

Measurement:

31.8 The Contractor's authorized engineer shall record the measurements in CMB neatly in his own handwriting, without any use of eraser/overwriting, without use of any typing fluid or any such thing. All cuttings shall be initialled. No page shall be damaged/destroyed. No page shall be kept blank in between the measurement.

31.9 The Contractor shall communicate the date of measurement to DGM/ HRIDC in sufficient advance to witness any measurement. Witnessing of measurement by HRIDC is not compulsory except for initial levels in case of earthwork and hidden measurements. Initial levels of earthwork and hidden measurements are to be recorded in the presence of HRIDC officials and test checked as prescribed.

31.10 In on account contract certificate, measurement shall be recorded for the items and quantities to be paid in the concerned-on account contract certificate.

31.11 However, in every 4th on account contract certificate and final contract certificate, the recording of measurement for works executed shall include all the items and their quantity included in previous on account contract certificates, irrespective of whether to be paid or not in the current On Account Contract Certificate/Final Contract Certificate.

31.12 No payment shall be processed on Lump sum measurement taken by Contractor's authorized engineer except for earthwork. For earthwork, every 4th bill shall be based on actual levels taken and detailed calculations carried out for the work done.

31.13 The Contractor shall take out carefully from CMB the used pages of CMB with one extra blank page for processing the bill; staple them for submission to DGM/ HRIDC along with bill, duly signing the measurements. The Contractor shall keep a photocopy of the measurements with him for future reference.

31.14 At the time of submission of final bill, the Contractor shall submit all the remaining CMBs (unused as well as partially used) with him along with bill to DGM/ HRIDC.

31.15 The Contractor shall submit required copies of invoice and on account contract certificate/final contract certificate (similar to form E.1337 and Form E.1338) to the DGM/ HRIDC duly marking them – original or duplicate copy. Original shall be used for release of payment whereas duplicate copies shall be used for record purpose in different offices.

31.16 In case Contractor requires provisional payment of on-account bill, the Contractor shall submit his invoice and provisional on account contract certificate for 75% of amount of work done (before deduction of taxes). The Contractor shall write 'For Provisional Payment' on top of such on-account contract certificate.

31.17 DGM/ HRIDC while issuing receipt of stapled sheets of CMB to Contractor shall clearly record the same in sheet 4 (E.1314) of concerned CMB, kept in the office of DGM/ HRIDC.

Release of Provisional Payment

31.18 AM/HRIDC with 5-year experience' (AM/HRIDC) and DGM/ HRIDC shall sign and record a certificate on the original provisional 'on account contract certificate' as under:

“Certified that the payment being made is less than the amount due for the quantities of works executed by the Contractor”.

In case of payment of earthwork items in any contract, calculation of quantity of such items along with field book/level book must be enclosed. This shall be cross checked, as considered appropriate by AM/HRIDC & DGM/ HRIDC, to ensure that no excess payment is being made. At this stage no test check of measurements by HRIDC is required.

31.19 DGM/ HRIDC shall keep a copy of Contractor's invoice and provisional on account contract certificate in his office, and submit original invoice and original provisional on account contract certificate along with required number of duplicate copies, and used sheets of CMB to the CPM/HRIDC unit for passing the bill and release of payment.

31.20 The provisional on account contract certificate shall be passed by CPM/HRIDC and payment shall be released by associate finance based on above certification of Executive/HRIDC and DGM/ HRIDC. After release of payment, blank sheet of CMB (if any) shall be crossed by CPM/HRIDC before sending the measurement sheets back to DGM/HRIDC for carrying out required test checks. At this stage measurements shall not be crossed.

31.21 No provisional payment shall be allowed in final contract certificate. Further, once provisional payment has been released in any on-account contract certificate, the next on account contract certificate can be raised by Contractor only when accounts of previous on account certificate (Provisional as well as remaining payment) has been finalized.

Test Check

31.22 Necessary test checks shall be carried out by the AM/Executive/HRIDC and DGM/ HRIDC for the works done before full payment of on-account contract certificate/final contract certificate. AM/Executive/HRIDC and DGM/ HRIDC shall communicate the date of test checks to Contractor in advance. The Contractor can accompany during test check. The Contractor shall provide support staff and all required tools and plants to facilitate test check by HRIDC officials.

31.23 The stipulated test checks for DGM/ HRIDC and AM/Executive/ HRIDC Level is tabulated as under:

S.No.	Description of works	Test Check in term of % of value by	
		AM/Executive/HRIDC	DGM/ HRIDC
(a)	Measurement of Ballast, pitching stone, Earthwork and hidden items	100%	100%
(b)	Measurement of all other items	100%	20%
(c)	Initial and Final levels along centre line for earthwork in embankment and cutting	100%	100%
(d)	Intermittent levels along centre line for earthwork in embankment and cutting	100%	20%
(e)	Initial, intermittent and final levels except centre line for earthwork in embankment and cutting	100%	20%

Note: The check regarding levels of earthwork invariably shall be carried out in cross sections having heavy cross slopes. Higher officials of HRIDC can test check the work at their discretion.

31.24 Contractor's recorded measurement sheets shall be checked for any corrections/over writing during test check. All the corrections/over writing shall be initialled by AM/Executive/HRIDC.

	<p>31.25 The discrepancy noted (if any) during test check of recorded measurement shall be communicated by DGM/ HRIDC to the Contractor.</p> <p>31.26 In case of discrepancy noticed during test check, the Contractor shall submit original and required copies of fresh invoice of amount corrected for discrepancy, and in case provisional payment has been released earlier, the required copies of fresh invoice of remaining amount corrected for discrepancy (if any), along with on account/final contract certificate to DGM/ HRIDC.</p> <p>Full payment of On Account Contract Certificate/ Final Contract Certificate</p> <p>31.27 DGM/ HRIDC shall submit original copy of invoice and on account contract certificate of remaining amount/Final Contract Certificate, along with required number of duplicate copies and used sheets of CMB (all used/blank CMBs in case of final contract certificate), duly signed by AM/Executive/HRIDC and DGM/ HRIDC to the CPM/HRIDC for passing the bill and release of payment.</p> <p>31.28 Once the payment is released, DGM/ HRIDC shall return back the used sheets of CMB to DGM/HRIDC for safe custody, duly crossing of measurements by finance officer.</p> <p>31.29 Once all used sheets of a particular CMB is received back by DGM/ HRIDC from CPM/ HRIDC, the DGM/ HRIDC shall re-bind all 100 pages of CMB along with sheet No.1A to 4A for submission of CMB to CPM/HRIDC office. GM/P HRIDC office shall record the receipt of same in sheet No.2A of CMB and Register of Measurement Books (Form E1314).</p> <p>31.30 The final contract certificate shall be passed by CPM/HRIDC only after receipt of all CMBs (used/blank) from DGM/ HRIDC.</p> <p>31.31 The above provisions shall be applicable to all the departments of HRIDC and to be executed through equivalent authorities of respective departments.</p> <p>31.32 If any false entry is done by the Contractor in the measurement book then 5% of the running bill amount shall be deducted by HRIDC and no reasoning in this regard shall be accepted from Contractor. This provision shall be applicable till the end of the contract period and shall also be applicable to the bills submitted by the Contractor in the past during the currency of the contract.</p> <p>31.33 The officers for test checks and passing of bills shall be decided by HRIDC administration as per extant policy of HRIDC.</p>
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Haryana Rail Infrastructure Development Corporation
CMB No.

CONTRACTOR'S MEASUREMENT BOOK

Department.....

Division/Construction Unit.....

Name of work.....

Agreement No.

Name of Agency

Name to whom issued.....

Designation

Date of issue

Date of return

Haryana Rail Infrastructure Development Corporation
CMB No.

CONTRACTOR'S MEASUREMENT BOOK

Project Unit
Name of work.....
Agreement No.
Name of Agency

Issued to
.....
(Name & Designation)

..... On.....
(station) (date)

Received by
.....
.....
(Signature)

.....
(Designation) (Station) On
(date)

Date of first entry.....
Date of last entry.....
Date received back in Project Unit
Office after completion of book

Certified that this Measurement Book contains 100 machine numbered pages from
.....to.....(both pages inclusive) which have been counted by me and
are correct.

Signature.....
Date..... Designation.....

Haryana Rail Infrastructure Development Corporation
CMB No.

CONTRACTOR'S MEASUREMENT BOOK

Name of work.....
 Agreement No.
 Name of Agency
 Issued to
 (Contractor's name)
 on.....
 (station) (date)

Certified that this Measurement Book contains 100 machine numbered pages fromto..... (both pages inclusive) which have been counted by me and are correct. No sheet is torn.

I understand that the measurement book is very important document and hence I shall ensure its proper upkeep and safe custody.

Received by
 (Signature of Contractor)

 (Name) (Station) (Date)

Date of first entry.....
 Date of last entry.....

Certified that this Contractor's Measurement Book pages returned by Contractor have been counted by me and are correct. The details of pages received by me is as under:

S.No.	On Account Bill No.	Page no. From..... To.....	No. of pages	Date of receipt in DGM/HRIDC office	Sign & Designation of HRIDC Official
1					
2					
3					
4					
5					

Haryana Rail Infrastructure Development Corporation
CMB No.

CONTRACTOR'S MEASUREMENT BOOK

Name of work.....

Agreement No.

Name of Agency

INDEX OF M.B.

S.No.	Particulars of entries – running or final	Agreement or work order ref.	Page		Remarks
			From	To	

Haryana Rail Infrastructure Development Corporation

CMB No.

Project unit

Space for Machine numbering with six digits unique number

CONTRACTOR'S MEASUREMENT BOOK

Name of work.....

Agreement No.

Name of Agency

INDEX OF M.B.

Particulars	No.	L.	B.	D.	Contents

32.0	SETTLEMENT OF DISPUTES
	<p>(i)This clause is applicable in the tender having advertised value less than or equal to Rs 50 Crore.</p> <p>(ii)All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during the progress of the work or after its completion and whether before or after the determination of the contract, shall be referred by the Contractor to the "Chief Project Manager" or "Deputy General Manager" through “Notice of Dispute” provided that no such notice shall be served later than 30 days after the date of issue of Completion Certificate by the Engineer. Chief Project Manager or Deputy General Manager shall, within 30 days after receipt of the Contractor’s “Notice of Dispute”, notify the name of conciliator(s) to the Contractor.</p> <p>(iii)The Conciliator(s) shall assist the parties to reach an amicable settlement in an independent and impartial manner within the terms of contract.</p>

(iv) If the parties reach agreement on a settlement of the dispute, they shall draw up and sign a written settlement agreement duly signed by Engineer In-charge, Contractor and conciliator(s). When the parties sign the settlement agreement, it shall be final and binding on the parties.

(v) The parties shall not initiate, during the conciliation proceedings, any arbitral or judicial proceedings in respect of a dispute that is the subject matter of the conciliation proceedings.

(vi) The conciliation proceedings shall be terminated as per Section 76 of 'The Arbitration and Conciliation Act, 1996.

Matters Finally Determined by the Railway: All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during the progress of the work or after its completion and whether before or after the determination of the contract, shall be referred by the Contractor to the MD/HRIDC and the MD/HRIDC shall, within 120 days after receipt of the Contractor's representation, make and notify decisions on all matters referred to by the Contractor in writing provided that matters for which provision has been made in Clauses 7(j), 8, 18, 22(5), 39.1, 39.2, 40A, 43(2), 45(i)(a), 55, 55-A(5), 57, 57A, 61(1), 61(2), 62(1), 63(iv) and 63.2.11 of the Standard General Conditions of Contract or in any Clause (stated as excepted matter) of the Special Conditions of the Contract, shall be deemed as 'excepted matters' (matters not arbitrable) and decisions of the HRIDC authority, thereon shall be final and binding on the Contractor; provided further that 'excepted matters' shall stand specifically excluded from the purview of the Dispute Adjudication Board (DAB) and Arbitration.

Dispute Adjudication Board (DAB): This clause is applicable in the tender having advertised value more than Rs 50 Crore.

1) Any dispute/s if not settled with the Engineer, shall be referred to DAB.

The DAB shall consist of a panel of three Retired Railway Officers, retired not below senior administrative grade (SAG). The DAB shall be formed within 90 days of signing of Contract Agreement. For this purpose, a panel of DAB members shall be maintained in the MD's office. The complete panel, which shall not be less than five members, shall be sent by CPM/HRIDC to the Contractor to nominate one member of the DAB from the panel as Contractor's nominee within two weeks of receipt of the panel. On receipt of Contractor's nominee, the CPM/HRIDC shall nominate one member from the same panel as HRIDC nominee for the DAB. Both above nominees shall jointly select presiding member of the DAB from the same panel.

2) The appointment of DAB shall be effectuated by way of a tri-partite agreement among the Railway, Contractor and the respective DAB members. The terms of the remuneration of each member shall be as fixed by Ministry of Railways from time to time. Each party shall be responsible for paying one-half of this remuneration.

3) If one or more of the members appointed refuses to act as DAB member, or is unable or unwilling to perform his functions as DAB member for any reason whatsoever or dies or in the opinion of the CPM/HRIDC fails to act without undue

delay, the parties shall terminate the mandate of such DAB member and thereupon new DAB member shall be appointed in the same manner, as the outgoing DAB member had been appointed.

4) The appointment of any member may be terminated by mutual agreement of both Parties, but not by the HRIDC or the Contractor acting alone. Unless otherwise agreed by both the Parties, the appointment of the DAB (including each member) shall expire upon expiry of this Contract Agreement.

5) Before start of DAB proceedings, each DAB member shall give the following certificate to the HRIDC and the Contractor:

“I have no any past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind. Further, I have no any past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality.”

6) DAB proceedings shall be conducted as decided by the DAB. The DAB shall give its decision within 90 days of a Dispute referred to it by any of the Parties, duly recording the reasons before arriving at the decision. The DAB shall decide the issue within terms and conditions of the contract. This time limit shall be extendable subject to the Parties mutual agreement.

7) The DAB decision shall not be binding on both the Parties. In case any party is not satisfied by the decision of DAB, then the aggrieved party may approach Arbitral Tribunal for arbitration proceedings.

8) No dispute shall be referred to Arbitral Tribunal unless the same has been referred to DAB for adjudication. However, in case DAB is not formed due to any reason, the disputes can be directly referred to Arbitral Tribunal to adjudicate the dispute.

9) In the specific cases of any misconduct by any of the members of the DAB, the parties shall have the right to specifically bring it to the notice of the DAB such conduct, through a statement filed with necessary documents in proof of such misconduct and the DAB, after taking NOTICE of such conduct initiate the replacement of the member concerned, in the same manner the member to be replaced was appointed.

	<p>10) Once the decision is given by DAB, DAB cannot review the decision at its own or on the request of one party, unless both parties agree for review of decision by DAB.</p> <p>11) In case DAB decision is not challenged by either party within 180 days of receipt of decision of DAB, the decision shall be considered as final and parties would be barred for referring the same to Arbitral Tribunal for adjudication.</p> <p>12) The obligation of the HRIDC and the Contactor shall not be altered by reasons of issue being or under reference to DAB.</p> <p>13) The DAB shall conduct the proceedings at any convenient venue which shall be decided by DAB in consultations with parties.</p> <p>14) It is a term of this contract that the Parties shall not approach any Court of Law for settlement of such disputes or differences unless an attempt has first been made by the parties to settle such disputes or differences through DAB and Arbitral Tribunal.</p>
32.1	<p>Mutual Settlement</p> <p>All such disputes or differences shall in the first place be referred by the Contractor to HRIDC in writing for resolving the same through mutual discussions, negotiations, deliberation etc. associating representatives from both the sides and concerted efforts shall be made for reaching amicable settlement of disputes or differences.</p>
32.2	<p>Conciliation/Arbitration</p>
32.2.1	<p>It is a term of this contract that Conciliation/ Arbitration of disputes shall not be commenced unless an attempt has first been made by the parties to settle such disputes, within 120 days of submission of monthly statement of such claim, through mutual settlement.</p>
32.2.2	<p>In the event of failure to resolve any dispute or difference between the parties hereto as to the construction or operation of this contract, or the respective rights and liabilities of the parties on any matter in question, dispute or difference on any account or as to the withholding by HRIDC of any certificate to which the contractor may claim to be entitled to, through mutual settlement, the Contractor may refer such matters to the Managing Director/HRIDC in writing within 60 days from the date of failure of amicable settlement of such disputes or differences for settlement through Conciliation.</p> <p>If the efforts to resolve all or any of the disputes through Conciliation fail, the Contractor may refer to the Managing Director of HRIDC for settlement of such disputes or differences through Arbitration. No disputes or differences shall be referred to Arbitration after expiry of 60days from the date of notification of the failure of Conciliation.</p>
32.2.3	<p>The demand for Conciliation or Arbitration shall specify the matters which are in question, or subject of the dispute or difference as also the amount of claim item wise. Only such dispute(s) or difference(s) in respect of which the demand has been made,</p>

	together with counter claims or set off, given by HRIDC, shall be referred to Conciliation or Arbitration and other matters shall not be included in the reference.
(a)	The Arbitration proceeding shall be assumed to have commenced from the day, a written and valid demand for arbitration is received by HRIDC.
(b)	The claimant shall submit his claim stating the facts supporting the claim along with all relevant documents and the relief or remedy sought against each claim within a period of 30 days from the date of appointment of the Arbitral Tribunal
(c)	HRIDC shall submit its defence statement and counter claim(s), if any, within a period of 60 days of receipt of copy of claim from Tribunal thereafter unless otherwise extension has been granted by Tribunal.
(d)	Place of Arbitration: The conciliation/ arbitration proceedings shall be held at a place decided by Conciliator/ Arbitrator.
32.2.4	<p>No new claim shall be added during proceedings by either party. However, a party may amend or supplement the original, claim or defence thereof during the course of arbitration proceedings subject to acceptance by Tribunal having due regard to the delay in making it.</p> <p>The contractor shall not be entitled to make any claim whatsoever against HRIDC or by virtue of or arising out of this contract, nor shall the HRIDC entertain or consider any such claim, if made by contractor, after he shall have a “No Claim” in favour of the HRIDC in such form as shall be required by the HRIDC after the works are finally measured. The contractor/s shall be debarred from disputing the correctness of the items covered by “No Claim” Certificate or demanding a clearance to arbitration in respect thereof.</p> <p>The total value of claims submitted by the contractor/s shall be restricted to 20% of original contract value. The total claims more than 20% of original contract value shall be treated as expected matter and shall not be referred to arbitration.</p>
32.2.5	If the contractor(s) does/do not present his/their specific and final claim in writing, within a period of 90 days of receiving the intimation from HRIDC that the final bill is ready for payment, he/they will be deemed to have waived his/their claim(s) and HRIDC shall be discharged and released of all liabilities under the contract in respect of these claims.
32.3	<p>No suspension of work</p> <p>The Obligations of HRIDC, the Engineer-in-charge and the Contractor shall not be altered by reasons of conciliation / arbitration being conducted during the progress of works. Neither party shall be entitled to suspend the work on account of conciliation/ arbitration and payments to the Contractor shall continue to be made in terms of the contract.</p>
32.4 (a)	<p>Sole Conciliator/Sole Arbitrator:</p> <p>In cases where the total value of all claims/ counterclaims in question added together does not exceed INR 1.00 Crore (Rupees One Crore), the Arbitral Tribunal shall consist of a sole arbitrator who shall be an officer of HRIDC not below GM level, nominated by the Managing Director.</p>

The sole arbitrator shall be appointed by the Managing Director of HRIDC within 60 days from the day when a written and valid demand for arbitration is received by HRIDC.

Arbitration Tribunal:

In cases where the total value of all claims/counterclaims exceeds INR 2.00 Crore (Rupees Two Crores), the Arbitral Tribunal shall consist of a panel of three Officers not below GM level.

For this purpose, HRIDC will send a panel of more than 3 names to the contractor, within 60 days from the day when a written and valid demand for arbitration is received by HRIDC. Contractor will be asked to suggest to the Managing Director at least 2 names out of the panel for appointment as contractor's nominee within 30 days from the date of dispatch of the request by HRIDC. The Managing Director shall appoint at least one out of them as the contractor's nominee and will, also simultaneously appoint the balance number of arbitrators either from the panel or from outside the panel, duly indicating the 'presiding arbitrator' from amongst the 3 arbitrators so appointed. The Managing Director shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of contractor's nominees. While nominating the arbitrator sit will be necessary to ensure that one of them is from the Accounts Department. An officer of AGM rank of the Accounts Department shall be considered of equal status to the GM of the other departments of HRIDC for the purpose of appointment of arbitrator.

The minimum qualifications of Conciliator/ Arbitrator shall be graduate in the respective field. He will be a working officer with a minimum of 20years' service. He should be clear from the vigilance angle and should be a person with reputation of high technical/ commercial ability and integrity. Also, he should not have associated with the contract to which the dispute pertains.

If one or more of the arbitrators appointed as above refuses to act as arbitrator, withdraws from his office as arbitrator or vacates his/their office/offices or is/are unable or unwilling to perform his functions as arbitrator for any reason whatsoever or dies or in the opinion of the Managing Director fails to act without undue delay, the Managing Director shall appoint new arbitrator/ arbitrators to act in his/their place in the same manner in which the / arbitrators had been appointed. Such reconstituted Tribunal may, at its discretion, proceed with the reference from the stage at which it was left by the previous arbitrator(s).

The Arbitral Tribunal shall have power to call for such evidence by way of affidavits or otherwise, as the Arbitral Tribunal shall think proper, and it shall be the duty of the parties hereto to do or cause to be done all such things as may be necessary to enable the Arbitral Tribunal to make the award without any delay. The Arbitral Tribunal should record day-to-day proceedings. The proceedings shall normally be conducted on the basis of documents and written statements.

	While appointing arbitrator(s) under sub clause 32.4(a)(i), 32.4(a)(ii) and 32.4(a)(iv) above, due care shall be taken that he/they is/are not the one/those who had an opportunity to deal with the matters to which the contract relates or who in the course of his/their duties as HRIDC employee expressed views on all or any of the matters under disputes or differences. The proceedings of the Arbitral Tribunal or the award made by such Tribunal will however, not be invalid merely for the reason that one or more arbitrator had, in the course of his service, opportunity to deal with the matters to which the contract relates or who in the course of his/their duties expressed views on all or any of the matters under dispute.
32.4 (b)	<p>) The arbitral award shall state item-wise, the sum and reasons upon which it is based. The analysis and reasons shall be detailed enough so that the award could be inferred there from.</p> <p>) A party may apply for corrections of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award of tribunal within 60 days of the receipt of the award.</p> <p>) A party may apply to tribunal within 60 days of the receipt of award to make an additional award as to claims presented in the arbitral proceedings but omitted from the arbitral award.</p>
32.5	In case of the Tribunal, comprising of three members, any ruling or award shall be made by a majority of members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.
32.6	Where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period till the date on which the award is made.
32.7	The cost of arbitration shall be borne by the respective parties. The cost shall inter-alia include fee of the Conciliator/ Arbitrator(s) as per the rates fixed by HRIDC from time to time and the fee shall be borne equally by both the parties. Further, the fee payable to the arbitrator(s) would be governed by the instructions issued on the subject by HRIDC from time to time irrespective of the fact whether the arbitrator(s) is/are appointed by HRIDC or by the court of law unless specifically directed by Hon'ble court otherwise on the matter.
32.8	<p>Settlement through Court:</p> <p>It is a term of this contract that the Contractor shall not approach any Court of Law for settlement of such disputes or differences unless an attempt has first been made by the parties to settle such disputes or differences through clauses 32.1 and 32.2.</p>
32.9	The Conciliation and/or Arbitration proceedings shall be governed by the provisions of the Indian Arbitration and Conciliation Act 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force.
32.10	The language of proceedings, documents or communications shall be in English and the award shall be made in English in writing.
32.11	<p>Award to be final and binding on all parties:</p> <p>An arbitral award shall be final and binding on all parties, as per provision of Arbitration and Conciliation Act, 1996 with latest amendment.</p>

32.12	Exception: For settlement of disputes with central PSUs, the procedure as per existing orders of Permanent Machinery for Arbitration (PMA), Bureau of Public Enterprises, Govt. of India shall be followed.				
32.13	JURISDICTION OF COURTS: In case of any legal dispute, Jurisdiction of Courts in Gurugram/Chandigarh, Haryana area only shall be applicable				
33.0	Minimum Requirement of Project Personnel				
The Contractor shall deploy the minimum Project Personnel as per the requirement mentioned in the table below:					
S. No	Position	Minimum No. of Personnel	Minimum Educational Qualifications	Total years of work Experience	Minimum years of relevant work experience
1	Project Manager	01	Graduation in Civil Engineering	15	8 years in Railway infrastructure projects
2	Track Engineer	01	Diploma/Graduation in Civil Engineering	12/10	6/4 years in Railway Track Linking works
3	Procurement Manager	01	Graduation in any discipline	10	6 years experience in Railway infrastructure projects
4	QA/QC Engineer	01	Graduation in Civil Engineering	6	3 years in infrastructure projects of railways/highways/expressways
5	Site Engineer (Civil)	03 (one each for earthwork, track and Bridge/Building/structures)	B.tech in Civil Engineering/Diploma in Civil Engineering	05/07	02 /04 years in infrastructure projects of railways
The Contractor shall submit CVs as per Annexure-3 of the project personnel and obtain approval from HRIDC for their deployment before commencement of work.					
Recovery for Non Deployment of Project Personnel will be done on prorata basis for the period of non-deployment and the rate of recovery shall be as follows:					
S. No	Position	Recovery/Personnel/Per month (INR)			
1	Project Manager	1,00,000.00			

	2	Track Engineer	75,000.00	
	3	Procurement Manager	50,000.00	
	4	QA/QC Engineer	50,000.00	
	5	Site Engineer (Civil)	25,000.00	
	Chief Project Manager HRIDC, 5 th floor, 143, RailTel Tower, Sector-44, Gurugram-122003			
	Signature of the Tenderer/s Address _____			

Name of the Bank:
Managing Director,
Haryana Rail Infrastructure Development Corporation Limited

Bank Guarantee Bond No.:

Date:

PERFORMANCE GUARANTEE BOND

In consideration of the Haryana Rail Infrastructure Development Corporation (hereinafter called "HRIDC") having agreed under the terms and conditions of agreement/Contract Acceptance letter No. dated..... made between..... (Designation & address of contract signing Authority) and (here in after called "the said Contractor(s)" for the work..... (here in after called "the said agreement") having agreed for submission of a irrevocable Bank Guarantee Bond for Rs..... (Rs.....only)) as a performance security Guarantee Bond from the Contractor (s) for compliance of his obligations in accordance with the terms & conditions in the said agreement.

1. We.....(indicate the name of the Bank) hereinafter referred to as the Bank, undertake to pay to the Government an amount not exceeding Rs..... (Rs.....only) on demand by the Government.
2. We..... (indicate the name of the bank, further agree that (and promise) to pay the amounts due and payable under this guarantee without any demur merely on a demand from the Government, stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by the Government by reason of any breach by the said Contractor of any of the terms of conditions contained in the said agreement or by reason of the Contractor failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....(Rupees.....Only).
3. (a) We (indicate the name of Bank) further undertake to pay to the Government any money so demanded notwithstanding any dispute or dispute raised by the Contractor(s) in any suite or proceeding pending before any court or Tribunal relating to liability under this present being absolute and unequivocal.

(b) The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment
4. We, (indicate the name of bank) to further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged by (Designation & Address of contact signing authority) on behalf of the Government, certify that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.

5. (a) Notwithstanding anything to the contrary contained herein the liability of the bank under this guarantee will remain in force and effect until such time as this guarantee is discharged in writing by the Government or until (date of validity/ extended validity) whichever is earlier and no claim shall be valid under this guarantee unless notice in writing thereof is given by the Government within validity/ extended period of validity of guarantee from the date aforesaid.

(b) Provided always that we..... (indicate the name of the Bank) unconditionally undertakes to renew this guarantee on to extend the period of guarantee form year to year before the expiry of the period or the extended period of the guarantee, as the case may be on being called upon to do so by the Government. If the guarantee is not renewed or the period extended on demand, we (indicate the name of the Bank) shall pay the Government the full amount of guarantee on demand and without demur.
6. We, (indicate the name of Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without effecting in any manner out of obligations hereunder to vary any of the terms and conditions of the said contract from time to time or to postpone for any time or from time to time any to the powers exercisable by the Government against the said Contractor (s) and to forbear or enforce any of the terms and conditions of the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any bearance act or omission on the part of the Government or any indulgence by the Government to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties for the said reservation would relive us from the liability.
7. This guarantee will not be discharged by any change in the constitution of the Bank or the Contractor(s).
8. We, (indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.
9. This guarantee shall be valid upto---- (date of Completion plus 60 days). Unless extended on demand by Government. Notwithstanding anything to the contrary contained hereinbefore, our liability under this guarantee is restricted to Rs.....(Rs.....only) unless a demand under this guarantee is made on us in writing on or before..... we shall be discharged from our liabilities under this guarantee thereafter.

Dated: the day of for
(indicate the name of bank)
official

Signature of Banks Authorised

(Name) -----
Designation with Code No.-----
Full Address-----

Witness:

1.
2.

SUPPLEMENTARY AGREEMENT

Articles of agreement made this day _____ in the year Two thousand and Twenty One between the Managing Director, Haryana Rail Infrastructure Development Corporation Limited having his office at SCO 17-18-19, 3rd Floor, Sector-17A, Chandigarh–160017, herein after called HRIDC of the one part and _____ of the second part.

Whereas the party hereto of the other part executed an agreement with the party hereto of the first part being agreement Number _____ dated _____ for the performance _____ herein after called the ‘Principal Agreement’.

And whereas it was agreed by and between the parties hereto that the works would be completed by the party hereto of the second part on _____ date last extended’ and whereas the party hereto of the second part has executed the work to the entire satisfaction of the party hereto of the first part. And whereas the party hereto of the first part already made payment of the party hereto of the second part diverse sums from time to time aggregating to Rs. _____ including the final bill bearing voucher No. _____ dated _____ (the receipt of which is hereby acknowledged by the party hereto of the second part in full and final settlement of all his /its claims under the principal agreement.

And whereas the party hereto of the second part have received further sum of Rs. _____ through the final bill bearing voucher No. _____ dated _____ (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto the first part in full and final settlement of all his/its disputed claims under principal agreement.

Now, it is hereby agreed by and between the parties in the consideration of sums already paid (by the party hereto of the first part to the party hereto of the second part against all outstanding dues and claims for, all works done under the aforesaid principal agreement including/excluding the security deposit the party hereto of the second part have no further dues of claims against the party hereto the first part under the said Principal Agreement. It is further agreed by and between the parties that the party hereto of the second part has accepted the said sums mentioned above in full and final satisfaction of all its dues and claims under the said Principal Agreement.

It is further agreed and understood by and between the parties that in consideration of the payment already made, under the agreement, the said Principal Agreement shall stand finally discharged and rescinded all the terms and conditions including the arbitration clause. It is further agreed and understood by and between the parties that the arbitration clause contained in the said principal agreement shall cease to have any effect and/or shall be deemed to be non-existent for all purposes.

Signature of the Contractor/s

For and on behalf of MD/ HRIDC

Witness

1. _____

2. _____

ADDRESS: _____

PERFORMA

DECLARATION

I/We hereby solemnly declare that I/We visited the site of the work (as on top sheet) personally and have made myself/ourselves fully conversant of the conditions therein and particular the following:

1. Topography of area.
2. Soil strata at site of work.
3. Sources and availability of construction materials.
4. Rates for construction of material, water, electricity including all local taxes, royalties, octrois etc.
5. Availability of local labour (both skilled and unskilled) and relevant labour rates and labour laws.
6. The existing roads and approaches to the site of work and requirements for further service roads/approaches to be constructed by me/us.
7. The availability and rates of private land etc. that shall be required by me/us for various purposes.
8. Climatic conditions and availability of working days.

I/We have quoted my/our rates for various items in the schedule of items, quantities and rates taking into account all the above factors also.

Signatures of the Tenderer/s

Constitution of Firm

S.No.	Particular	Response
1	Constitution of the Firm (Tick as applicable)	Sole Proprietorship Firm/ Partnership Firm/ Company/ JV/ LLP/ Registered Society or Trust
2	Full name of the Sole Proprietorship Firm/ Partnership Firm/ Company/ JV/ LLP/ Registered Society or Trust (as the case may be)	
3	Year of formation/ incorporation	
4	PAN No.	
5	Registered Office Address	
6	Address on which correspondence regarding this tender should be done	
7	Names of the proprietor/ partners/ JV members etc.	

Undertaking:

We have uploaded along with the tender, all the requisite documents pertaining to the constitution of the firm/ concern/company. etc, as specified in clause 2.4.1 of “General Tender Conditions & Instructions to tenderers”. **I/We understand that in the absence of these documents, offer shall be considered incomplete and shall be summarily rejected.**

Date:
Seal

Signature of Tenderer/s with

Details of Plant and Machinery already available with the firm

S.No	Particulars of equipment, plant/ machinery	No. of Unit	Kind and make	Capacity	Date by which the plant/ machinery would be available for use on this work	Age & Conditions
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

**Date:
Seal**

Signature of Tenderer/s with

LIST OF ENGINEERS/PERSONNEL ALREADY AVAILABLE/ PROPOSED TO BE EMPLOYED FOR DEPLOYMENT ON THIS WORK:

S. No	Name & Designation	Qualification	Professional experience	Organization with whom working	Date by which personnel will be available for this work.
(1)	(2)	(3)	(4)	(5)	(6)

**Date:
Seal**

Signature of Tenderer/s with

ANNEXURE – G

**STATEMENT OF WORKS EXECUTED/COMPLETED BY THE CONTRACTORS
DURING LAST 7 (SEVEN) YEARS ENDING LAST DAY OF MONTH PREVIOUS
TO THE ONE IN WHICH TENDER IS INVITED**

(Details of works of similar nature physically completed in all respect as per contract agreement during last seven years, ending last day of month previous to the one in which tender is invited)

S. No	Name and place of work	Authority /agency for which work was carried out	Date of award & agreement No.	Date of completion (original /actual)	Agreemental cost/ completion cost.	Principal/ Technical features work in brief	S.No. at which relevant certificate /documents are attached
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

**Date:
Seal**

Signature of Tenderer/s with

STATEMENT OF WORKS BEING EXECUTED/IN HAND BY THE CONTRACTOR/S

S. No	Name and place of work	Authority /agency for which work was carried out	Date of award & agreement No.	Date of completion	Agreement Cost	Principal/ Technical features work in brief	S.No. at which relevant certificate /documents are attached	Payment taken till date
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Date:
Seal

Signature of Tenderer/s with

ANNEXURE – I

Detail of contractual payment received in last 3 (three) financial year and current financial year

S. No	Name and place of work	Name of employer	Detail of payment.	For the financial year	Total contract amount received
(1)	(2)	(3)	(4)	(5)	(6)

**Date:
with Seal**

Signature of Tenderer/s

**Real Time Gross Saving (RTGS)/National Electronic Fund Transfer (NEFT)
Model Mandate Form**

(Investor/customer's option to receive payments through RTGS/NEFT)

1. Investor/customer's name

2. Particulars of Bank Account:

A) Name of the Bank:

B) Name of the Branch.

Address

Telephone No.

C) RTGS/NEFT IFS Code.

D) Type of the account (S.B. Current or Cash Credit)

With code (10/11/13).

E) Ledger and Ledger folio number.

F) Account number (as appearing on the Cheque book) in lieu of the bank certificate to be obtained as under, please attach a blank cancelled cheque or a photocopy of a cheque or front page of your savings bank passbook issued by your bank for verification of the above particulars)

3. Date of effect

I hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold the user institution responsible. I have read the option invitation letter and agree to discharge the responsibility expected of me as a participant under the scheme.

(.....)
Signature of the Investor/ Customer

Date:

Certified that the particulars furnished above are correct as per our records.

Bank's Stamp

MEMORANDUM OF UNDERSTANDING FOR JV

(The memorandum of understanding shall be submitted in following format on the non-judicial stamp of Rs.100/- duly notarized)

NOW THIS Memorandum of Understanding is executed at (Name of Place) on this date (DD/MM/YY) between M/s.....(Name of first constituent and address) as the first party represented by Shriand M/s..... (Name of 2nd constituent and address) represented by Shri as the second party and so on 3rd, 4th& 5th subsequent parties. (the expression and words of first and second and other shall mean and include their heirs successors, assigns, nominees, execution, administrators and legal representatives respectively).

WHEREAS all the parties are engaged mainly in the business of execution of Civil Engineering and general contracts for various Government Departments and organizations.

AND WHEREAS the parties herein above mentioned are desirous of entering into a joint venture for carrying out civil engineering and/or contract works in connection with Tender No. (Name of work)..... as mutually decided between members of Joint Venture Agreement.

1. That we M/s..... (JV firm) on behalf of all members of this joint venture agreement agreed that M/s will be “Lead Partner” of this Joint Venture.

2. That under this MOU, the work will be done jointly by M/s the first party and M/s the second and so onin the name and style of(Name) (joint venture firm).

3. That we JV firm M/s on behalf of all the members of JV firm shall be legally liable, severally and jointly responsible/ liable for the satisfactory/ successful execution/ completion of the works including maintenance period in all respects and in accordance with terms and conditions of the contract.

4. That we M/s JV firm..... on behalf of all the members of the JV firm to which the contract is awarded, shall be jointly and severally liable to the Employer (HRIDC) for execution of the project in accordance with General and Special Conditions of the Contract. The JV members shall also be liable jointly and severally for the loss, damages caused to HRIDC during the course of execution of the contract or due to non-execution of the contract or part thereof.

5. M/s(Name of Lead Firm) of JV firm shall be the lead member of the JV firm who shall have a majority% share of interest in the JV firm. The other (One/Two) members shall have following share: - M/s (Name of Second Firm) have % and M/s (Name of Third Firm if any) have% share of interest in the JV Firm.

6. That this JV shall be valid during the entire currency of the contract including the period of extension, if any, and the maintenance period after the work is completed.

7. That we all the Joint Venture members authorize M/sone of the members on behalf of the JV firm to deal with the tender, sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/contract. All notices/ correspondence with respect to the contract would be sent to this authorized member (address) of the JV firm.

8. That no member of the JV shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other members and that of the Employer (HRIDC) in respect of the said tender/contract.

9. That we all the members of the JV certify that we have not been black- listed or debarred by Railways or any other Ministry/Department /PSU (Public Sector Undertaking) of the Govt. of India/ State Govt. from participation in tenders/contract in the past either in our individual capacity or as a member of the JV firm or partnership firm in which they were members/partners.

10. That this Joint Venture MOU shall in all respect be governed by and interpreted in accordance with Indian Laws.

Now the parties have joined hands to form this MOU on this date(DD/MM/YY) with reference to and in confirmation of their discussions and understanding brought on record on date (DD/MM /YY).

In witness thereof all/both the above-named parties have set their respective hands on this MOU on the day, month and year first above mentioned, in the presence of the following witnesses:

1 First party (authorized signatory)

2 Second party (authorized signatory)

3.Third party (if any) (authorized signatory)

With Seal of parties

Witnesses with name & address:

1..... 2.....

Date.....

Place.....

Note: Should MOU be in more than one separate page; each page shall be signed by the authorized signatory.

COMPLETION CERTIFICATE

The work of “----- (Full name of the work) -----” has been Completed with following details:

1	Name & complete address of the Contractor.	
2	Nature of entity (sole prop/partnership firm/ company / JV)	
3	a) In case of Sole proprietorship, the name of sole proprietor	
	b) In case of partnership firm/JV, the names & shares of various partners/members.	
4	Date of Acceptance/LOA	
5	Agreement No. & date	
6	i) Original Agreement Cost ii) Final Agreement Cost	
7	Total payment made along with financial year-wise break-up	
8	Original date of completion (DOC)	
9	a) Actual date of completion (b) Whether extension to DOC given with penalty or without penalty	
10	Brief description of nature & scope of work	
11	Performance of Contractor (Satisfactory/unsatisfactory)	

It is certified that the above work has been completed successfully in accordance with provisions of contract.

(-----)
Name & Signature
Issuing authority with seal

Date of issue of certificate: -----

Case File No.: -----

**FORMAT FOR AFFIDAVIT TO BE SUBMITTED BY TENDERER
ALONG WITH THE TENDER DOCUMENTS**

**(To be executed in presence of Notary public on non-judicial stamp paper of the value
of
Rs. 100/-. The stamp paper has to be in the name of the Tenderer) ***

I (*Name and designation*)** appointed as the attorney/ authorized signatory of the Tenderer (including its constituents), M/s. _____ having its office at.....(hereinafter called the Tenderer) for the purpose of the Tender documents for the work of (*Name of work*)** as per the Tender No. _____ of Haryana Rail Infrastructure Development Corporation (HRIDC), do hereby solemnly affirm and state on behalf of the Tenderer including its constituents as under:

1. I/We the Tenderer (s), am/are signing this document after carefully reading the contents.
2. I/We the tenderer(s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded the tender documents from the website <https://etenders.hry.nic.in>. I/we have verified the content of the document from the website and there is no addition, no deletion or no alteration to the content of the tender document. In case of any discrepancy noticed at any stage i.e. evaluation of tenders, execution of work or final payment of the contract, the master copy available with HRIDC shall be final and binding upon me/us.
4. I/we declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. I/We also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.
6. I/We declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.
7. I/we certify that I/we the tenderer(s) is/are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tender on the date of submission of bids, either in individual capacity or as a HUF/ member of the partnership firm/LLP/JV/Society/Trust.
8. I/we understand that if the contents of the affidavit submitted by us are found to be forged/false or incorrect at any time during process for evaluation of tenders, it shall lead to

forfeiture of the Bid Security besides banning of business for a period of upto five year. Further, I/we (insert name of the tenderer) **_ and all my/our constituents understand that my/our offer shall be summarily rejected.

9. I/we also understand that if the certificates submitted by us are found to be false/forged or incorrect at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of Bid Security/SD and Performance guarantee besides any other action provided in the contract including banning of business for a period of up to 5 (five) years.
10. I/We have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India and certify that I am/We are not from such a country or, if from such a country, have been registered with the competent Authority. I/We hereby certify that I/we fulfil all the requirements in this regard and am/are eligible to be considered (evidence of valid registration by the competent authority is enclosed)

**DEPONENT
SEAL AND SIGNATURE
OF THE TENDERER**

VERIFICATION

I/We above named Tenderer do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

**DEPONENT
SEAL AND SIGNATURE
OF THE TENDERER**

Place:

Dated:

Note:

- i) Should affidavit be in more than one separate page, each page shall be signed by the authorized signatory*
- ii) The contents in Italics (marked with **) are only for guidance purpose. Details as appropriate are to be filled in suitably by Tenderer*
- iii) This affidavit is to be given by each member of JV.*

ANNEXURE – N

Break up of Maximum value of Contractual payment received in any one year during the last 3 (three) years and current financial year

S.No.	Financial Year	Cumulative contractual payment received	Breakup of individual values included in Cumulative payment (col.3)	Supporting documents (16A, 26As, Employer certificate)	Placed at S.No.
(1)	(2)	(3)	(4a)	(4b)	(4c)
			1.		
			2.		
			3.		
			4.		
			Cumulative value		

Date: _____
seal

Signature of Tenderer/s with

ANNEXURE – O-1

AFFIDAVIT BY SOLE PROPRIETORSHIP FIRM

(To be executed non judicial stamp paper of appropriate value as per law of state concerned-Non-Judicial stamp paper should be purchased in the name of proprietor of the firm)

I.....S/o Shriaged aboutyears
R/o.....do hereby
solemnly affirm and declare as under:

1. That I am running a business in the name and style of M/S.....which is a sole proprietorship firm, and which has got GST registration No.....
2. That I am the sole proprietor of the said firm M/S
.....
....
3. That the Head office of the above named firm is situated at
.....

DEPONENT

Verification:

Verified at..... on thisday of.....that the contents of my above affidavit are true and correct to the best of my knowledge and belief and nothing material has been concealed therefrom.

DEPONENT

(seal and signature of Notary Public)

Notes: 1. The document should be notarized at its place of execution (Place of signing the document)

2. Each page of the document should be signed by executants

POWER-OF-ATTORNEY FOR SIGNING OF BID ON BEHALF OF PARTNERSHIP FIRM

(To be executed non judicial stamp paper of appropriate value as per law of state concerned-Non-Judicial stamp paper should be purchased in the name of partners of the firm)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS WE

(1)..... S/o Shri.....R/o.....

(2)..... S/o Shri.....R/o.....

(3)..... S/o Shri.....R/o.....

(4)..... S/o Shri..... R/o.....

all are the partners of a partnership firm namely M/S.....
..... (Name of firm) hereinafter referred to as 'firm', which is registered at
Registration No.....by Registrar of Firms..... The firm is
having its head office
at..... (hereinafter to
be referred as the 'Firm').

AND WHEREAS we all the above named partners have on.....(date) given our
consent on behalf of firm to participate in the tender
No._____ issued by HRIDC for the work namely
“_____”

We the above named partners of above named firm do hereby irrevocably constitute, nominate,
appoint and authorize Mr./ Ms. _____S/o
Shri_____ (address)_____ &Mr./ Ms. _____S/o
Shri_____ (address)_____ as our true and lawful attorney
(hereinafter referred to as “Attorney”) of the firm to jointly or severally exercise all or any of
the following powers for and on behalf of M/S
..... (name of firm) in connection with
aforesaid bid:

1. To sign and submit Tender and participate in the aforesaid bid of HRIDC on behalf of the firm.
2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc. on behalf of firm.
3. To negotiate, discuss, agree to make any amendments, alterations or modifications thereto and to make representations, submit papers, affidavits and to do any other act and complete requisite formalities on behalf of the firm in connection with completion of aforesaid tender work and to enter into liability against the firm.
4. To sign, execute the contract with HRIDC for and on behalf of the firm.

5. And generally to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above.

We on behalf of firm undertake that it shall not cancel or amend this power of Attorney without obtaining previous written consent of HRIDC.

We on behalf of firm hereby agree that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the firm and we hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

Specimen signatures of the Attorney are appended below.

IN WITNESS WHEREOF this deed has been signed and sealed by us the under named, on this..... day of..... 20.... , in presence of:

WITNESSES:

1. Signature	Executants Partners
Name:	(Name)(Signature)
Address:	1.....
	2.
	3.
	4.

2. Signature
 Name:
 Address:

Specimen Signatures of Attorney Holder(s) in token of acceptance:

(1) Name..... Signature.....
(2) Name..... Signature.....

Executed and Signed before me on this.....day of At
.....(place).

(Seal and signature of Notary Public)

Notes:

1. In this format space has been provided for entering details of four partners & two attorney holders however if the numbers vary details may accordingly be entered.
2. The document should be notarized at its place of execution (Place of signing the document).
3. Each page of the document should be signed by executants.
4. The power of attorney should be **duly registered**.

POWER-OF-ATTORNEY ON BEHALF OF THE JOINT VENTURE

(To be executed non judicial stamp paper of appropriate value as per law of state concerned-Non-Judicial stamp paper should be purchased in the name of the members of Joint Venture)

KNOW ALL MEN BY THESE PRESENTS THAT WE THE PARTIES whose details are given here under:

1. (name of constituent) (address) as the first party.
2. (name of constituent) (address) as the second party.

Have entered into a Joint Venture agreement for the purpose of securing the work advertised by HRIDC vide NIT No.....details of works are as under:

“.....”

The aforesaid Joint Venture shall be known by the name “.....” (Hereinafter called the Joint Venture which Expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns.

We the above said parties, through this power of Attorney do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms. _____ S/o Shri _____ (address) who is presently holding the position of inthe firm/ company as our true and lawful attorney (hereinafter referred to as “Attorney”) of the Joint Venture to jointly or severally exercise all or any of the following powers for and on behalf of “..... (name of JV) in connection with aforesaid bid:

1. To sign and submit Tender and participate in the aforesaid bid of HRIDC on behalf of the Joint Venture.
2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc. on behalf of Joint Venture
3. To negotiate, discuss, agree to make any amendments, alterations or modifications thereto and to make representations, submit papers, affidavits and to do any other act and complete requisite formalities on behalf of the Joint Venture in connection with completion of aforesaid tender work and to enter into liability against the Joint Venture.
4. To sign, execute the contract with HRIDC for and on behalf of the Joint Venture.
5. And generally to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above on behalf of Joint Venture.

The Joint Venture agrees and undertakes that in the event of any change in the constitution of the Joint Venture the rights and obligations of the Joint Venture shall continue to be in full force without any effect thereof.

We all the members of Joint Venture undertake that we shall not cancel or amend this Power of Attorney unilaterally and without prior written consent of HRIDC.

AND the Joint Venture hereby agrees that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the Joint Venture and the Company hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

IN WITNESS WHEREOF the members constituting the Joint Venture as aforesaid have executed these present, on this..... day of..... 20.... , under the common seal(s)/seals of their companies and/or firms(s), in presence of:

WITNESSES:

- | | |
|--------------|---|
| 1. Signature | Signature of authorized signatories & their |
| Name: | Seals: |
| Address: | 1. First Party (Signature): |
| | Name: |
| | Seal: |
|
 | |
| 2. Signature | 2. Second Party (Signature): |
| Name: | Name: |
| Address: | Seal: |

Specimen Signatures of Attorney Holder in token of acceptance:

Name.....Signature.....

Executed and Signed before me on this.....day of At
..... (place).
(seal and signature of Notary Public)

- Notes:**
1. In this format space has been provided for entering details of two constituents of the JV however if the number vary the details may accordingly be entered.
 2. The document should be notarized at its place of execution (Place of signing the document).
 3. Each page of the document should be signed by executants.

CONSENT OF PARTNERS OF PARTNERSHIP FIRM FOR SIGNING JOINT VENTURE

(To be executed on non-judicial stamp paper as per tender conditions, Non-Judicial stamp paper should be purchased in the name of partners of the firm)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS WE :

(1)..... S/o Shri..... R/o.....

(2)..... S/o Shri..... R/o.....

(3)..... S/o Shri..... R/o.....

(4)..... S/o Shri..... R/o.....

all are the partners of a partnership firm namely M/S
.....(Name of firm) hereinafter referred to as 'firm', which is registered at
Registration No.....by Registrar of Firms..... The firm
is having its head office
at.....

AND WHEREAS it has come to our knowledge that NIT
No._____ has been issued by HRIDC for the work namely
“
_____”

We all the above named partners on behalf of the above named firm hereby give our consent to participate in the above tender in Joint Venture.

Further we all the above named partners on behalf of the above named firm hereby give our consent to enter in to Joint Venture agreement, with M/S_____ & M/S_____ (name of other constituent(s) of joint venture) and to participate in tender as Joint Venture aforesaid.

Date:

Place:

Executants Partners

(Name)(Signature)

1.....

2.....

3.....

4.....

(seal and signature of Notary Public)

- Notes:**
1. In this format space has been provided for entering details of four partners and two JV constituents however if the number vary details may accordingly be entered.
 2. The document should be notarized at its place of execution (Place of signing the document).
 3. Each page of the document should be signed by executants.

POWER-OF-ATTORNEY FOR SIGNING JOINT VENTURE AGREEMENT ON BEHALF OF PARTNERSHIP FIRM

(To be executed non judicial stamp paper of appropriate value as per law of state concerned-Non-Judicial stamp paper should be purchased in the name of partners of the firm)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS WE

- (1)..... S/o Shri..... R/o.....
- (2)..... S/o Shri..... R/o.....
- (3)..... S/o Shri..... R/o.....
- (4)..... S/o Shri..... R/o.....

All are the partners of a partnership firm namely M/s.Name of firm) hereinafter referred to as 'firm', which is registered at Registration No.....by Registrar of Firms..... The firm is having its head office at..... (hereinafter to be referred as the 'Firm').

AND WHEREAS we all the above named partners have on.....(date) given our consent on behalf of firm to participate in the tender No. issued by HRIDC for the work namely “

 _”in Joint Venture with M/S.....&
 M/S.....

We the above named partners of above named firm do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms. _____ S/o Shri _____ (address) _____ & Mr./ Ms. _____ S/o Shri _____ (address) _____ as our true and lawful attorney (hereinafter referred to as “Attorney”) of the firm to jointly or severally exercise all or any of the following powers for and on behalf of M/S (name of firm) in connection with aforesaid bid:

- 1. To enter into and execute and sign JOINT VENTURE agreement, on behalf of our firm with M/S.....& M/S.....
- 2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc. in connection with aforesaid bid.
- 3. To negotiate, discuss, agree to make any amendments, alterations or modifications thereto and to make representations, submit papers, affidavits and to do any other act and complete requisite formalities on behalf of the firm in connection with completion of aforesaid tender work and to enter into liability against the firm.
- 4. To sign, execute the contract with HRIDC for and on behalf of the firm.

5. And generally to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above and to enter into liability against the firm.

We on behalf of firm undertake that it shall not cancel or amend this power of Attorney without obtaining previous written consent of HRIDC.

We on behalf of firm hereby agree that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the firm and we hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

Specimen signatures of the Attorney are appended below.

IN WITNESS WHEREOF this deed has been signed and sealed by us the under named, on this..... day of..... 20...., in presence of:

WITNESSES:

1. Signature	Executants Partners
Name:	(Name) (Signature)
Address:	1
	2
	3.....
	4.....

2. Signature
 Name:
 Address:

Specimen Signatures of Attorney Holder(s) in token of acceptance:

(1) Name.....Signature.....

(2) Name.....Signature.....

Executed and Signed before me on this.....day of At
.....(place).

(Seal and signature of Notary Public)

- Notes: 1. In this format space has been provided for entering details of four partners, two constituents of JV and two attorney holders, however if the number vary the details may accordingly be entered.
2. The document should be notarized at its place of execution.
3. Each page of the document should be signed by executants.

**AFFIDAVIT BY SOLE PROPRIETORSHIP FIRM WHEN PARTICIPATING IN
JOINT VENTURE**

(To be executed non judicial stamp paper of appropriate value as per law of state concerned- Non-Judicial stamp paper should be purchased in the name of proprietor of the firm)

I.....S/o Shri.....aged about
.....years R/o.....do hereby solemnly
affirm and declare as under:

1. That I am running a business in the name and style of M/s..... which is a sole proprietorship firm and which has got GST registration No.....
2. That I am the sole proprietor of the said firm M/S.....
3. That the Head office of the above named firm is situated at.....
4. That I through my above named firm shall participate in the tender No._____ issued by HRIDC for the work namely “
_____” in Joint Venture and for the purpose shall enter into and execute joint venture agreement with M/S_____ & M/S_____ (name of other constituent(s) of joint venture).

DEPONENT

Verification:

Verified at.....on thisday of.....that the contents of my above affidavit are true and correct to the best of my knowledge and belief and nothing material has been concealed therefrom.

DEPONENT

(Seal and signature of Notary Public)

- Notes:
1. In this format space has been provided for entering details of two constituents of the JV however if the number vary details may accordingly be entered.
 2. The document should be notarized at its place of execution (Place of signing the document).
 3. Each page of the document should be signed by executants.

BOARD’S RESOLUTION OF COMPANY FOR ENTERING INTO JOINT VENTURE

(To be printed on Company’s letter head)

EXTRACT OF THE RESOLUTION PASSED AT THE MEETING OF THE BOARD OF DIRECTORS OF (Company Name) _____ (CIN _____) (hereinafter referred to as company) HELD ON (Date) _____ AT (Address) _____

Whereas the Board has been described about NIT No. _____ issued by HRIDC for the work namely “ _____ ”.

Board discussed the matter and after discussion following resolution was passed:

RESOLVED THAT the company (company name) shall participate in the above tender in Joint Venture and for the purpose the company shall enter into and execute joint venture agreement, with M/S _____ & M/S _____ (name of other constituent(s) of joint venture).

Resolved further that the Board authorizes, Mr. /Ms. _____ & Mr./Ms. _____ (name and designation) of the company, to jointly or severally, sign joint venture agreement, and to sign such other documents and to do any other act and complete requisite formalities on behalf of the company in connection with completion of aforesaid tender work and to enter into liability against the company.

Resolved further that Board authorizes Mr./Ms. _____ (name and designation) of the company to execute Power of Attorney in terms of this resolution in favour of Mr./Ms. _____ & Mr./Ms. _____ the person(s) above named.

The acts done and documents executed by such above named authorized person(s) shall be binding on the company.

For the Organization,

(Seal of company & Signature of authorized person)

Name: _____

Designation: _____

Place:

Dated:

Executed and Signed before me on this.....day ofAt
.....(place).

(Seal and signature of Notary Public)

- Notes:**
1. In this format space has been provided for entering details of two constituents of the JV and two authorized persons however if the number vary details may accordingly be entered.
 2. The document should be notarized at its place of execution (Place of signing the document).
 3. Each page of the document should be signed by authorized signatory(s).

POWER-OF-ATTORNEY BY A COMPANY (incorporated under companies Act) for entering into JOINT VENTURE AGREEMENT

(To be executed non judicial stamp paper of appropriate value as per law of state concerned Non-Judicial stamp paper should be purchased in the name of the company)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS M/S
..... (name of company & CIN number) is a
Company registered under the Companies Act, 2013, and having its registered office
at..... (Hereinafter called the 'Company').

AND WHEREAS by its resolution No..... passed in the meeting held
on..... of the Board of directors of the company the company (company name)
has decided to participate in the tender No._____ issued
by HRIDC for the work namely
“_____”

in Joint Venture and for the purpose the company shall enter into and execute joint venture
agreement with M/S_____ &
M/S_____ (name of other constituent(s) of joint venture) AND
THAT M/S_____ (name of the lead member of joint venture) shall
act as the lead member of above mentioned joint venture.

I.....(name and designation) the authorised
representative of M/S
(name of company) duly authorized in this behalf by aforesaid resolution do hereby irrevocably
constitute, nominate, appoint and authorize Mr./ Ms.
_____(designation)_____(address)_____ &Mr./
Ms.Mr./ _____ Ms.
_____(designation)_____(address)_____ who is/are
presently holding the above mentioned position in the company as our true and lawful attorney
(hereinafter referred to as “Attorney”) of the company to jointly or severally exercise all or any
of the following powers for and on behalf of M/S
..... (Name of company & CIN number) in
connection with aforesaid bid:

1. To enter into and execute and sign JOINT VENTURE agreement, draft of which has been approved by the company, on behalf of the company with above named constituents for participating in the aforesaid bid of the HRIDC on behalf of the company.
2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc.
3. To do any other act and complete requisite formalities on behalf of the company in connection with completion of aforesaid tender work and to enter into liability against the company.
4. And generally, to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above.

The company agrees and undertakes that in the event of any change in the constitution of the company the rights and obligations of the company shall continue to be in full force without any effect thereof.

The company undertakes that it shall not cancel or amend this power of Attorney without obtaining previous written consent of HRIDC.

AND the Company hereby agrees that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the Company and the Company hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

IN WITNESS WHEREOF this deed has been signed and sealed by Shri..... (name and designation), on this..... day of..... 20... , in presence of:

WITNESSES:

- | | |
|--------------|---|
| 1. Signature | Executants Signature & Seal of Company: |
| Name: | Name: |
| Address: | Designation: |
| 2. Signature | |
| Name: | |
| Address: | |

Specimen Signatures of Attorney Holder in token of acceptance:

- (1) NameSignature.....
- (2) NameSignature.....

Executed and Signed before me on this.....day of At (place).

(Seal and signature of Notary Public)

Notes: 1. In this format space has been provided for entering details of two constituents of the JV and two authorized persons/attorney holders however if the number vary the details may accordingly be entered.

2. The document should be notarized at its place of execution (Place of signing the document).
3. Each page of the document should be signed by executants

POWER-OF-ATTORNEY FOR SIGNING OF BID (when Tenderer is company incorporated under Companies Act)

(To be executed non judicial stamp paper of appropriate value as per law of state concerned Non-Judicial stamp paper should be purchased in the name of the company)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS M/S
..... (name of company & CIN number) is a Company registered under the Companies Act, 2013, and having its registered office at..... (Hereinafter called the 'Company').

AND WHEREAS by its resolution No..... passed in the meeting held on..... of the Board of directors of the company the company (company name) have decided to participate in the tender No. _____ issued by HRIDC for the work namely “ _____ ”

I.....(name and designation) the authorised representative of M/S (name of company) duly authorized in this behalf by aforesaid resolution do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms. _____ (designation) _____ (address) &Mr./ Ms.Mr./ _____ (designation) _____ (address) who is/are presently holding the above mentioned position in the company as our true and lawful attorney (hereinafter referred to as “Attorney”) of the company to jointly or severally exercise all or any of the following powers for and on behalf of M/S (name of company & CIN number) in connection with aforesaid bid:

1. To sign and submit Tender and participate in the aforesaid bid of HRIDC on behalf of the company.
2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc.
3. To negotiate, discuss, agree to make any amendments, alterations or modifications thereto and to make representations, submit papers, affidavits and to do any other act and complete requisite formalities on behalf of the company in connection with completion of aforesaid tender work and to enter into liability against the company.
4. To sign, execute the contract with HRIDC for and on behalf of the company.
5. And generally to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above.

The company agrees and undertakes that in the event of any change in the constitution of the company the rights and obligations of the company shall continue to be in full force without any effect thereof.

The company undertakes that it shall not cancel or amend this power of Attorney without obtaining previous written consent of HRIDC.

AND the Company hereby agrees that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the Company and the Company hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

IN WITNESS WHEREOF this deed has been signed and sealed by Shri.....(name and designation), on this..... day of..... 20.... , in presence of:

WITNESSES:

1. Signature
Name:
Address:

Executants Signature & Seal of Company:
Name:
Designation:

2. Signature
Name:
Address:

Specimen Signatures of Attorney Holder(s) in token of acceptance:

(1) Name Signature.....

(2) Name..... Signature.....

Executed and Signed before me on this.....day of At(place).

(Seal and signature of Notary Public)

- Notes:**
1. In this format space has been provided for entering details of two authorized persons/attorney holders however if the number vary details may accordingly be entered.
 2. The document should be notarized at its place of execution (Place of signing the document).
 3. Each page of the document should be signed by executants.

**Board’s Resolution of company incorporated under companies Act for submitting
Tender by company (To be printed on company’s letter head)**

EXTRACT OF THE RESOLUTION PASSED AT THE MEETING OF THE BOARD OF
DIRECTORS OF (Company Name)
_____ (CIN _____) (hereinafter
referred to as company) HELD ON (Date) _____ AT (Address)

Whereas the Board has been described about NIT
no. _____ issued by HRIDC for the work namely
“ _____ ”. Board discussed the matter and after
discussion following resolution was passed:

RESOLVED THAT the company (company name) shall participate in the above tender.

Resolved further that the Board authorizes, Mr./ Ms. _____ & Mr./
Ms. _____ (name and designation) of the company, to jointly or
severally sign and submit all the necessary papers, letters, forms, quotes, bids etc, negotiate,
discuss, agree to make any amendments, alterations or modifications thereto and to make
representations, submit papers, affidavits and to do any other act and complete requisite
formalities on behalf of the company in connection with completion of aforesaid tender work
and to enter into liability against the company.

Resolved further that Board authorizes
Mr./Ms. _____ (name and designation) of the company to
execute Power of Attorney in terms of this resolution in favour of
Mr./Ms. _____ & Mr./Ms. _____ the
person(s) above named.

The acts done and documents executed by such above named authorized person(s) shall be
binding on the company.

For the Organization,

(Seal of company & Signature of authorized person)

Name: _____

Designation: _____

Place:

Dated:

Executed and Signed before me on this.....day of At
.....(place).

(Seal and signature of Notary Public)

- Notes:**
1. In this format space has been provided for entering details of two authorized persons however if the number vary details may accordingly be entered.
 2. The document should be notarized at its place of execution (Place of signing the document).
 3. Each page of the document should be signed by authorized signatory(s).

POWER-OF-ATTORNEY FOR SIGNING OF BID (when Tenderer is LLP Firm incorporated under LLP Act)

(To be executed non judicial stamp paper of appropriate value as per law of state concerned Non-Judicial stamp paper should be purchased in the name of the LLP Firm)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS M/S (name of LLP & LLPIN number) is a LLP Firm registered under the LLP Act, 2008, and having its registered office at..... (hereinafter called the 'LLP').

AND WHEREAS by its resolution No..... passed in the meeting held on..... of the Partners of the LLP the LLP..... (LLP name) have decided to participate in the tender No. _____ issued by HRIDC for the work namely “ _____ ”

I.....name and designation) the authorised representative of M/S (name of LLP) duly authorized in this behalf by aforesaid resolution do hereby irrevocably constitute, nominate, appoint and authorize Mr./Ms. _____(designation)_____ (address)_____ &Mr./ Ms./Mr./Ms. _____(designation)_____ (address)_____ who is/are presently holding the above mentioned position in the LLP as our true and lawful attorney (hereinafter referred to as “Attorney”) of the LLP to jointly or severally exercise all or any of the following powers for and on behalf of M/S (name of LLP & LLPIN number) in connection with aforesaid bid:

1. To sign and submit Tender and participate in the aforesaid bid of HRIDC on behalf of the LLP.
2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc.
3. To negotiate, discuss, agree to make any amendments, alterations or modifications thereto and to make representations, submit papers, affidavits and to do any other act and complete requisite formalities on behalf of the LLP in connection with completion of aforesaid tender work and to enter into liability against the LLP.
4. To sign, execute the contract with HRIDC for and on behalf of the LLP.
5. And generally to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above.

The LLP agrees and undertakes that in the event of any change in the constitution of the LLP, the rights and obligations of the LLP shall continue to be in full force without any effect thereof.

The LLP undertakes that it shall not cancel or amend this power of Attorney without obtaining previous written consent of HRIDC.

AND the LLP hereby agrees that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the LLP and the LLP hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

IN WITNESS WHEREOF this deed has been signed and sealed by Shri.....(name and designation), on this..... day of..... 20.... , in presence of:

WITNESSES:

- | | |
|-----------------------------------|--|
| 1. Signature
Name:
Address: | Signatures of authorized representative &
Seal of LLP:

Name of authorized representative
(Executant):
Designation: |
| 2. Signature
Name:
Address: | |

Specimen Signatures of Attorney Holder(s) in token of acceptance:

(1)Name Signature.....

(2Name).....Signature.....

Executed and Signed before me on this.....day of At(place).

(Seal and signature of Notary Public)

- Notes:**
1. In this format space has been provided for entering details of two authorized persons/attorney holders however if the number vary details may accordingly be entered.
 2. The document should be notarized at its place of execution (Place of signing the document).
 3. Each page of the document should be signed by executants.

Partner’s Resolution of LLP Firm for entering into Joint Venture (To be printed on LLP Firm’s letter head)

EXTRACT OF THE RESOLUTION PASSED AT THE MEETING OF THE PARTNERS OF _____ (LLP Name) having LLPIN _____ of 20.....)(hereinafter referred to as LLP) HELD ON _____ (Date) _____ AT _____ (Address)

Whereas the Partners have been described about NIT No. _____ issued by HRIDC for the work namely “ _____ ”. Partners discussed the matter and after discussion following resolution was passed:

RESOLVED THAT the LLP..... (LLP name) shall participate in the above tender in Joint Venture and for the purpose the LLP shall enter into and execute joint venture agreement, with M/s _____ & M/s _____ (name of other constituent(s) of joint venture).

Resolved further that the LLP/Partners authorize(s), Mr./ Ms. _____ & Mr./ Ms. _____ (name and designation) of the LLP, to jointly or severally, sign joint venture agreement, and to sign such other documents and to do any other act and complete requisite formalities on behalf of the LLP in connection with completion of aforesaid tender work and to enter into liability against the LLP.

Resolved further that LLP/Partners authorize(s) Mr./Ms. _____ (name and designation) of the LLP to execute Power of Attorney in terms of this resolution in favour of Mr./Ms. _____ & Mr./Ms. _____ the person(s) above named.

The acts done and documents executed by such above named authorized person(s) shall be binding on the LLP.

For the Organization,

(Seal of LLP & Signature of authorized person)

Name of authorized person: _____

Designation: _____

Place:

Dated:

Executed and Signed before me on this.....day of At(place).

(Seal and signature of Notary Public)

- Notes: 1. In this format space has been provided for entering details of two constituents of the JV and two authorized persons however if the number vary details may accordingly be entered.
2. The document should be notarized at its place of execution (Place of signing the document).
3. Each page of the document should be signed by authorized signatory(s).

POWER of ATTORNEY BY AN LLP Firm (incorporated under LLP Act) for entering into JOINT VENTURE AGREEMENT

(To be executed non judicial stamp paper of appropriate value as per law of state concerned Non-Judicial stamp paper should be purchased in the name of the LLP)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS M/S (name of LLP & LLPIN number) is a LLP registered under the LLP Act, 2008, and having its registered office at..... (Hereinafter called the 'LLP')

AND WHEREAS by its resolution No..... passed in the meeting held on..... of the Partners of the LLP, the LLP..... (LLP name) has decided to participate in the tender No..... issued by HRIDC for the work namely “.....” in Joint Venture and for the purpose the LLP shall enter into and execute joint venture agreement with M/S..... & M/S..... (name of other constituent(s) of joint venture) AND THAT M/S..... (name of the lead member of joint venture) shall act as the lead member of above mentioned joint venture.

I.....(name and designation) the authorised representative of M/S (name of LLP) duly authorized in this behalf by aforesaid resolution do hereby irrevocably constitute, nominate, appoint and authorize Mr./Ms. (designation)..... (address)..... & Mr./Ms. (designation)..... (address)..... who is/are presently holding the above mentioned position in the LLP as our true and lawful attorney (hereinafter referred to as “Attorney”) of the LLP to jointly or severally exercise all or any of the following powers for and on behalf of M/S (Name of LLP & LLPIN number) in connection with aforesaid bid:

1. To enter into and execute and sign JOINT VENTURE agreement, draft of which has been approved by the LLP, on behalf of the LLP with above named constituents for participating in the aforesaid bid of HRIDC on behalf of the LLP.
2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc.
3. To do any other act and complete requisite formalities on behalf of the LLP in connection with completion of aforesaid tender work and to enter into liability against the LLP.
4. And generally to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above.

The LLP agrees and undertakes that in the event of any change in the constitution of the LLP, the rights and obligations of the LLP shall continue to be in full force without any effect thereof.

The LLP undertakes that it shall not cancel or amend this power of Attorney without obtaining previous written consent of HRIDC.

AND the LLP hereby agrees that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the LLP and the LLP hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

IN WITNESS WHEREOF this deed has been signed and sealed by Shri.....(name and designation), on this..... day of..... 20... , in presence of:

Specimen Signatures of Attorney Holder in token of acceptance:

(1) Name Signature.....

(2) Name Signature.....

Executed and Signed before me on this.....day of At(place).

(Seal and signature of Notary Public)

- Notes: 1. In this format space has been provided for entering details of two constituents of the JV and two authorized persons/attorney holders however if the number vary the details may accordingly be entered.
2. The document should be notarized at its place of execution (Place of signing the document).
3. Each page of the document should be signed by executants.

(Reference -Para 10.2 & 17.15.2 of Tender Form (Second Sheet) of Annexure I of ITT)

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

NAME OF BIDDER/JV PARTNER:

Annual Contractual Turnover Data for the Previous 3/4 Years (Contractual Payment only)			
Year	Amount Currency	Exchange Rate	Indian National Rupees Equivalent
Average Annual Contractual Turnover for last 3 years			

1. The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.
2. The information supplied shall be substantiated by data in the audited balance sheets and profit and loss accounts for the relevant years in respect of the bidder or all members constituting the bidder.
3. Contents of this form should be certified by a Chartered Accountant duly supported by Audited Balance Sheet duly certified by the Chartered Accountant.

SEAL AND SIGNATURE OF THE BIDDER

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

(Signature of Chartered Accountant)

Name of CA:

Registration No: _

INSTRUCTIONS REGARDING ELECTRONIC TENDERING SYSTEM

These conditions will over-rule the conditions stated in the tender documents, wherever relevant and applicable.

1. Registration of Tenderers on e-tendering Portal:

- 1.1. Tenderers are required to enroll on the above-mentioned e-Procurement portal by clicking on the link "Online Tenderer Enrollment" on the Portal which is free of charge.
- 1.2. As part of the enrolment process, the Tenderers will be required to choose a unique username and assign a password for their accounts.
- 1.3. Tenderers are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the e-procurement Portal.

2. Obtaining a Digital Certificate:

- 2.1. The Tenders submitted online should be encrypted and signed electronically with a Digital Certificate to establish the identity of the Tenderer Tender online. These Digital Certificates are issued by an Approved Certifying Authority, by the Controller of Certifying Authorities, Government of India.
- 2.2. A Digital Certificate is issued upon receipt of mandatory identity (i.e. Applicant's PAN Card) and Address proofs and verification form duly attested by the Bank Manager/ Postmaster/ Gazetted Officer. Only upon the receipt of the required documents, a digital certificate can be issued. For more details please visit the website– <https://etenders.hry.nic.in>.
- 2.3. The Tenderers may obtain Class-II or III digital signature certificate from any Certifying Authority or Sub-certifying Authority authorized by the Controller of Certifying Authorities or may obtain information and application format and documents required for the issue of digital certificate from.
- 2.4. The Tenderer must ensure that he/she comply by the online available important guidelines at the portal <https://etenders.hry.nic.in> for Digital Signature Certificate (DSC) including the e-Token carrying DSCs.

For any queries related to e-tendering process (registration, online e-bid submission/withdrawal, uploading of documents), Tenderer may contact the below representative of NIC:

Ms. Manju Aggarwal

Technical Director,

Scientist-E, NIC.

Panchkula.

E - mail: a.manju@nic.in

Help Desk: 0172 – 584257, 94170-69017.

2.5. Tender for a particular tender must be submitted online using the digital certificate (Encryption & Signing), which is used to encrypt and sign the data during the stage of bid preparation. In case, during the process of a particular tender, the user loses his digital certificate (due to virus attack, hardware problem, operating system or any other problem) he will not be able to submit the bid online.

Hence, the users are advised **to keep a backup of the certificate** and also keep the copies at safe place under proper security (for its use in case of emergencies).

2.6. In case of online tendering, if the digital certificate issued to the authorized user of a firm is used for signing and submitting a bid, it will be considered equivalent to a no-objection certificate/power of attorney /lawful authorization to that User. The firm has to authorize a specific individual through an authorization certificate signed by all partners to use the digital certificate as per Indian Information Technology Act 2000. Unless the certificates are revoked, it will be assumed to represent adequate authority of the user to bid on behalf of the firm in the department tenders as per Information Technology Act 2000. The digital signature of this authorized user will be binding on the firm.

2.7. In case of any change in the authorization, it shall be the responsibility of management/ partners of the firm to inform the certifying authority about the change and to obtain the digital signatures -7- of the new person / user on behalf of the firm / company. The procedure for application of a digital certificate however will remain the same for the new user.

2.8. The same procedure holds true for the authorized users in a private/Public limited company. In this case, the authorization certificate will have to be signed by the directors of the company.

3. Opening of an Electronic Payment Account:

For purchasing the tender documents online, Tenderers are required to pay the tender documents fee online using the electronic payment gateway service through their Debit Cards & Internet Banking accounts. For online payments guidelines, please refer to the Home page under tab “Guidelines for hassle free Bid Submission” of the e-procurement Portal of Government of Haryana, <https://etenders.hry.nic.in>.

4. Pre-requisites for online Tendering:

In order to operate on the electronic tender management system, a user’s machine is required to be set up. A help file on system setup/Pre-requisite can be obtained from National Informatics Center or downloaded from the home page of the website - <https://etenders.hry.nic.in> the link for downloading required java applet & DC setup are also available on the Home page of the e-tendering Portal.

5. Online Viewing of Detailed Notice Inviting Tenders:

The Tenderers can view the detailed N.I.T and the time schedule (Key Dates) for all the tenders floated through the single portal e-tendering system on the Home Page at <https://etenders.hry.nic.in>

6. Download of Tender Documents:

The tender documents can be downloaded free of cost from the e-tendering portal <https://etenders.hry.nic.in>

7. Key Dates:

The Tenderers are strictly advised to follow dates and times as indicated in the online Notice Inviting Tenders. The date and time shall be binding on all Tenderers. All online activities are time tracked and the system enforces time locks that ensure that no activity or transaction can take place outside the start and end dates and the time of the stage as defined in the online Notice Inviting Tenders.

8. Online Payment of Tender Document Fee, eService fee & Tender Preparation & Submission (Technical & Commercial/ Financial Bid):

8.1. Online Payment of Tender Document Fee + e-Service fee: The online payment for Tender document fee and e-Service Fee shall be made using the secure electronic payment gateway by Tenderers online directly through Debit Cards & Internet Banking accounts.

The secure electronic payments gateway is an online interface between Contractors and Debit card/ online payment authorization networks.

8.2. Preparation & Submission of online Applications/Tenders:

i. Detailed Tender documents may be downloaded from e-tendering website (<https://etenders.hry.nic.in>) **from 17.05.2022 at 05:00 PM to 27.05.2022 upto 03:00 PM** and tender mandatorily be submitted online following the instructions appearing on the screen.

ii. **Scan copy of Documents to be submitted/uploaded for Technical& Commercial bid under online Technical Envelope:** The required documents as indicated in this tender document shall be prepared and scanned in different file formats (in PDF /JPEG/MS WORD format such that file size is not exceed more than 10 MB) and uploaded during the on-line submission of PQQ or Technical Envelope.

A. Only Electronic Form (Refer Tender document).

Financial or Price Bid shall be submitted mandatorily online under Commercial Envelope and original not to be submitted manually.

NOTE:-

- (A) *Tenderers participating in online tenders shall check the validity of his/her Digital Signature Certificate before participating in the online Tenders at the portal <https://etenders.hry.nic.in>.*
- (B) **For help manual please refer to the ‘Home Page’ of the e-tendering website at <https://etenders.hry.nic.in>, and click on the available link ‘How to...?’ to download the file.**

In the first instance, the online payment details of tender document fee + e-Service & PQQ/Technical Envelope shall be opened. Henceforth financial bid quoted against each of the item by the shortlisted Tenderer/ Agency wherever required shall be opened online in the presence of such Tenderers/ agency who either themselves or through their representatives choose to be present.

The Tenderer can submit online their bids as per the dates mentioned in the schedule/Key Dates above.

Other Information:

1. The Tenderers shall fill in the item rate in the online BOQ templates of the tender.
2. Duly accepted copy of notarized or registered power of Attorney along with its two certified copies in the name of tenderer or authorized representative to act on behalf of the agency.
3. Tenderer must strictly abide by the stipulations set forth in detailed notice inviting tenders while tendering for the work.
4. In case any tenderer does not comply with procedure given in the tender document, it will be presumed that the tenderer is not interested in work and the work shall not be let out to him. Further he may be de-barred without further notice to him for failing to abide by the approved terms of detailed notice inviting tenders for this work.
5. The tenders which are not accompanied by the Tender-Securing Declaration or do not strictly follow the technical requirement, are liable to be summarily rejected without arising any reason and no claim whatsoever on their account will be considered.
6. Tenders quotations which are dependent upon the quotations of another tender shall be summarily rejected.

DECLARATION/UNDERTAKING

I/We, _____ (name and Designation) on behalf of _____
(Name of the tendering firm) do hereby declare/undertake that I/We have not employed any retired Engineer or retired gazette officer, nor made any Partner/Director etc. in our firm who retires from Government of India/ Government of Haryana Service in last one year as on the date of opening of tender in terms of Clause 2.2.12 of “General Tender Conditions and Instructions to Tenderer(s)” of tender document.

(authorized signatory)
Name of the tendering firm

Place:

Dated:

Definitions

In these Regulations for Tenders and Contracts the following terms shall have the meanings assigned hereunder except where the context otherwise requires:

“Arbitration Act” means the Arbitration and Conciliation Act, 1996 and shall include modifications to or any re-enactment thereof, as in force from time to time;

"BIS" means Bureau of Indian Standards.

“Contractor” means the person or persons, as the case may be, with whom HRIDC has entered into any of the Contract for execution of activities related to the project;

“Director” shall mean Director of HRIDC.

“Competent Authority” means GM/HRIDC

“Drawings” means all of the drawings and documents pertaining to the HORC.

“Engineer” shall mean HRIDC’s DGM of HRIDC/authorized representative of General Consultant of HRIDC in executive charge of the works who is responsible for reviewing the work conducted by Engineer’s Representative and carrying out test checks/ inspections as and when required and work as per instruction of Engineer-In-Charge

“Engineer’s Representative” shall mean the civil supervisor in direct charge of work at site who is responsible for ensuring quality in execution, preparing contractor bill and site execution plans.

“Engineer-In-Charge” shall mean HRIDC’s Officer-in-Charge of works for authorization and decision making. He will be CPM/GM of HRIDC.

“Force Majeure” or “Force Majeure Event” shall mean certain acts, events or circumstances beyond the control of the parties, for example, natural disasters or the outbreak of hostilities.

“General Manager” shall mean the Officer-in-Charge of the general superintendence and control of HRIDC.

“Chief Project Manager” shall means the Officer-in-Charge of the general superintendence and control of HRIDC.

“GOI” means the Government of India;

“HORC” means the Haryana Orbital Rail Corridor Line from Palwal and shall include proposed New Pirthala Station to the proposed Harsana Kalan Station, parallel to DFCCIL line and KMP expressway which shall, connect to Indian Rail on Delhi Mathura line at Palwal Station comprising of system(s) built or to be built and maintained on the Site and includes civil, mechanical and electrical works, rail tracks, signalling and telecommunication equipment, and all other Project Assets necessary for and associated with operation of trains on the Site; Includes Project Section as defined above, its railway stations, staff amenities, offices, feeder routes, sidings including private sidings, loading and unloading infrastructure

conceived and constructed before COD or conceived and augmented after COD in single or multiple stages;

“HRIDC” shall mean Haryana Rail Infrastructure Development Corporation

“Indian Railways” or “IR” shall refer to the India’s national rail system owned by MOR;

“Insurance” means the aggregate of the maximum sums insured under all insurances required to be taken out by contractor

“Limited Tenders” shall mean tenders invited from all or some contractors on the approved or select list of contractors with HRIDC.

“Managing Director” shall mean the Managing Director of HRIDC.

“Open Tenders” shall mean the tenders invited in open and public manner and with adequate notice.

“RDSO” shall refer to Research Design and Standards Organization;

“Right of Way” means the constructive possession of the Site, together with all way leaves, easements, unrestricted access and other rights of way, howsoever described, necessary for construction, operation and maintenance of the Rail System and Commercial Development in accordance with this Agreement;

“State” means the State of Haryana and “State Government” means the government of that State;

“Specifications” shall mean the Specifications for Materials and Works of the Railway as specified under the authority of the Ministry of Railways or Chief Engineer or as amplified,

“Tenderer” shall mean the person / firm / co-operative or company whether incorporated or not who tenders for the works with a view to execute the works on contract with HRIDC and shall include their representatives, successors and permitted assigns.

“Works” shall mean the works contemplated in the drawings and schedules set forth in the tender forms and required to be executed according to the specifications.

CONTRACT AGREEMENT

CONTRACT AGREEMENT NO. _____ DATED _____

ARTICLES OF AGREEMENT made this _____ day of _____ 20____ between the Managing Director, Haryana Rail Infrastructure Development Corporation Limited having his office at SCO 17-18-19, 3rd Floor, Sector-17A, Chandigarh-160017, hereafter called the "HRIDC" of the one part and _____ herein after called the "Contractor" of other part.

WHEREAS the Contractor has agreed with the HRIDC for performance of the works _____ set forth in the Schedule hereto annexed upon the Standard General Conditions of Contract, corrected upto latest correction slips and the Specifications of _____ Railway/Organization corrected upto the latest correction slips and the Schedule of Rates of _____ Railway/Organization, corrected upto latest correction slips and the Special Conditions and Special Specifications, if any and in conformity with the drawings here-into annexed AND WHEREAS the performance of the said works is an act in which the public are interested.

NOW THIS INDENTURE WITNESSETH that in consideration to the payments to be made by the HRIDC, the Contractors will duly perform the said works in the said schedule set forth and shall execute the same with great promptness, care and accuracy in a workman like manner to the satisfaction of the HRIDC and will complete the same in accordance with the said specifications and said drawings and said conditions of contract on or before the _____ day of _____ 20__ and will maintain the said works for a period of _____ Calendar months from the certified date of their completion and will observe, fulfill and keep all the conditions therein mentioned (which shall be deemed and taken to be part of this contract, as if the same have been fully set forth herein), AND the HRIDC, both hereby agree that if the Contractor shall duly perform the said works in the manner aforesaid and observe and keep the said terms and conditions, the HRIDC will pay or cause to be paid to the Contractor for the said works on the final completion thereof the amount due in respect thereof at the rates specified in the Schedule hereto annexed.

Signature of the Contractor/s
HRIDC
Address _____
Date _____

For and on behalf of MD/

Date _____

Signature of **Witnesses** (to Signature of Contractor) with address:
Witnesses:

Drawings

The work shall be carried out as per approved railway drawings. Following drawings/ documents are available on the HRIDC website (<http://hridc.co.in>) and the same may be referred for broad idea regarding the work:

1. KMZ file for proposed alignment
2. Key plan and L-Section
3. GADs of Bridges
4. ESP of yard
5. Geotechnical Investigation Data
6. TBM List
7. Type plans for Km post, Gradient post, Hectometer post and bridge number plaque for NS item.

Form of Tender-Securing Declaration

Date: _____

Tender No.: HRIDC/GGN/MSIL/2022/01

Alternative No.: _____

To:

Haryana Rail Infrastructure Development Corporation Limited (HRIDC),
Plot no.143, 5th floor,
Railtel Tower, Sector-44
Gurugram – 122003

We, the undersigned, declare that:

We understand that, according to your conditions, Tenders must be supported by a Tender-Securing Declaration.

We accept that we will automatically be suspended from being eligible for Tendering, or submitting Proposals in any contract with the Employer for the period of time of _____ starting on _____, if we are in breach of our obligation(s) under the Tender conditions, because we:

- (a) have withdrawn our Tender during the period of Tender validity specified in the Letter of Tender; or
- (b) having been notified of the acceptance of our Tender by the Employer during the period of Tender validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security in accordance with the Instructions to Tenderers (“ITT”) of the Employer’s Tender Document.

We understand this Tender-Securing Declaration shall expire if we are not the successful Tenderer, upon the earlier of (i) our receipt of your notification to us of the name of the successful Tenderer; or (ii) twenty-eight days after the expiration of our Tender.

Name of the Tenderer*

Name of the person duly authorized to sign the Tender on behalf of the Tenderer**

Title of the person signing the Tender

Signature of the person named above

Date signed _____ day of _____, _____

*: In the case of the Tender submitted by joint venture specify the name of the Joint Venture as Tenderer

** : Person signing the Tender shall have the power of attorney given by the Tenderer attached to the Tender

[Note: In case of a Joint Venture, the Tender-Securing Declaration must be in the name of all members to the Joint Venture that submits the Tender.]

IMPORTANT CODAL PROVISIONS TO BE FOLLOWED BY THE CONTRACTOR

1.0	Earthwork												
1.1	<p>Earthwork in embankment/blanketing</p> <p>(a) For Earthwork in formation for Gauge conversion projects RDSO's guidelines for Earthwork in Railway projects GE G-1 with latest amendment will be applicable.</p> <p>(b) For earthwork in formation/ blanketing for New Line and doubling projects guidelines & specifications for design of formation for Heavy Axle Load GE-0014 will be applicable.</p> <p>(c) As per RDSO letter GE/Gen/ Comments/Formation Layer/185/ part 1 dated 25.07.19 and other instructions, guidelines issued thereafter.</p>												
1.2	<p>The soil classification shall be done as per IS: 1498. To formulate the thicknesses of formation layers, various soil groups have been combined together to simplify the classification based on % age fines, in Table-1 below:</p> <table border="1"> <thead> <tr> <th>Soil Group</th> <th>Description w.r.t %age Fines (size < 75 micron)</th> <th>Equivalent soil group as per IS classification</th> </tr> </thead> <tbody> <tr> <td>SQ1</td> <td>Soil containing fines > 50%</td> <td>CL, ML, CL-ML, CI, MI, CH, MH</td> </tr> <tr> <td>SQ2</td> <td>Soil containing fines from 12% to 50%</td> <td>GM, GC, SM, SC, GM-GC, SM-SC</td> </tr> <tr> <td>SQ3</td> <td>Soil containing fines < 12%</td> <td>GW, GP, SW, SP, GW-GM, GW-GC, GPGM, GP-GC, SW-SM, SP-SM, SP-SC</td> </tr> </tbody> </table>	Soil Group	Description w.r.t %age Fines (size < 75 micron)	Equivalent soil group as per IS classification	SQ1	Soil containing fines > 50%	CL, ML, CL-ML, CI, MI, CH, MH	SQ2	Soil containing fines from 12% to 50%	GM, GC, SM, SC, GM-GC, SM-SC	SQ3	Soil containing fines < 12%	GW, GP, SW, SP, GW-GM, GW-GC, GPGM, GP-GC, SW-SM, SP-SM, SP-SC
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1.3	<p>Earthwork in cuttings:</p> <p>For earthwork in cutting RDSO guidelines for cutting in Railway formation GE G-2 with latest amendment will be applicable.</p>												
1.4	Quality Control of Compacted Earth / Blanket layer												
1.4.1	<p>Compacted Earth: Degree of compaction of each layer of compacted soil should be ascertained by measurement of dry density /Relative Density of soil at locations selected in specified pattern. The method of sampling, frequency of tests, method of tests to be conducted and acceptance criteria to be adopted are as under.</p> <p>a) Method of Sampling: - Various methods of selection of sample points for check of in-situ dry density are in vogue. The sampling adopted has to be such that effectiveness of proper compaction having been done for the entire area under consideration can be judged. For this, the Engineer will lay down in detail the method to be adopted in detail depending on site conditions and accordingly records of checks done are to be properly maintained. However, in absence of such procedure laid down, following method should be adopted.</p> <p>Suggested Method of Sampling: For each layer, a minimum of one sample at a predetermined interval (in compliance with the requirement) along the center line of the alignment, would be taken in a staggered pattern so as to attain a minimum frequency of tests as given in sub para 1.4.1 "b". For subsequent layer, the stagger</p>												

	<p>should be such that the point of sampling does not fall vertically on the earlier sampling points of the layer immediately below. Additional sampling points can be taken, as considered necessary.</p>
1.5	<p>QUALIFYING AND QUALITY ASSURANCE TESTS (Mandatory)</p> <p>Qualifying tests as part of pre-selection of good earth for track subgrade, embankment fill is required to be carried out. Also, quality of compaction is required to be ensured for good quality construction.</p> <p>i) Selection of soil: For selection of soil to be used as embankment fill CBR test is required to be conducted on material. CBR test is conducted on ground soil, embankment fill, prepared sub-grade & blanket material to ensure the minimum specified CBR value of these materials to be used in construction. This test is carried out on soil sample in laboratory as per procedure given in IS: 2720 (Part 16)-1987 & in field as per IS:2720 (Part 31)– 1969.</p> <p>ii) Quality Assurance Test on Compacted Layer: Quality Assurance Tests are required to be conducted on part completion stages of formation, prior to clearing for further earthwork, track linking work:</p> <p>Heavy Proctor test is required to be conducted to determine the Maximum Dry Density of soil as per IS: 2720 (part 8). In-situ density is measured in the field by Sand Replacement Method (IS: 2720 – part 28) or Core Cutter Method (IS: 2720 – part 29) to calculate the degree of compaction. This shall be determined in laboratory as per BIS procedure with the specified frequency of earthwork quantity, as envisaged in ‘Guidelines of Earthwork in Railway Projects, GE: G-1, July, 2003. Brief procedure of these above tests has been given in Annexure-2 of GE-0014.</p> <p>The ground soil/ subsoil strata shall be checked and tested for following criteria:</p> <p>(i) Undrained Cohesion of soil (Cu) \geq 25KPa (ii) EV2(determined from PLT) \geq 20MPa (iii) N (determined from SPT) \geq 5</p> <p>Ground improvement is required, if any of the above parameters not complied with.</p> <p>Ev2 test as per DIN 18134- 2012 shall be conducted at frequency of one test per km over finished earthwork of embankment fill, prepared subgrade, blanket layer. The test procedure is also detailed in RDSO letter GE/Gen/ Comments/Formation Layer/185/ part 1 dated 25.07.19</p>
1.5.1	<p>Frequency of Quality Assurance Tests</p> <p>a) CBR test for selection of formation materials and other tests required for ensuring conformation of the materials (blanket, subgrade) as per specification e.g. size gradation, Cu, Cc, Los Angeles Tests, OMC/MDD etc. shall be conducted at following frequency:</p>

	<p>i) Embankment Fill & prepared subgrade: one set of tests for every 5000 cum. ii) Blanket material: one set of tests for every 500 cum.</p> <p>b) In-situ Degree of Compaction (or In-situ dry density measurement) test shall be conducted on each compacted layer in random pattern at following frequency for the different layers:</p> <p>i) Embankment fill: One density measurement at every 500 sqm surface area of each compacted layers. ii) Blanket and Prepared Subgrade: one density measurement at every 200 sqm surface area of each compacted layers. iii) In case of bank widening, sampling should be done at an interval of minimum 200 meters on widened side(s) of embankment.</p> <p>Ev2 test as per DIN 18134- 2012 shall be conducted at frequency of one test per km over finished earthwork of embankment fill, prepared subgrade, blanket layer</p>																																												
1.6	Requirement of Blanket Layer:																																												
1.6.1	<p>The provision of blanket layer shall not be needed when formation/ earth fill embankment have:</p> <p>(i) Rocky beds except those, which are very susceptible to weathering e.g. rocks consisting of shale and other soft rocks, which become muddy after coming into contact with water. (ii) Soil of GW, SW, GW-GM, SW-SM type. (iii) Soils conforming to specifications given in Para 1.6 below</p> <p>The provision of separate Blanker layer shall not be necessary when Coarse granular, well graded ($C_u > 7$, C_c between 1 and 3) soil/quarry dust/crushed stones material of 300 mm thickness is laid as top layer.</p>																																												
1.6.2	For other conditions, the system of layered construction of embankment consisting of prepared subgrade shall normally be followed. The Prepared sub-grade should normally consist of good quality soils with fines less than 12%.																																												
1.6.3	<p>Thickness of prepared sub-grade and blanket layer has been rationalized based on UIC-719R calculation for ballast cushion as 350mm.</p> <p>Prepared subgrade and Blanket Layers: for 25 T axle Load</p> <table border="1"> <thead> <tr> <th rowspan="2">S.No.</th> <th rowspan="2">Soil type category in subgrade</th> <th colspan="2">Prepared subgrade</th> <th rowspan="2">Recommended blanket thickness</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Soil type</th> <th>Thickness</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SQ1</td> <td>SQ1*</td> <td>-</td> <td>550</td> <td>Single layer</td> </tr> <tr> <td>2</td> <td>SQ1</td> <td>SQ2</td> <td>500</td> <td>400</td> <td>Two layers</td> </tr> <tr> <td>3</td> <td>SQ1</td> <td>SQ3</td> <td>500</td> <td>300</td> <td>Two layers</td> </tr> <tr> <td>4</td> <td>SQ2</td> <td>SQ2*</td> <td>-</td> <td>400</td> <td>Single layer</td> </tr> <tr> <td>5</td> <td>SQ2</td> <td>SQ3</td> <td>350</td> <td>300</td> <td>Two layers</td> </tr> <tr> <td>6</td> <td>SQ3</td> <td>SQ3*</td> <td>-</td> <td>300</td> <td>Single layer</td> </tr> </tbody> </table>	S.No.	Soil type category in subgrade	Prepared subgrade		Recommended blanket thickness	Remarks	Soil type	Thickness	1	SQ1	SQ1*	-	550	Single layer	2	SQ1	SQ2	500	400	Two layers	3	SQ1	SQ3	500	300	Two layers	4	SQ2	SQ2*	-	400	Single layer	5	SQ2	SQ3	350	300	Two layers	6	SQ3	SQ3*	-	300	Single layer
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	The level of compaction of various layers of formation shall be ensured as defined in guidelines issued by RDSO.
1.6.4	Selection of top layers for design of formation as well as for blanket material as given in above Paras and further deviation from these provisions can be finally decided on techno-economic considerations by Engineer -in-charge after recording the reasons.
1.7	Specification of Blanket Material:
1.7.1	The material for blanket layer over prepared sub-grade should be well graded granular material. The following specifications shall be ensured at the time of laying. (i) $C_u > 7$ and C_c between 1 and 3 (ii) Fines (passing 75 microns): 3% to 10% (iii) Los angles Abrasion Value $< 40\%$ (iv) Minimum Soaked CBR value ≥ 25 (soil compacted at 100% of MDD in Lab) (v) Field Compaction: 100% of MDD* in field trial. (vi) Minimum $E_v^{2**} = 100\text{MPa}$ (vii) Size Gradation – within specified range (as tor should lie more or less within specified enveloping curves (vii) Filter criteria should be satisfied with prepared sub-grade layer as given below. Criteria-1: D15 (blanket) $< 5 \times D_{85}$ (Prepared sub- grade) Criteria-2: D15 (blanket) > 4 to $5 \times D_{15}$ (Prepared sub-grade) Criteria-3: D50 (blanket) $< 25 \times D_{50}$ (Prepared sub-grade)
1.7.2	These values can generally be obtained by following the gradation as given in GE: G-0014.
1.8	Method statement & QAP shall be submitted by the successful tenderer as per guidelines issued by RDSO, relevant IS Codes & Manuals and shall be got approved from HRIDC's Engineer- in charge.
2.0	Cement Concrete work
2.1	IRS code of Practice for plain, reinforced & Pre-stressed concrete and IRS Concrete Bridge Code will be apply for General Bridge construction
2.2	For Road bridges, the construction shall comply with the standard specifications and Codes of Practices for Road Bridges issued by Indian Road Congress.
2.3	For building & other construction works provisions of Plain and Reinforced Concrete Code of Practices IS-456-2000 will be followed.
2.4	MATERIALS
2.4.1	General: Water, cement, and fine aggregate shall conform to IS:383:1970 and as specified in Chapter 26 'Mortar' of Unified Standard Specifications for Works & Materials.
2.4.2	Coarse Aggregate

	This shall conform to IS 383:1970 and as specified in Chapter 3 of unified standard specification for works and materials.
2.4.3	Construction Joints
2.4.3.1	<p>Construction joints for structures other than bridges will be provided as under (based on para 4.4.5 of Indian Railway Unified Standard Specifications (works & materials):</p> <p>(a) Concreting shall be carried out continuously up to the construction joints, the position and details of which shall be as shown in structural drawing as directed by the Engineer. Number of such joints shall be kept minimum. The Joints shall be kept at places where the shear force is the minimum. These shall be straight and shall be at right angles to the direction of main reinforcement.</p> <p>(b) In case of columns the joints shall be horizontal and 10 to 15 cm below the bottom of the beam running into the column head. The portion of the column between the stepping off level and the top of the slab shall be concreted with the beam.</p> <p>(c) When stopping the concrete on a vertical plane in slabs and beams an approved stop-board shall be placed with necessary slots for reinforcement bars or any other obstruction to pass the bars freely without bending. The construction joints shall be keyed by providing triangular or trapezoidal filler nailed on the stopboard. Inclined or feather joints shall not be permitted. Any concrete flowing through the joints of stop-board shall be removed soon after the initial set. When concrete is stopped on a horizontal plane, the surface shall be roughened and cleaned after the initial set.</p> <p>(d) When the work has to be resumed, the joint shall be thoroughly cleaned with wire brush and loose particles removed.</p> <p>(e) Fig. 4.2, in Chapter-4 of Indian Railway Unified Standard Specifications (Works & Materials) may be referred to comply with above details for construction joints.</p>
2.4.3.2	<p>Construction Joints shall be avoided as far as possible and in no case the locations of such joints shall be changed or increased from those shown on the drawings, except with express approval of the Engineer. The joints shall be provided in a direction perpendicular to the member axis.</p> <p>Location, preparation of surface and concreting of construction joints shall conform to the additional specifications given in Appendix-A of IRS – Concrete Bridge Code (Clause 8.5.3) which is reproduced below:</p> <p>(a) Construction joints should be positioned to minimize the effect of the discontinuity on the durability, structural integrity and appearance of the structure.</p> <p>(b) As far as possible, joints should be positioned in non-aggressive zones, but if aggressive zones cannot be avoided, joints should be sealed.</p> <p>(c) Joints should be positioned where they are readily accessible for preparation and concreting, the preparation of the joints is more likely to be satisfactory where the cross section is relatively small and where reinforcement is not congested.</p> <p>(d) As far as possible, joints for fair faced concrete should be located where they conform to the architectural features of the construction. Unless they are masked</p>

	<p>in this way, the position of the joints are always obvious, even when the concrete is given a textured finish.</p> <p>(e) If substantial changes in the cross section of a member are necessary, the joints should be formed where they minimize stresses caused by temperature gradients and shrinkage.</p> <p>(f) Joints should be located away from regions of maximum stress caused by loading, particularly where shear and bond stress are high. Construction joints between slabs and ribs in composite beam should be avoided. As a general rule, joints in column are made as near as possible to the beam hunching, joints in beams and slabs should normally be made at the center or within the middle third of the span.</p> <p>(g) The minimum number of joints should be used and their construction should be simple. They should be either horizontal or vertical, because concreting sloping surfaces are usually unsatisfactory.</p> <p>(h) Where concrete is placed in vertical members e.g. walls, columns and the like, the lift of concrete shall finish level or at right angles to the axis of the member, the joint line matching the features of the finished work. Concreting shall be carried out continuously up to the construction joint.</p> <p>(i) Laitance, both on the horizontal and vertical surfaces of the concrete, should be removed before fresh concrete is cast. The surface should be roughened to promote good adhesion. Various methods for removal can be used but they should not dislodge the coarse aggregate particles. Concrete may be brushed with a stiff brush soon after casting while the concrete is still fresh, and while it has only slightly stiffened.</p> <p>(j) If the concrete has partially hardened, it may be treated by wire brushing or with a high-pressure water jet, followed by drying with an air jet, immediately before the new concrete is placed.</p> <p>(k) Fully hardened concrete should be treated with mechanical hand tools or grill blasting, taking care not to split or crack aggregate particles.</p> <p>(l) The best time for treating the joint is a matter of judgment because it depends on the rate of setting and hardening (which is itself dependent on the temperature of the concrete). Before further concrete is cast, the surface should be thoroughly cleaned to remove debris and accumulated rubbish, one effective method, being air jet.</p> <p>(m) Where there is likely to be a delay before placing the next concrete lift, protruding reinforcement should be protected. Before the next lift is placed, rust, loose mortar or other contamination should be removed from the bars and where conditions are particularly aggressive and there has been a substantial delay between lifts, the concrete should be cut back to expose the bars for a length of about 50mm to ensure that contaminated concrete is removed.</p> <p>(n) In all cases, when construction joints are made to essential it is to ensure that the joint surface is not contaminated with release agents, dust or curing membrane, and that the reinforcement is fixed firmly in position at the correct cover.</p> <p>(o) When the form work is fixed for the next lift, it should be inspected to ensure that no leakage can occur from the fresh concrete. It is a good practice to fix a 6mm thick sponge which seals the gap completely.</p>
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	<p>(p) The practice of first placing a layer of mortar or grout is not recommended. The old surface should be soaked with water without leaving puddles, immediately before starting concreting, then the new concrete should be thoroughly compacted against it. When fresh concrete is cast against existing mature concrete or masonry, the older surfaces should be thoroughly cleaned and soaked to prevent the absorption of water from the new concrete. Standing water should be removed shortly before the new concrete is placed and the new concrete should be thoroughly vibrated in the region of the joint.</p>
3.0	REINFORCED CEMENT CONCRETE
3.1	<p>GENERAL Reinforced cement concrete work may be cast-in-situ or pre-cast as may be directed by the Engineer according to the nature of work. Reinforced cement concrete work shall comprise of the following which may be paid separately or collectively as per the description of the item of work.</p> <p>a) Form work (Centring and Shuttering) b) Reinforcement c) Concreting: (1) Cast-in-situ (2) Pre-cast</p>
3.1.1	<p>Selection and Preparation of Test Sample for steel reinforcement: This shall be done in accordance with provisions of IS: 1786 and IS 13920 (2016) All test pieces shall be selected by the Engineer or his authorized representative either –</p> <p>a) From cutting of bars or b) If he so desires, from any bar after it has been cut to the required or specified size and the test piece taken from any part of it.</p> <p>In neither case, the test pieces shall be detached from the bar or coil except in the presence of the Engineer or his authorized representative. The test pieces obtained in accordance with above shall be full sections of the bars as rolled and shall be subjected to physical tests without any further modifications. No reduction in size by machining or otherwise shall be permissible except in case of bars of size 28mm and above. No test piece shall be annealed or otherwise subject to heat treatment. Any straightening which a test piece may require shall be done cold.</p>
3.1.2	<p>Retest Should any one of the test pieces first selected fail to pass any of the tests specified above, two further samples shall be selected for testing in respect of each failure. Should the test pieces from both these additional samples pass, the materials represented by the test samples shall be deemed to comply with the requirement of the particular test. Should the test piece from either of these additional samples fail, the material represented by the test samples shall be considered as not having complied with standard.</p>
3.1.3	Guidelines for use of Steel Items in Railway Projects/Contracts

	<p>(a) All Reinforcement Steel (TMT Bars) and Structural Steel shall be procured as per specifications mentioned in BIS's documents – IS: 1786 and IS 13920(2016) and IS: 2062 respectively. Independent tests shall be conducted, wherever required, to ensure that the materials procured conform to the Specifications.</p> <p>(b) 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 basic raw material and having in-house iron rolling facilities, followed by production of liquid steel and crude steel.</p> <p>(c) However, only certain isolated sections of structural steel, not being rolled by ISPs, can be procured from the authorized re-rollers of ISPs or authorized licensee of BIS having traceability system and who use billets produced by ISPs. Traceability shall be ensured by an officer special authorized by the concerned officer of HRIDC on case to case basis for this purpose.</p> <p>(d) For the TMT reinforcement bars, produced using DRI-EIF process route of steel making, used in major/ safety structures, frequency of testing for chemical composition and Mechanical properties as per IS 1786, may be doubled as mentioned in Unified Standard Specification for Works & Materials (2010) and ACS No. 01 dated 29.07.2015.</p>																				
3.2	FORM WORK (CENTERING AND SHUTTERING)																				
3.2.1	<p>Removal of Form work (Stripping time) In normal circumstances and where ordinary Portland cement is used, forms may generally be removed after the expiry of the following periods. (Based on Clause 9.5.1 of IS: 14687-1999).</p> <table border="1"> <thead> <tr> <th>Type of Formwork</th> <th>Minimum Period before striking Form work</th> </tr> </thead> <tbody> <tr> <td>(a) Vertical formwork to columns, walls, beams</td> <td>16 – 24 hours</td> </tr> <tr> <td>(b) Soffit formwork to slabs (Props to be refixed immediately after removal of formwork)</td> <td>3 days</td> </tr> <tr> <td>(c) Soffit formwork to - beams (Props to be refixed immediately after removal of formwork)</td> <td>7 days</td> </tr> <tr> <td>(d) Props to slabs</td> <td></td> </tr> <tr> <td>(1) Spanning up to 4.5m</td> <td>7 days</td> </tr> <tr> <td>(2) Spanning over 4.5 m</td> <td>14 days</td> </tr> <tr> <td>(e) Props to beams and arches:</td> <td></td> </tr> <tr> <td>(1) Spanning up to 6m</td> <td>14 days</td> </tr> <tr> <td>(2) Spanning over 6m</td> <td>21 days</td> </tr> </tbody> </table> <p>Note: For other cement and lower temperature, the stripping time Recommended above may be suitably modified.</p>	Type of Formwork	Minimum Period before striking Form work	(a) Vertical formwork to columns, walls, beams	16 – 24 hours	(b) Soffit formwork to slabs (Props to be refixed immediately after removal of formwork)	3 days	(c) Soffit formwork to - beams (Props to be refixed immediately after removal of formwork)	7 days	(d) Props to slabs		(1) Spanning up to 4.5m	7 days	(2) Spanning over 4.5 m	14 days	(e) Props to beams and arches:		(1) Spanning up to 6m	14 days	(2) Spanning over 6m	21 days
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3.3	SAMPLING AND ACCEPTANCE CRITERIA OF STRENGTH OF DESIGN CONCRETE MIX (Extract from IS: 456-2000)																				
3.3.1	General:																				

	Samples from fresh concrete shall be taken as per IS: 1199 and cubes shall be made, cured and tested at 28 days in accordance with IS: 516.	
3.3.2	Frequency of sampling	
3.3.2.1	Sampling Procedure A random sampling procedure shall be adopted to ensure that each concrete batch shall have a reasonable chance of being tested that is, the sampling should be spread over the entire period of concreting and cover all mixing units.	
3.3.2.2	Frequency The minimum frequency of sampling of concrete of each grade shall be as shown in para 3.5 below.	
3.3.3	Test Specimen Three test specimens shall be made from each sample for testing at 28 days. Additional samples may be required for various purposes such as to determine the strength of concrete at 7 days or at the time of striking the formwork, or to determine the duration of curing, or to check the testing error. Additional samples may also be required for testing samples cured by accelerated methods as described in IS: 9013. The specimen shall be tested as described in IS: 516.	
3.3.4	Test Results of Sample The test results of the sample shall be the average of the strength of three specimens. The individual variation should not be more than ± 15 percent of the average. If more, the test results of the sample are invalid.	
3.4	ACCEPTANCE CRITERIA	
3.4.1	Characteristic Compressive Strength Compliance Requirement (Clause 16.1 and 16.3 of IS: 456)	
	Specified Grade (1)	Mean of the Group of 4 Non-Overlapping Consecutive Test Results in N/mm² Min. (2)
	M 15 and above	$\geq f_{ck} + 0.825 \times$ established standard deviation (rounded off to nearest 0.5 N/mm ²) Or $f_{ck} + 3 \text{ N/mm}^2$, whichever is greater
		Individual Test Results in N/mm² Min. (3)
		$\geq f_{ck} - 3 \text{ N/mm}^2$
	NOTES -Attempt should be made to obtain results of 30 samples as early as possible to establish the value of standard deviation. In the absence of established value of standard deviation, the values given in Table-8 as per clause No. 9.2.4.2 of IS 456:2000 may be assumed.	

3.4.2	<p>Quantity of Concrete Represented by Strength Test Results</p> <p>The quantity of concrete represented by a group of 4 consecutive test results shall include the batches from which the first and last samples were taken together with all intervening batches.</p> <p>Where the mean rate of sampling is not specified the maximum quantity of concrete that four consecutive test results represent shall be limited to 60cum.</p>																								
3.4.3	Structural adequacy of the parts affected shall be investigated and any consequential action as needed shall be taken to the satisfaction of Engineer-in-charge.																								
3.4.4	Concrete of each grade shall be assessed separately.																								
3.4.5	Concrete is liable to be rejected if it is porous or honey combed; its placing has been interrupted without providing a proper construction joint, the reinforcement has been displaced beyond the tolerances specified; or construction tolerances have not been met. However, the hardened concrete may be accepted after carrying out suitable remedial measures to the satisfaction of the Engineer-in-charge.																								
3.5	<p>RECOMMENDED LIST OF TESTS ON MATERIALS AND WORKS</p> <table border="1"> <thead> <tr> <th rowspan="2">Material</th> <th rowspan="2">Test</th> <th rowspan="2">Field/Lab</th> <th rowspan="2">Test Procedure</th> <th colspan="2">Frequency of Testing (AS per site Requirement)</th> </tr> <tr> <th>Quantity of concrete in the work (cum) or steel for RCC in MT.</th> <th>No. of samples</th> </tr> </thead> <tbody> <tr> <td>Cement Concrete</td> <td>(a) Slump Test</td> <td>Field / Lab</td> <td>Annexure 3.5 of Chapter-3 of IRUSS.</td> <td></td> <td></td> </tr> <tr> <td></td> <td>(b) Cube Test</td> <td>Lab</td> <td>IR Concrete Bridge Code</td> <td>1 – 5 6 – 15 16 – 30 31 – 50 51 & above</td> <td>1 2 3 4 4 plus one additional sample for each additional 50 cum or Part thereof.</td> </tr> </tbody> </table>					Material	Test	Field/Lab	Test Procedure	Frequency of Testing (AS per site Requirement)		Quantity of concrete in the work (cum) or steel for RCC in MT.	No. of samples	Cement Concrete	(a) Slump Test	Field / Lab	Annexure 3.5 of Chapter-3 of IRUSS.				(b) Cube Test	Lab	IR Concrete Bridge Code	1 – 5 6 – 15 16 – 30 31 – 50 51 & above	1 2 3 4 4 plus one additional sample for each additional 50 cum or Part thereof.
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	Steel for Reinforcement in RCC	High Strength Deformed Steel Bars/TMT (a) Nominal Mass (b) Tensile test (c) Bend Test (d) Rebend Test	Lab/Field Lab/Field Lab/Field Lab/Field	IS: 1786:2008 and IS 13920:2016 IS:1608 IS:1599 IS:1786:2008	For Casts/Heats Below 100 tones 2 Per Cast	For Casts/Heats of 100 tones or More 3 Per Cast
4.0	Bridge Works: Super Structure-Concrete This is additional requirement as mentioned in para 2 & 3.					
4.1	CONCRETE FOR SUPERSTRUCTURE					
4.1.1	Additional Requirements Concrete shall meet with any other requirements as specified on the drawing or as directed by the Engineer. Additional requirements shall also consist of the following overall limits of deleterious substances in concrete: a) The total chloride content of all constituents of concrete as a percentage of mass of cement in mix shall be limited to values given below: - Prestressed Concrete: 0.1 per cent - Other reinforced concrete construction: 0.3 per cent b) The total sulphuric anhydride (SO ₃) content of all the constituents of concrete as a percentage of mass of cement in the mix shall be limited to 4 per cent.					
4.1.2	Construction Joints Construction joint for bridge work will be provided as per para 2.4.3.2					
4.2	Method statement & QAP shall be submitted by the successful tenderer as per guidelines issued by RDSO, relevant IS Codes & Manuals and shall be got approved from Engineer- in charge.					
5.0	Bridge Works: Superstructure-Steel					
5.1	FABRICATION OF STEEL WORK					
5.1.1	Codes of Specifications: The work shall be done in accordance with the following Codes and specifications and any other requirements that may be prescribed in special cases. (a) Bridge Work 1. IRS Steel Bridge Code 2. IRS Specification No. B-1-2001 for Steel Girder Bridges					

	<p>3. IRS Specification No P-31 Zinc Chromate red oxide primer. The fabrication and erection of the steel work shall be in accordance with IRS: B1-2001 supplemented by relevant provisions of this Specifications. (b) Iron and steel tanks and staging: IRS Specification No. B-3-61 Part 4</p>
5.1.2	Quality of Steel: - The structural steel will be used as per IS Code 2062 – 2011 as required grade & Quality.
5.1.3	HSFG Bolts: - HSFG Bolts may also be used in lieu of rivets with the approval of Engineer-in-charge of HRIDC. However, RDSO guidelines No.BS-111(Revision-2) Nov-13 shall be strictly followed.
5.1.4	<p>Tolerances Tolerances in dimensions of components of fabricated structural steel work shall be specified on the drawings and shall be subject to the approval of the Engineer before fabrication. A machined bearing surface, where specified by the Engineer, shall be machined within a deviation of 0.25 mm for surfaces that can be inscribed within a square of side 0.5m.</p>
5.1.5	<p>Guidelines for procurement of Steel Items in HRIDC Projects/ Contracts. Procurement of steel items in HRIDC Projects/Contracts for bridge works will be as per para 3.1.3.</p>
7.0	SPECIFICATIONS FOR SUPPLYING AND STACKING STONE BALLAST
7.1	DELETED
7.1.1	DELETED
7.2	SPECIFICATION FOR STONE BALLAST:
7.2.1	GENERAL
7.2.1.1	Basic Quality: - Ballast should be hard durable and as far as possible angular along edges/corners, free from weathered portion of parent rock, organic impurities and in organic residues.
7.2.1.2	Particle Shape: - Ballast should be cubical in shape as far as possible, individual pieces should not be flaky and should have generally flat faces with not more than two rounded/sub-rounded faces.
7.2.1.3	Mode of Manufacture: - Ballast shall be machine crushed.
7.2.2	PHYSICAL PROPERTIES:
7.2.2.1	Ballast sample should satisfy the following physical properties in accordance with IS: 2386 part-IV-1963, when tested as per the procedure given in Annexure-1-2 of specifications for track ballast from RDSO Geo-Technical Engineering Directorate.

	Aggregate abrasion value30% maximum. Aggregate impact value20% maximum.
7.2.2.2	The water absorption tested as per IS: 2386 part-III-1963 (when tested as per the procedure given in Annexure-3 of RDSO Geo-Technical Engineering Directorate) should not be more than 1%.
7.3	The track ballast shall be procured confirming to specifications for Track Ballast-IRSGE-I (Jan 2004) issued by RDSO with amendments up to the date of opening of tender.
8.0	<p>Training of HRIDC Personnel & Contractors Engineers (Applicable for Tenders costing above Rs.20 Cr.):</p> <p>To achieve good quality work, a good working knowledge and experience is required. Practical training in important field of work covering major items included in scope of work in the subject tender (such as concreting, steel fabrication, earthwork as per GE-0014 specification etc.) should be imparted by the contractor at his own cost through trainer duly approved by concerned Engineer Incharge/HRIDC to all engineers i.e. Contractor's and HRIDC. What constitutes the major items of the work will be decided by the HRIDC's Engineer in Charge in consultation with the Contractor. No extra payment will be made to the contractor on this account.</p>

SPECIAL CONDITIONS OF CONTRACT

1.0	SCOPE OF WORK:
1.1	Proposed Location and Scope of Work in brief: The site of work is located in MSIL Plant at Manesar in Gurugram District of Haryana. The Objective of the work is to provide railway yard in MSIL plant premises including its connectivity to Manesar station yard of Haryana Orbital Rail Corridor (HORC). The proposed work involves construction of Embankment for Railway formation, Minor bridges, Building, CC Paver block Platforms, CC Pavement, Supply of ballast, linking of BG track and other ancillary works including transportation of sleepers, supply of special sleepers, switches & crossings and other P-way fittings. The work is excluding supply of Rails and PSC Line sleepers.
1.2	The approximate quantity of earthwork is about 3.8 lakh Cum. Based on L-section provided by HRIDC, Contractor shall prepare cross sections at 20m intervals and submit to the Engineer for approval.
1.3	Minor Bridges: The work consists of two (02) minor bridges (RCC Box Culverts)
1.4	Building: The Work involves construction of one (01) G+1 building with facilities such as Panel Rooms, Relay room, IPS and Data Logger rooms, Battery room, Telecom Power Equipment room, DG cum Solar room, Maintainer room, Office rooms, Restrooms, Canteen, Toilets etc.
1.5	Platforms: The work involves construction of Rail level CC Paver block platforms as per the drawings issued by HRIDC.
1.6	Supply of Ballast, supply of Special Sleepers and P-way fittings : Supply of Ballast, special sleepers such as Level Crossing sleepers, SEJ Sleepers, supply of switches and crossings, supply of P-way fittings etc., as per the Bill of Quantities (BOQ)
1.7	Marking of alignment - Marking out the centre line with the help of total station . including construction of permanent reference pillars (<i>mattam</i>) for TBMs to transfer level from benchmark provided near HORC Manesar Station The maintenance of TBMs during the construction work will be the responsibility of the Contractor.
1.8	Designing of concrete mix for various grades of concrete and getting it approved from HRIDC, well in time before starting the work and it should be ensured to bring the same quality of concrete and materials as detailed in design mix.
1.9	Track Linking Works: Linking of single line BG track from HORC Manesar to Proposed yard of MSIL including linking of Railway yard in MSIL plant at Manesar.
1.10	Shifting of Chartered and Unchartered Utilities : The work involve in shifting of utilities shall be paid under relevant items in Bill of Quantities (BOQ).

1.11	Testing of various building materials as laid down in respective BIS/Railway Codes at frequent intervals, from Laboratory approved by Engineer in Charge.
1.11	Any other item/activity of work, not mentioned above/included in tender schedule, but considered essential for the successful completion of the works/Project.
2.0	GENERAL & BRIEF DESCRIPTION OF SITE:
2.1	Brief details of the site are as under:
2.1.1	The proposed work is to be carried out inside the plant premises of MSIL. For approaching to the site, approach roads including dewatering may have to be provided by the Contractor at his own cost to facilitate leading of material/ men/ machinery. The Contractor is advised to visit the site comprehensively before quoting the offer.
2.1.2	As the proposed work is to be executed inside the plant of MSIL, the Contractor will ensure and make arrangements for the during the movement of his vehicles. All safety precautions for execution of work shall be taken for ensuring safety of running traffic of MSIL.. Similarly, road traffic blocks, diversion of road traffic may be required for execution of work shall be taken by the Contractor at his own cost. All the requisite permissions from MSIL to be obtained from the Contractor for movement of vehicles, entry of manpower etc. Tenderers are required to visit the site and acquaint themselves with the ground features, availability of link roads, and vicinity of the existing structures, traffic regulations regarding plying of heavy and commercial vehicles during day and night-time. Hence, while quoting rates, tenderer is supposed to take care of all such constraints and any claim whatsoever due to any such issue will not be considered later on.
2.1.3	Design and drawings are being finalized/will be finalized and quantities of items are calculated on the basis of tentative drawings, however quantity of some items relating to foundation work may vary as per actual strata met with during execution of work. Therefore, tenderers are requested to quote their most reasonable rates keeping in view possibility of variation in quantity of these items of work. The variation in quantity shall be paid as per approved rates but any claim whatsoever due to variation in quantities will not be entertained on this account.
2.1.4	For smooth execution of work, if required, the tenderers shall take permission/approval from the local bodies/ authorities. HRIDC will give recommendatory letters to help the Tenderers in this issue but responsibility to obtain such permission will be that of the tenderer.
2.1.5	The Contractor/s shall make his/their own arrangements for electric power supply as may be required for the work.
2.1.6	The Contractor shall closely coordinate with the

	The other agencies for execution of the other works i.e. Electric and Signal & Telecom etc. shall also be at site after some time. It is expected that the Contractor is to work in close coordination with other agencies. No additional claim for any restriction of space etc. by working of other agencies would be entertained.
2.1.7	The above information is only for general guidance of the tenderer(s) and they are advised to visit the site and acquaint himself/themselves fully with the site conditions especially in regard to the approaches for transporting the materials/ machinery, storage area, local conditions etc.
3.0	<u>SPECIFICATIONS AND CODES:</u>
3.1	“Indian Railways Unified Standard Specifications-2010 Vol. I & II” with latest correction slips shall govern the specifications of all items of USSOR-2010 appearing in the Tender Schedule. In case, specifications of any item are not covered in above document, the relevant IRS/BIS Code shall be applicable.
3.2	All materials to be used in the works shall be in conformity with the requirement laid down in the “Indian Railways Unified Standard Specifications-2010, Vol. I & II” or the relevant BIS Code/or any other relevant code applicable.
3.3	The decision of the Chief Project Manager /HRIDC shall be final and binding regarding the interpretation of various provisions of the Codes and Specifications as well as the provisions/Clauses of the contract and no claim whatsoever shall be entertained on this account.
3.4	All the work should be executed as per latest updated IS codes, railway specifications ,railway code ,railway manual, railway circulars as per amendment time to time available in the office of DGM /HRIDC of concerned work.
4.0	<u>EMPLOYMENT OF TECHNICAL STAFF:</u>
4.1	The Contractor shall submit the copy of bio-data and Degree/ Diploma certificate of the technical staff prescribed in Sub-Clause 33.0 of General Tender conditions and Instructions to Tenderer (s) for the scrutiny by HRIDC and the same will be approved by HRIDC before deployment and shall be available during the currency of work execution HRIDC reserve the right to scrutinise the records of the Contractor to ascertain as to whether the qualified staff has been actually employed by him and is paid for.
4.2	While passing each “on” account bill, the DGM/HRIDC in-charge will certify the availability of technical staff as above otherwise the recovery shall be made from every bill as specified in Sub-Clause 33.0 of General Tender conditions and Instructions to Tenderer (s)
4.3	The decision of the Engineer in-charge, whether the required Technical staff was not employed by the Contractor shall be final and binding upon the Contractor.

5.0	APPROVED DRAWINGS:
5.1	The work shall be carried out as per approved drawings. GAD, Key plan and L-Section of the proposed work are available and same may be referred.
5.2	Additional information as required by tenderers may be obtained from the office of CPM/HRIDC during office hours on any working day by prior appointment
5.4	CPM/HRIDC., shall have full power to make any alteration in the drawings and to give such further instructions and directions as may appear to him necessary or proper for the guidance of Contractor(s) and for the efficient execution, completion and maintenance of the work. The Contractor(s) should plan the execution of various works in close co-ordination with the Engineer or his authorized representative.
5.5	The design of foundations including depth of foundations below the bed level as well as other drawings may have to be varied during the progress of the work according to actual site conditions. The drawings already prepared and which may be prepared afterwards are not to be taken as final or binding on the HRIDC in any respect. The Contractor(s) shall have no claim on HRIDC, if any change is made in the approved drawings. Also, his inability to make timely arrangement for necessary plant and machinery due to any such change which the Engineer may make will not be taken as an excuse for slow performance or non-performance of the work
6.0	SUPPLY OF CEMENT:
6.1	Ordinary Portland Cement of 43 grade/53 grade conforming to IS: 8112 & IS: 12269 respectively will normally be used.
6.2	Cement shall be procured by the Contractor from the main producers or their authorised dealer of approved make such as Ultratech, Ambuja, A.C.C., JK Super & Birla cement or any other reputed make as approved by Engineer in charge.
6.3	To improve the workability of concrete and cement grout, admixture (Plasticiser/super-plasticiser) conforming to IS: 6925 and IS: 9103 in accordance with clause 5.5 and clause 10.3.3 of IS 456:2000 may be permitted as directed & approved by Engineer-in-Charge subject to satisfactory proven use, manufacturer's certificate and laboratory tests as applicable. The decision of Engineer-in-Charge shall be final in this regard. Plasticiser/super-plasticiser generating hydrogen, nitrogen etc. shall not be permitted.
7.0	STRUCTURAL STEEL FOR HRIDC PROJECTS/CONTRACTS:
7.1	General: All structural steel shall be procured as per specifications mentioned in BIS's document- IS 2062. The steel shall conform to the specifications in the relevant drawing regarding grade designation and quality. Independent tests shall be conducted, wherever required, to ensure that the materials

	procured confirm to the specifications. 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 basic raw material and having in-house iron rolling facilities, followed by production of liquid steel and crude steel, as per ministry of steels guidelines.
7.2	The structural steels for HRIDC projects/ contracts is to be procured from approved primary producers having integrated steel plants namely SAIL, TISCO, RINL, IISCO, JINDAL, ESSAR Ispat Industries Limited, BHUSAN Steels and M/s Shyam Steel Industries Limited and shall confirm to stipulated BIS/IRS specifications applicable.
7.3	However, only on certain isolated section of structural steel, not being rolled by ISPs, can be procured from the authorized re-rollers of ISPs or authorized licensee of BIS, having traceability system and who use billets produced by ISPs. Traceability can be ensured by an officer not below the rank of junior scale specially authorized by the concerned authority of HRIDC on case to case basis for the purpose.
7.4	Before use, Contractor(s) will be required to get the test certificate from the manufacturer pertaining to the various quality tests on steel as specified in the relevant BIS Code.
7.5	In addition, HRIDC will also take samples during the course of work at requisite frequency and get the steel tested to ascertain its conformity to the laid down Specifications at Contractor's cost. Frequency of testing shall be as prescribed by the relevant Code.
8.0	<u>REINFORCEMENT STEEL:</u>
8.1	All reinforcement steel shall be procured as per specification mentioned in BIS document – IS: 1786. Independent test shall be conducted, wherever required to ensure that the material procured confirm to the specifications. This steel shall be procured from only those firms, which are established, reliable, indigenous and primary producers of steel, having integrated steel plants (ISP), using iron ore as the basic raw material and having in-house iron rolling facilities, followed by production of liquid steel and crude steel, as per ministry of steels guidelines. The reinforcement steel for HRIDC projects/ contracts is to be procured from approved primary producers having integrated steel plants namely SAIL, TISCO, RINL, IISCO, JINDAL, ESSAR ispat industries limited, BHUSAN Steels & M/s Shyam Steel Industries Limited/their authorized dealers/ authorized stock yard which should confirm to latest relevant BIS specifications .
8.2	Reinforcement steel bars shall normally be the TMT steel bars or cold twisted deformed bars of grade Fe 500/Fe 500-D (as per design and drawings)

8.3	Before use, Contractor(s) will be required to get the test certificate from the manufacturer pertaining to the various quality tests on steel reinforcement as specified in the relevant BIS Code (IS:1786).
8.4	In addition, HRIDC will also take sample during the course of work at requisite frequency and get the steel tested to ascertain its conformity to the BIS Specification at Contractor's cost. Frequency of testing shall be as prescribed by the relevant BIS Code.
9.0	<u>USE OF RMC (READY MIXED CONCRETE):</u>
9.1	MCC/RCC for Pile, Pile cap, Pier, Pier cap, Pedestal. PSC Girder, Deck Slab, wearing coat, Elevated Platform, Building slab, Footpath slab etc. will be done by automatic RMC plant with satisfaction of Engineer-In-charge.
9.2	Lean concrete/PCC will be laid by automatic RMC plant at site.
9.3	For minor bridges.: 9.3.1 Reinforcement of the bridge will be laid/bind at the site. 9.3.2 Shuttering plate 3-5mm thick will be used for construction. 9.3.3 Ready Mixed concrete (RMC) produced at Contractor's plant or taken from outside, shall be approved by Engineer-in-charge for the concreting. The Contractor shall preferably set up his own RMC plant at site or shall make suitable arrangement, close to the site to ensure high quality RMC supply. The RMC Plant shall be inspected and approved by DGM/HRIDC. The accepted rate for RCC/PSC/CC items shall deem to be for RMC. Nothing extra shall be payable for use of RMC.
9.4	Other Concrete Structure i.e. Retaining Walls/Drains etc.: While lean concrete/PCC will be laid by Weigh Batching/RMC. Other concrete i.e. RCC/MCC will be done with RMC. However, if RMC is not feasible in certain locations, then Weigh Batching Plant Concreting can be allowed with the approval of GM/Projects/HRIDC in such isolated locations/portions.
10.0	<u>CONTRACTOR'S RESPONSIBILITY FOR TEMPORARY WORKS/ MATERIALS, SITE OFFICE AND FIELD LABORATORY:</u>
10.1	The Contractor(s) shall from time to time provide at his own cost all dams, cofferdams and all other temporary works of whatever nature and temporary materials necessary for the construction, completion and maintenance of the works which are the subject of the contract and shall from time to time submit for the information of the Engineer, drawing showing in detail, the type and construction of temporary embankment and other works which he proposes to adopt and construct and the exact position in which he proposes to construct and employ them during the progress of the works as directed by the Engineer,

	<p>furnish particulars and drawings of any other temporary works and details of other temporary materials in use for the sufficient security and safety of all embankment, temporary railway connections and other temporary works or temporary materials which he may construct and/or employ and for all claims for damage to property or injury to persons arising out of any failure or accident to such materials from whatever cause such damage, injury, failure or accident may arise or happen and shall replace, construct, repair and maintain the whole or such embankment or other temporary works or temporary materials until they are certified by the Engineer to be no longer required for the purpose of the contract.</p>
10.2	<p>Dewatering or any other suitable arrangements may be required for carrying out the foundations of works and part of the sub structures up to water level. It should be clearly noted that nothing extra shall be paid for all these arrangements and rates are deemed to be inclusive of all labour and materials and working under water etc. including timbering, shoring, strutting etc., if required. However, extra rate, wherever applicable as per USSOR, might be paid for items of works executed below water level.</p>
10.3	<p>The Contractor should construct the temporary site offices right at the outset of work comprising of 04 well-furnished office rooms with attached toilets (total approximate 40 sqm area) for CPM/HRIDC, DGM/HRIDC, & AM/HRIDC a conference room of reasonable size, office space for concerned engineer in-charge. and allied staff along with a small pantry for the proper working of HRIDC officials at required location as per the approval of the site Engineer. The Contractor shall provide all necessary furniture, almirah, clock, display boards, phones, 4 Nos. Mobile sets/ Walkie-talkie, curtains, 02 Nos computers of latest configurations with printers (all in one) HP make or any other approved brand with internet facilities, electricity along with standby arrangement if required, fans, AC etc. for the use of HRIDC staff. Failure to provide site office within 03 months shall attract a penalty of Rs 1.00 lacs per month, for the period till he constructs the office subject to maximum of completion period of the contract, recoverable from running bill. No payment for providing above facilities will be made by HRIDC. Contractor may please note this and take into account while quoting their rates. If available, HRIDC will arrange land inside the Plant premises of MSIL free of cost to the Contractor for construction of temporary site office for the use of HRIDC officials., However, HRIDC shall not be under obligation to provide land for the above temporary site office until and unless conveniently possible.</p>
10.4	<p>The Engineer shall be at liberty to modify any or all of the drawings submitted by the Contractor(s) in connection with any of the aforesaid temporary works and the execution of such temporary works shall not be commenced until the said drawings or modified drawings have been approved. But examination by the Engineer of the Contractor's drawings or any approval expressed by him with regard to the rate, or to the materials, thereof or there for either with or</p>

	without modification shall not absolve or relieve the Contractor(s) from any of his liabilities in connection there with under the contract.																																				
10.5	The Contractor(s) shall before handing over the works or any part thereof to HRIDC, shall dismantle and remove all temporary works and temporary materials but such removal shall not be effected without the previous written approval of the Engineer and the Contractor(s) shall comply with the directions, if any, given by him as to the method of removal and/or disposal.																																				
10.6	<p><u>SETTING UP OF FIELD LABORATORY:</u></p> <p>For works costing above Rs 5.00 crore, the Contractor(s) shall be required to set up a well-equipped field laboratory size in proportion to the magnitude of work and to suit the nature of work, at his own cost at the work site which shall be open for use and inspection by HRIDC at any time. The laboratory shall be equipped with necessary equipment as directed by Engineer, to carry out the various tests required based on nature of work involved & their conforming to relevant Codal provisions and specifications. All the pressure gauge, machines, equipment and other measuring equipment of the laboratory shall be of BIS approved makes and will be got checked/calibrated regularly as directed by the Engineer and necessary certificate furnished to the Engineer by the Contractor(s). The Contractor(s) shall render all reasonable assistance and help in carrying out the checks and tests.</p> <p>An indicative list of equipment is shown below:</p> <table border="1"> <tr> <td>IS sets of sieves with base and top lid.</td> <td>3 sets</td> </tr> <tr> <td>Pan balance – 10 Kg. capacity (with 1.0gm. least count)</td> <td>3 No.</td> </tr> <tr> <td>Electronics balance – 500 gm capacity (with 0.1gm least count)</td> <td>1 No.</td> </tr> <tr> <td>Core cutter with dolly as per IS:2720</td> <td>5 sets</td> </tr> <tr> <td>Apparatus of sand replacement method as per IS:2720.</td> <td>2 Nos.</td> </tr> <tr> <td>Rammer for cutter</td> <td>2 Nos.</td> </tr> <tr> <td>Liquid limit apparatus hand operated with counter and grooving tools.</td> <td>2 Nos.</td> </tr> <tr> <td>Shrinkage limits apparatus.</td> <td>1 No.</td> </tr> <tr> <td>Stainless steel spatula.</td> <td>3 Nos.</td> </tr> <tr> <td>Wash bottle 1 litre capacity</td> <td>2 Nos.</td> </tr> <tr> <td>Compaction needle</td> <td>1 No.</td> </tr> <tr> <td>Enamelled trays</td> <td>6 Nos.</td> </tr> <tr> <td>Enamelled plates</td> <td>15 Nos.</td> </tr> <tr> <td>Glass plates</td> <td>4 Nos.</td> </tr> <tr> <td>Moisture meter.</td> <td>1 No.</td> </tr> <tr> <td>Procter's compaction apparatus with rammer</td> <td>1 No.</td> </tr> <tr> <td>Physical balance with wt. box 200 gm.</td> <td>1 No.</td> </tr> <tr> <td>Frying pans.</td> <td>2 Nos.</td> </tr> </table>	IS sets of sieves with base and top lid.	3 sets	Pan balance – 10 Kg. capacity (with 1.0gm. least count)	3 No.	Electronics balance – 500 gm capacity (with 0.1gm least count)	1 No.	Core cutter with dolly as per IS:2720	5 sets	Apparatus of sand replacement method as per IS:2720.	2 Nos.	Rammer for cutter	2 Nos.	Liquid limit apparatus hand operated with counter and grooving tools.	2 Nos.	Shrinkage limits apparatus.	1 No.	Stainless steel spatula.	3 Nos.	Wash bottle 1 litre capacity	2 Nos.	Compaction needle	1 No.	Enamelled trays	6 Nos.	Enamelled plates	15 Nos.	Glass plates	4 Nos.	Moisture meter.	1 No.	Procter's compaction apparatus with rammer	1 No.	Physical balance with wt. box 200 gm.	1 No.	Frying pans.	2 Nos.
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	<p>Oven Cube mould of approved manufacturer duly calibrated from NABL lab Cube testing machine with calibration certificate Any other equipment as directed by Engineer-in-charge. Note: (i) Experience site Lab in -charge shall be deputed by the Contractor at his own cost. (ii) Electrical/water connection for Lab shall be arranged by the Contractor on his own cost, nothing shall be paid by the HRIDC on this account.</p> <p>In contracts having quantity of earth work more than 2 lakh cum, the Contractor(s) will be required to arrange the nuclear testing gauge of approved make to measure the in-situ moisture content and field density. All the equipment's, machinery, etc. shall be kept in good working conditions.</p> <p>The cost of setting up the laboratory, equipping and maintaining the same including the cost of electricity/lights & conducting of tests on materials and cubes shall be borne by the Contractor(s).</p> <p>Failure to provide field laboratory within 2 months of commencement of work, shall attract a penalty of Rs 25,000/- per month, recoverable from the running bill.</p>	<p>1 Nos. 30 Nos. 1No. 1 No.</p>
11.0	<p><u>APPROVED BRANDS (Except Cement & Steel):</u> The Contractor(s) shall use the following items of approved makes only as given below: a) Admixture – BASF, MYK, SIKAMENT, CICO, PROTECT, FOSROC, MBT or any other similar brand or as approved by Engineer- in- charge. b) HT Strands-TATA, Usha Martin or as approved by Engineer- in-charge. c) Electrodes/Wires/Flux– Advani -Oerlikon, D&H, Manglam, Ador, Welding Electrodes (India) Ltd and Esab India or as approved by Engineer- in- charge. d) Bolts, Nuts and Washers- Unbraco, Precision Fasteners Ltd, Deepak Fasteners, GKW, Laxmi Precision Screw, Pooja Forge Ltd. or as approved by Engineer- in-charge.</p>	
12.0	<p><u>ROUTINE TESTS AND ADDITIONAL TESTS:</u> Routine tests on various materials shall be carried out as per “IR Unified Standard Specifications for Works & Materials” or as per the relevant BIS Codes. In addition to the tests required under clauses thereof, the Engineer or his representative may order tests to be carried out by an independent person appointed by him at such place or in such laboratory as he may determine in</p>	

	accordance with the appropriate clauses of relevant Standard Specifications and the cost of such tests shall be borne by the Contractor(s).
13.0	<u>INSPECTION OF MATERIALS:</u>
13.1	Whenever the Engineer or his representative gives notice to the Contractor(s) that materials are to be inspected at the site, the Contractor(s) shall having regard to the inspection, test or examination required give to the Engineer or his representative sufficient notice of such materials being ready for inspection.
13.2	Delay to works arising from the late submission of such notice will not be acceptable as reason for delay in the completion of the works.
14.0	<u>REJECTION OF MATERIALS:</u>
14.1	Factory made material shall have to be tested before leaving the manufacturer's premises. However, appropriate materials may also be tested at the site and they may be rejected if found not suitable or not in accordance with the specifications, notwithstanding the result of tests at manufacturer's works or elsewhere or test certificate.
14.2	The Engineer or his representative shall have the right to order, at any time, that any construction materials which do not meet with his approval shall not be used in the works. Such rejected materials shall be removed from the site by the Contractor(s) at his own expenses, notwithstanding any prior approval which might have been given earlier. Once a particular material is rejected by Engineer, an entry to that effect should be made in material passing register.
14.3	The instructions to the Contractor(s) to remove the rejected material within reasonable time as given by the Engineer should be complied by the Contractor(s) at his own cost
14.4	In case of default on the part of the Contractor(s) in removing rejected materials within the time specified in notice, the Engineer shall be at liberty to have them removed by other means at the cost of the Contractor(s). In addition, a penalty of upto Rs 50,000/- per case for above default may also be levied on the Contractor(s).
14.5	<u>MISCELLANEOUS:</u> HRIDC shall not be responsible for any loss or damage to the Contractor/s men, materials, equipment, tools and plants etc. from any cause whatsoever. No claim for idle labour, idle machinery and plant etc., on any account will be entertained. Similarly, no claim shall be entertained for business loss or any such loss.
15.0	<u>TIMELY NOTICE FOR INSPECTION OF FOUNDATIONS ON WORKS TO BE COVERED UP:</u>
	The Contractor(s) shall give notice to the Engineer when and as soon as the excavation of any portion of site for obtaining foundation or bottom, whether above or below water has reached the depth and width shown on the drawings. The Contractor(s) shall also give further notice to the Engineer, whenever any

	<p>foundation or bottom is ready for inspection and whenever it is necessary to cover up a work in respect of which previous inspection is desired by the Engineer, so that the Engineer may inspect the same before it is covered up. No foundation or bottom of work shall be covered up or filled or built upon without the previous consent of the Engineer in writing. In default of such notice and consent in writing aforesaid, the foundation or bottom of work shall on the order of the Engineer in writing, be uncovered and any filling put in or work built thereon be removed or pulled down by the Contractor(s) at his own cost.</p>
16.0	<u>GENERAL:</u>
16.1	HRIDC shall not be responsible for any loss or damage to Contractor's men, material, equipment, tools and plants, etc. due to any cause whatsoever.
16.2	If any work (whether temporary or permanent) or materials, the value of which has been included in an on account bill is destroyed or damaged or has/have for any other reasons to be replaced or restored by the Contractor(s), the value of the work or other materials as destroyed may be recovered by HRIDC administration from any payment due to the Contractor(s) or may be recovered at any time from the Contractor(s) as debit due to the Contractor(s) and no payment made by the HRIDC to the Contractor(s) after the aforesaid amount becomes due and recoverable shall in any way prejudice HRIDC's right for lawful recovery.
16.3	The Contractor(s) will ensure that if minimum water way of the bridge is blocked during the course of construction, then such blockage is removed by him at his own cost before the middle of June every year or as directed by the Engineer. Any damage to the bridge on this account will be the Contractor's responsibility.
16.4	In any case, in which by virtue of section 20(a) and 21(4) of the Contract Labour Regulation and Abolition Act-1970, HRIDC is obliged to provide amenities and/ or pay wages to labour employed by the Contractor(s) directly or through petty Contractor(s) or sub-Contractor(s) under this contract, then the Contractor(s) shall indemnify the HRIDC fully and HRIDC shall be entitled to recover from the Contractor(s), the expenditure incurred on providing the said amenities and/or wages so paid by deducting it from the Security Deposit or from any sum due to the Contractor(s) provided that if any dispute arises as to the expenditure incurred by HRIDC or provision of the said amenities, the decision of the Engineer thereof shall be final and binding.
16.5	The Contractor(s) shall arrange for effective technical supervision of the work and shall be represented by the authorized representative at the site of work during the currency of the contract. He will arrange to receive all the correspondences at the site of work during execution of work.
16.6	No claim for extra payment shall be entertained on account of interruption to work due to rain, floods or delay in arranging closure of water channels, etc.

16.7	There may be a water supply/sewerage/any other underground/overhead line passing at the site of work and any delay in its shifting/adjusting will not entitle the Contractor(s) to any claim whatsoever.
16.8	Work will have to be done in close co-operation with the other Departments/ Agencies, if any.
16.9	<p>NOTICE TO PUBLIC BODIES</p> <p>The Contractor/s shall give to the municipality, police and other authorities, all Notices that may be required by law and obtain all requisite licenses for temporary obstructions, enclosures and pay all fees, taxes and charges, which may be levied on account of his operations while executing the contract. He should make good any damage to adjoining premises whether public or private and supply and maintain any lights etc. required at night. Nothing extra shall be payable on any such account and accepted rates of various items in the schedule of items, rates and quantities shall be deemed to cover any such aspect.</p>
17.0	<u>SAFETY MEASURES/ PRECAUTIONS AND PENALTIES FOR VIOLATIONS:</u>
17.1	<p>The Contractor(s) shall take all precautionary measures in order to ensure the protection of his own personnel, machinery and equipment moving about or working on the plant premises and shall have to conform to the rules and regulations of the HRIDC. If any unforeseen accident or injury happens at site of work, the Contractor(s) shall be solely responsible for the same. This work is being executed in close vicinity of running line and the Contractor shall deploy day and night continuously minimum 02 flagmen/patrol men with necessary equipment as per requirement during different stages of construction. Besides this if necessity arises, if and when in the course of the work, there is likely to be any danger to persons in the employment of the Contractor(s) due to running traffic while working in the plant premises, the Contractor(s) shall apply in writing to HRIDC to provide flagmen or lookout men for protection of such persons. HRIDC will, however, decide as to whether it is necessary to post such flagmen for various types of work and also the number of such men required to protect the gang or gangs of the Contractor(s) working at site. HRIDC shall remain indemnified by the Contractor(s) in the event of any accident occurring in the normal course of work, arising out of the failure of Contractor(s) or his men to exercise reasonable precautions at all places of work whether or not HRIDC decides to post flagmen at any particular site of work.</p> <p>Notwithstanding the above provision, it should be clearly understood that the safety of men and material at the worksite will be the sole responsibility of the Contractor(s).</p>
17.2	The Contractor(s) shall abide by the HRIDC regulations in force for the time being and ensure that the same are followed by his representative, agents or

	sub-Contractor(s) or workmen. He shall give due notices and training to his employees and workers about provision of the above Para.
17.3	If the work is to be executed in proximity of the running railway track, the Contractor(s) will be required to follow all precautions and carryout all works that may be necessary to ensure the safety of the running track/trains, without imposition of any speed restriction thereon as may be directed by the Engineer or his authorized representative. No claim whatsoever will be entertained for either any inconvenience or interruption caused to the Contractor(s) or for the rescheduling of the operations or for any other reasons on this account.
17.4	The Contractor(s) shall be responsible for safe custody of tools and for the safety of his labour. He should ensure that labour on work removes their tools clear of the track on the approach of any trains. After the day's work, the Contractor(s) should ensure that the tools are deposited in proper toolbox before the labourers proceed for their home. Tools issued should not be allowed to fall in unwanted hands that can tamper with the railway track. The Contractor(s) shall employ suitable supervisor to supervise the work at site.
17.5	In case of failure to adhere to above provisions or if unsafe practices/ safety violation by Contractor(s)/his staff are noticed at the site of work, the Contractor(s) shall be levied with a penalty of Rs 20,000/- for the 1st incident, Rs 50,000/- for the 2nd incident and Rs 1,00,000/- for subsequent such incident. Repeated safety violations shall become a valid ground for initiating the contract termination proceedings under Clause-62 of Indian Railways Standard General Conditions of Contract, April 2022.
17.6	In the event of occurrence of an accident at the work site, a departmental enquiry shall be held and in case 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(s). Further, the HRIDC administration reserves the right to terminate the contract with immediate effect if the Contractor(s) is found responsible for causing an accident after giving "show cause notice/notices" to the Contractor(s) in addition to lodging criminal case under Railway Act/IPC.
17.7	<p>Following annexures enclosed with these Special Conditions, Site Data & Specifications will form an integral part of the contract.</p> <ul style="list-style-type: none"> • Annexure-1: Attached (Para 826 of IRPWM, correction slip No. 69 dated 23.05.2001) • Annexure-2: Attached (Training to Supervisors and Operators of Contractor) • Annexure-3: Joint procedure for undertaking Digging work in the vicinity of Underground Signalling, Electrical and Telecommunication cables
17.8	Note: In addition to the above clauses, the Contractor shall also be required to comply with the requirements mentioned in the section ' Safety, Health

	and Environment (SHE) Protocol to be followed by the Contractor' of this tender document.
18.0	<u>GENERAL RESPONSIBILITY AND LIABILITY OF CONTRACTOR:</u>
18.1	The Contractor(s) shall be responsible for any type of structural damage to property or injury caused by work or his workmen to persons, animals, or things and shall indemnify the HRIDC in respect thereof and shall be held entirely responsible for all works carried out by him until it is finally taken over by HRIDC and he will be liable to be called upon to make good any damage or loss which may occur to the bridge work by inclemency of weather, flood, etc. or due to any other cause during entire period until the work is taken over.
18.2	Examination or approval by HRIDC of any drawings or other documents submitted by the Contractor(s) shall not relieve the Contractor(s) of his responsibilities and/or liabilities under this contract.
18.3	Notwithstanding the specifications and conditions stated in the contract, the Contractor(s) shall keep HRIDC authorities fully indemnified and free from all liabilities and risks consequential to any lapse on his part in respect of material quality, standard of workmanship, accuracy of fabrication and the like. He shall provide all labour and material required for execution of the work as per listed standards and in absence of any IRS & BIS specifications to the relevant British/American Standards.
18.4	Latest edition of relevant Codes including upto date correction slips, on date of submission of tender/negotiated rates shall govern. These Codes of Practice are available from the Manager, Government of India publication Branch, Patiala House, New Delhi and Director, Indian Standards Institution, Manak Bhawan, Bahadur Shah Zafar Marg, New Delhi.
18.5	The Contractor(s) must have one copy of each relevant Code at site as applicable for ready reference of Site Engineer/other inspecting officials.
19.0	<u>SCHEDULE FOR TIMELY COMPLETION OF WORK AND PENALTY FOR DELAYS:</u>
19.1	The whole work shall be completed within the stipulated completion period from the date of issue of acceptance letter.
19.2	The sequence in which the various works & activities are programmed & scheduled to be carried out shall be prepared by Contractor(s) in the form of PRIMAVERA/ MS PROJECT and will be submitted to HRIDC within 30 days from the allotment of the work and the same shall be got approved from the Contract Signing Authority. The various works and activities should be detailed with respect to nos. of man and machinery required to be deployed to complete each activity.
19.3	Mid-term progress review and token penalty for slow progress:

	The Contractor shall be required to maintain proportional progress in accordance with programme submitted by the Contractor duly approved by HRIDC. During the course of work, the progress will be reviewed every 3 months, and if the progress achieved by the Contractor is found to be significantly lagging behind the proportional progress shown in the approved programme due to reasons entirely attributable to the Contractor, then a token penalty of up to Rs.10,00,000/- per month of delay, can be imposed by the contract signing authority on the Contractor after issuing a 15 days “show cause notice”. Decision of HRIDC in this regard will be final and binding on the Contractor. However, the penalty so imposed, shall be waived off, if the Contractor achieves the scheduled progress as per approved programme in the subsequent quarters.
20.0	<u>RECORDS OF CONSTRUCTION WORK:</u>
20.1	The Contractor(s) is required to take and supply to Engineer-in-Charge, coloured photographs and films on construction activities including the one prior to the work. The Contractor shall provide the photographs/films as documented of all activities at the time of submission / approval of on account bills to DGM/HRIDC office as directed by the site engineer. A recovery of Rs. 10000/- shall be made in case of failure to do this.
20.2	The coloured photographs shall be taken by the Contractor(s) of all the construction activities pertaining to the work at regular intervals as directed by Engineer-in-Charge. Three sets of 5” x 7” prints of each snap shall be supplied. Out of the above, the Contractor(s) shall be required to supply, as directed by Engineer-in-Charge, blow up size colour prints of up to 36” x 36” size up to 5 photographs of each important site (minimum 03 copies of each). The negatives of all the photographs taken shall also be supplied to the Engineer-in-Charge. The Contractor(s) shall show extreme promptness in supplying of the photographs on directions of Engineer-in-Charge.
20.3	All the cost of reels, taking and recording, developing and printing, etc. shall be deemed to have been included in rates quoted against various items and nothing extra shall be paid for the items of work under this Clause as above.
20.4	HRIDC shall have full ownership and copy right of all these photographs and the Contractor(s)/tenderer(s) shall indemnify HRIDC against any claim of any sort. The Contractor(s) shall maintain accurate plans and charts showing the dates and progress of all main operations and the Engineer shall have access to this information at all reasonable times. Records of tests shall be handed over to the Engineer’s representative after carrying out the tests.
21.0	<u>SITE REGISTERS:</u>
21.1	The following registers will be maintained at site by the Contractor(s): <ul style="list-style-type: none"> i) Site Order Register: The Contractor(s) shall promptly sign orders given therein by the Engineer or his representative or his superior officers and comply with them. The compliance shall be reported by

	<p>the Contractor(s) to the Engineer in reasonable time so that it can be checked/verified</p> <p>ii) Cement Register: This register will be maintained to record daily receipt and issue of cement, thus indicating the balance quantity. The quantum of work done for the cement issued on particular date will also be mentioned.</p> <p>iii) Steel Register: This register will be maintained to record the receipts of steel items and details of reinforcement and members wherever steel is used.</p> <p>iv) Labour Register: This register will be maintained to show daily strength of labour in different categories employed by the Contractor(s).</p> <p>v) Plant and Machinery Register: This register will record daily particulars of machinery with the Contractor(s) and will be signed jointly by the Engineer's representative and the Contractor(s).</p> <p>vi) Compaction Register (for earthwork in filling)</p> <p>vii) Soil samples test register (for earthwork in filling)</p> <p>viii) Quality control register for various materials</p> <p>ix) Cube testing register</p> <p>x) Daily progress register</p> <p>xi) Hindrance register: This register will maintain the number of days when work could not progress/remained suspended and reason thereof. This list given above is not exhaustive.</p> <p>xii) Contractor(s) may be asked to maintain additional registers, if required by Engineer-in-Charge. Any other register instructed by engineer in charge HRIDC time to time will also be prepared by contractor</p>
22.0	<p><u>INTERRUPTION OF WORKS DURING MONSOONS:</u></p> <p>The stipulated completion period is inclusive of the monsoon/rainy season. The Contractor(s) should, therefore, plan and prepare his work keeping this fact in mind.</p>
23.0	<p><u>CONSTRUCTION EQUIPMENT:</u></p>
23.1	The Contractor(s) shall arrange and operate at his own cost, all necessary tools, plants, machineries and equipment necessary for successful and timely completion of work.
23.2	If in the opinion of the Engineer, equipment/plants brought by the Contractor(s) are not suitable for the work concerned, the Engineer shall have the right to order the Contractor(s) to replace them by suitable plants/equipment. In the interest of public convenience, the Engineer may insist on a specific way of execution of the work.
23.3	The Contractor(s) shall be required to give a trial run of the equipment for establishing their capacity to achieve the laid down specifications and tolerance to the entire satisfactions of the Engineer before commencement of any work.

23.4	All equipment provided shall be of proven efficiency and shall be operated and maintained in a manner acceptable to Engineer-in-Charge.
23.5	No equipment shall be removed from the site without prior permission of the Engineer-in-Charge.
24.0	<u>MACHINERY AND PLANT:</u>
24.1	The Contractor(s) will be entirely responsible to arrange all necessary machinery including automatic RMC plant, vibrators, compressors, pumps, pneumatic equipment, dredges, derricks, cranes, service girders, staging, motor vehicles, trailer, tools and plants and their spare parts required for sufficient and methodical execution of work and transport them to the site of work. Delay in procurement of such items due to their non-availability on account of import difficulties or any other cause whatsoever, will not be taken as an excuse for slow or non-performance of the work. Safety of plants and machinery will be the responsibility of the Contractor(s) and for any loss due to any cause or wash away in flood or otherwise, no claim will be entertained on this account whatsoever.
24.2	HRIDC may give on hire to the Contractor(s) any plant or equipment, if available. But it will not entertain any claim due to the HRIDC 's failure to do so nor can the HRIDC's inability to supply such plant taken as an excuse for slow progress or non-performance of the work.
24.3	If, any plant is loaned by HRIDC to the Contractor(s) on hire, charges will be levied, as detailed below and separate agreement will have to be entered into before the plant is issued.
(A)	The cost of the plant for the purpose of calculating the hire charges shall be its book value plus freight charges and all other incidental charges to which supervision charges at the rate of 12½% on total cost will be added.
(B)	The charges per annum will be calculated at the following rates on the cost of plant as per (A) above: <ul style="list-style-type: none"> i) Ordinary repair and maintenance charges 5%. ii) Interest on the capital cost at the ruling rate, dividend payable by HRIDC to the General Revenue iii) Special repair and maintenance charges at 10%. iv) Depreciation charges at the following rates: <ul style="list-style-type: none"> a. Light plant – 16% per annum b. Heavy plant – 10% per annum c. Special plant – 6% per annum <p>The classification of the plants shall be as per Para 1202 of Indian Railway Bridge Manual – 1998.</p>
(C)	An additional 10% on the total (i) to (iv) above to meet contingencies.
	The hire charges per day shall be arrived at by dividing the annual hire charges vide (B) above by 250 which shall be assumed number of working days in a

	year for this purpose. These hire charges will be payable from the day, the plant is handed over till it is returned by the Firm/Contractor(s) to HRIDC. However, during this period if the plant remains out of order for reasons beyond the control of the hirers or is sent for periodical overhaul, such periods shall not be counted for levy of hire charges provided a certificate to that effect is given by the Engineer. In case of any difference of opinion between the Engineer and the Contractor(s), the decision of the JGM/HRIDC will be final and binding.
24.4	Running expenses including fuel, lubricants and stores and labour if supplied by the HRIDC will also be paid by the Contractor(s) at the cost to be determined by the HRIDC. In general, the Contractor(s) should make his own arrangements for the fuel, transporting to the site of work and storing for the use as per prescribed rules.
24.5	Staff and stores for running the plant may be supplied by the Contractor(s) with approval of Engineer. The staff must be properly skilled to operate the plant concerned.
24.6	Items of plant leased to the Contractor shall be handed over to him at the HRIDC workshop or at any place convenient to HRIDC. Carriage charges, hire charges and other incidental charges including leading, loading and unloading etc. to the place of work as also back to the place of delivery or the railway workshop at nominated place, as required by HRIDC, when a plant is no longer required by the Contractor, will be borne by the Contractor
24.7	The Contractor may fabricate the steel work at his workshop at the site of the work or at any of his other workshops. The tenderer must inspect the approach roads right upto/from site of the workshop and should ensure that it would be possible for him to transport the materials by Road. The site, layout and details/ composition of the workshop(s) for fabrication works must be passed/ approved by Engineer/RDSO/Inspection agency as authorized by DGM/HRIDC, before commencing fabrication works.
24.8	The workshop staff shall have requisite experience, proven skill and experience in the technique of fabricating large components. Accuracy of fabrication shall be realized and ensured through controlled high precision jigs, fixtures and templates, which shall be inspected and passed by Engineer/ Any other inspection agency/officer (herein after called I.O) as nominated/ approved by HRIDC.
24.9	The Contractor shall provide one good quality Digital Camera of NIKON/CANON make e.g. Model No. Cool Pix P-520 from NIKON or similar for the use of site Engineer. The Camera will be property of the Contractor after the completion of work.
25.0	<u>Method Statement:</u>
25.1	Method statement for execution planning of the work including quality assurance plan (QAP) shall be submitted by Contractor for approval of CPM/HRIDC, before execution of work and followed strictly.

	<p>The Contractor should identify the various major activities required for successful completion of the work and submit the method statement for each major activity before start of activity for approval of HRIDC. The method statement shall be submitted activity-wise and should broadly contain the following:</p> <ol style="list-style-type: none"> 1. Purpose 2. Scope 3. List of references used for preparation of method statement and that required during execution of activity. 4. The responsibilities of its staff involved in execution. 5. The detailed methodology of execution for the activity including its sub activities Step by step along with sketches/drawings/ photographs/ other relevant details, as required. 6. List of various equipment/tools/plants, their capacity and numbers required. 7. List of technical persons to be deployed for supervision. 8. List of type of other staff along with their numbers. 9. Tests required/to be carried out, if any, before start of activity, during activities or after completion of activity, if any, duly referring to various IS, IRS, IRC, other codes as applicable along with acceptance criteria for various tests. 10. Quality Assurance Plan with Quality Control measures. 11. Various Performa's required for recording of data/tests results/observations during the activity for ensuring proper Quality Control. 12. Check list to be observed at various stages of activity as applicable. 13. Safety measures to be adopted at site. 14. Any other details as considered necessary for specific activity. <p>Contractor should submit method statement well in advance of likely start of activity. Contractor shall not have any claim for extension of time of completion due to delay in approval of method statement</p>
26.0	<p>Mix Design of concrete</p> <p>Prior to execution of design mix concrete, Contractor shall submit mix design for the required strength from a reputed consultant /laboratory to DGM/HRIDC for his approval. The Contractor should modify/carryout mixing design to the satisfaction of the Engineer and get his final approval before carrying out the actual work. Such approval, however, will not relieve the Contractor of his/their responsibilities, obligations regarding minimum strength required. The minimum number of specimens to be cast and standard of acceptance for all kinds of concrete shall be in accordance with relevant IS/IRS codes (latest edition). The cost of mix design is to be included in the relevant items of concreting & nothing extra will be paid to the Contractor on account of designing of concrete mix.</p>
27.0	<p><u>Cement Concrete/RCC:</u></p>

27.1	<p>In case of NS items of reinforced cement concrete/PSC inclusive of cement and admixture, minimum cement content, maximum permissible water cement ratio and desired slump to ensure proper pumping of concrete for different type of members shall be as per following:</p> <table border="1"> <thead> <tr> <th>SN</th> <th>Item</th> <th>Minimum cement content (kg)</th> <th>Max water cement ratio</th> <th>Slump (mm)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Road over Bridge</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Piles</td> <td>400</td> <td>0.4</td> <td>150-200</td> </tr> <tr> <td></td> <td>Substructure & Superstructure</td> <td>380</td> <td>0.4</td> <td>100-120</td> </tr> <tr> <td>2</td> <td>Railway Bridge</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Piles</td> <td>400</td> <td>0.4</td> <td>150-200</td> </tr> <tr> <td></td> <td>Substructure & Superstructure (RCC)</td> <td>400</td> <td>0.4</td> <td>100-120</td> </tr> <tr> <td></td> <td>Superstructure (PSC)</td> <td>430</td> <td>0.4</td> <td>100-120</td> </tr> <tr> <td>3</td> <td>Building</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Piles up to 600mm dia & 10m length</td> <td>350</td> <td>0.4</td> <td>150-200</td> </tr> <tr> <td></td> <td>Structure</td> <td>320</td> <td>0.45</td> <td>100-120</td> </tr> </tbody> </table> <p>The quantity of cement and admixture should be adjusted to ensure proper strength, durability and workability as per site requirement.</p>	SN	Item	Minimum cement content (kg)	Max water cement ratio	Slump (mm)	1	Road over Bridge					Piles	400	0.4	150-200		Substructure & Superstructure	380	0.4	100-120	2	Railway Bridge					Piles	400	0.4	150-200		Substructure & Superstructure (RCC)	400	0.4	100-120		Superstructure (PSC)	430	0.4	100-120	3	Building					Piles up to 600mm dia & 10m length	350	0.4	150-200		Structure	320	0.45	100-120
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27.2	<p>Being a composite item of RCC/PSC, acceptance criteria for the concrete is of paramount importance and provision of clause 18.6 of IRC-112-2011 (as amended from time to time) should be strictly adhered to. Accordingly, all relevant tests as per the specified sampling frequency in the above noted clause shall be strictly adhered to. In case, concrete is not found to comply with acceptance criteria, the tenderer will demolish the affected part at his own cost and recast it. Nothing extra shall be paid for it, including the cost of reinforcement required to be replaced in such process.</p>																																																							
27.3	<p>The tenderer is supposed to estimate the cement consumption at his end before submitting his offer and accommodate the cost of any alteration in cement content over the minimum cement content specified as nothing extra is payable for any increase in cement content during design mix.</p>																																																							
27.4	<p>Material ingredients of concrete shall be as per clause 18.4 of IRC-112-2011 (as updated from time to time).</p>																																																							
27.5	<p>Detail report along with sketches about the work done will have to be submitted by Contractor in two (2) copies duly incorporating photographs and video recording of the work done at various stages. Completion drawing prepared in AutoCAD is also to be submitted in 6 BP copies along with the original tracing and in CD.</p>																																																							

28.0	<p>DISCREPANCIES</p> <p>In case of discrepancies in the description or conflicting interpretation of provisions kept in different sections of contract or among various specifications/codes, following order of preference shall be followed:</p> <p>Technical Matters:</p> <p>a) Description of the item of BOQ.</p> <p>b) The specifications mentioned in this document including specifications of USSOR shall be prime governing. Codes/specifications specifically mentioned in this document shall have overriding preference over other codal provisions.</p> <p>c) Where there is conflict between provisions in IRS & IS specifications, provisions in IRS specifications shall prevail.</p> <p>d) Where there is no provision of specifications in IRS, provisions in IS specifications should be adopted. Where there are no provisions in IRS and IS Specifications, provisions in IRC Specifications should be followed.</p> <p>e) The decision of Engineer shall be final and binding in the interpretation of the clause of the codes of practice and specifications of this tender and no claim whatsoever shall be entertained on this account from the Contractor.</p> <p>General/Other than Technical Matters -For general matters, order of preference shall be as follows:</p> <p>(a) Description in the item of BOQ.</p> <p>(b) Provisions contained in “site data and specifications section of the tender document”</p> <p>(c) Provisions contained in special tender conditions and instructions to tenderer.</p> <p>(d) General Conditions of Contract.</p> <p>(e) Provisions contained in code of practice for Engineering department</p>
29.0	TOOLS AND PLANTS:
29.1	Necessary tools and plants required for handling, assembling and linking shall be arranged by the Contractor himself at his own cost. T & P on hire basis will be provided by the HRIDC if readily available with HRIDC and necessary hire charges will be recovered from the Contractor.
29.2	These tools shall be returned to HRIDC at the end of maintenance period i.e. after successful completion of the contract. Only normal wear and tear shall be accepted and the same shall be decided by the Engineer in charge and shall be final, binding on the Contractor. The Contractor shall have to pay for the tools damaged or lost
29.3	The Contractor shall be required to arrange for safe custody of tools & plants at the times, when the same are not being used and even when these are being used the Contractor shall ensure that labour does not use these tools and plants carelessly and or infringes the running line in any manner. For this, the Contractor shall construct suitable tools boxes at suitable locations to be decided by the Engineer. Nothing extra on this account shall be payable to the Contractor.

30.0	Responsibility for any mishap, derailment, accident arising out of this work:
30.1	In the event of any accident during handling, assembling and linking of P. Way materials or any accident on existing running lines arising on account of Contractor or his own staff not observing safety precautions to various operations required for the execution of this P. Way work, the Contractor shall be fully responsible the damages and also have to pay for the accident relief train arranged, if any at the following rates:
30.2	Accidents involving use of accident relief train Rs.100,000/- per 24 hrs. or part thereof.
30.3	Accidents not involving use of accident relief train Rs.10,000/- per 24 hrs. or part thereof.
31.0	GENERAL:
31.1	The Contractor shall provide communication facility at the work site for effective means of communication like VHF or mobile telephone service etc. between HRIDC office and site of work during the period of validity of contract in order to have effective monitoring of planning and progress of work. However, nothing extra will be paid to the Contractor for such a facility.
31.2	Contractor will have to produce license for labour to be engaged on for this work from the concerned Labour Enforcement Officer under Contractor Labour Regulation and Abolition Act-1970 prior to the commencement of the work failing which payment for the work done will not be made.
31.3	Contractor is required to observe all safety precautions at all time as contained in Annexure attached with the tender documents. Nothing shall be paid on this account.
31.4	The Contractor will have to arrange Electric connection if required at his own cost. However, necessary assistance in arranging Electric connection will be given by HRIDC on the written request of Contractor. In case, HRIDC is unable to arrange Electric connection, HRIDC will not be responsible at all and the Contractor will have to make his own arrangements.
31.5	If proper approach road for transporting the various material are not available, the Contractor may have to handle the material involving head lead etc. Proper space for stacking the material may not be given in the yard and it may be away from the yard. The Contractor will be required to stack the material at the specified area nominated by the Engineer In-charge.
31.6	The work is to be completed on a strict time bound schedule. The Contractor(s) who have sound experience and necessary resources, requisite tools and plants,

	equipment and finance to handle the job shall be considered. Tenderer(s) are required to submit credentials about the experience of having executed these kinds of various works.	
31.7	After the acceptance letter is issued, Contractor will be required to submit the detailed programme for completion of work.	
31.8	Station building design i.e. sub-structure(foundation), super-structure(RCC Beams, RCC columns, RCC Wall, RCC slab, RCC lintel etc.) is to be done by contractor on his cost after approval of design by HRIDC then station building work is to be started.	
32.0	MILESTONE:	
	Sl.No	Milestone in months
	1	06 Months
	2	08 Months
		Commissioning of two lines i.e Line No.1 & Line No.2, Platform on Line No.1 Side in yard and Connectivity line to HORC Manesar station

IRPVMC/S No. 69 dated 23.05.2001	
(Authority RB letter No. 98/CE-II/PRA/32 dated 23.05.2001)	
A new Para No.826 be added to Chapter VII of the IRPWM, 1986 to read as under:	
826	Safe working of Contractor(s) – A large number of men and machinery are deployed by the Contractors for track renewals, gauge conversions, doublings, bridge rebuilding, etc. It is, therefore, essential that adequate safety measures are taken for safety of the trains as well as that of the work force. The following measures should invariably be adopted:
(i)	The Contractor(s) shall not start any work without the presence of HRIDC Supervisor at site.
(ii)	Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work shall be so carried out that there is no infringement to the Railway's Schedule of Dimensions. For this purpose, the area where road vehicles and/or machinery are required to ply, shall be demarcated and acknowledged by the Contractor(s). Special care shall be taken for turning/ reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions
(iii)	The look out and whistle caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable flagmen/detonators shall be provided where necessary for protection of trains.
(iv)	The Supervisor/Workmen should be counselled about safety measures. A Competency Certificate to the Contractor(s) as per performa annexed shall be issued by DGM/HRIDC, which will be valid only for the work for which it has been issued
(v)	The unloaded ballast/rails/sleepers/other P. Way materials after unloading along track should be kept clear off moving dimensions and stacked as per the specified heights and distance from the running track.
(vi)	Supplementary site-specific instructions, wherever considered necessary shall be issued by the Engineer-in-Charge.
Competency Certificate	
Certified that Shri..... P. Way Supervisor of M/s..... has been examined regarding P.Way working on Work. His knowledge has been found satisfactory and he is capable of supervising the work safely.	
Signature of Tenderer(s) Officer	Signature and designation of the Officer

Training to Supervisors and Operators of the Contractor(s):

The Supervisors and Operators of the Contractor(s) proposed to be deployed at the work site, which is close to the running track, shall be imparted mandatory training by the Railway about the safety measures to be adopted while working in the vicinity of running track. Engineer-in-Charge of the work shall decide the scale, extent & adequacy of training. In case training is imparted at a recognized Railway Training Institute, the charges for the same, as decided by Railway shall be recovered from Contractor(s). A Competency Certificate to this effect to the individual Supervisor/ Operator shall be issued as given below, by a Railway Officer not below the rank of Assistant level. No Supervisor/Operator of the Contractor(s) shall work or be allowed to work in the vicinity of running track who is not in possession of valid Competency Certificate.

All the labour, materials, tools, plants, etc. required for ensuring safe running of trains shall be provided by Contractor(s) at his own cost.

Competency Certificate

Certified that Shri..... Supervisor/Operator of M/s..... has been trained and examined in safety measures to be followed while working in the vicinity of running railway track for the work..... His knowledge has been found satisfactory and he is capable of supervising the work safely.

This Certificate is valid only for the work mentioned in this Certificate.

**Signature of Tenderer(s)
Officer**

**Signature and designation of the
Officer**

Appendix-A
Technical Specifications for Plain and Reinforced Cement Concrete

1. Cement

1.1. Product and Materials for Cement

- (a) Cement to be used in the works shall conform to 53-grade OPC (IS: 12269) or blended cement such as Portland Pozzolana Cement (IS: 1489) or Portland Slag Cement (IS:455).
- (b) The Contractor shall submit to the Engineer the Manufacturer's Certificate to affirm that the cement complies with the relevant standard.
- (c) Samples of the proposed cement shall be taken and forwarded to an independent laboratory for analysis before the source is approved.
- (d) Prior to ordering cement, the Contractor shall submit details of the proposed supplier or manufacturer and information on the proposed methods of transport, storage and certification for the Engineer's approval and show that the quantity and quality required can be attained and maintained throughout the construction period. In exposed concrete elements, the cement used in the concrete for entire element shall preferably be from a single manufacturer to ensure uniform colour.
- (e) Subsequent to obtaining the Engineer's approval, the Contractor shall not change the agreed arrangements without the prior approval from the Engineer. Each delivery of cement shall be accompanied by a certificate which shall be submitted to the Engineer immediately after the delivery showing the place of manufacture and the results of standard tests carried out by the manufacturer.

1.2. Testing for Cement

- (a) Samples shall be tested from every batch of cement delivered on site or once for every 1000 bags whichever is more frequent. Samples shall be taken immediately on receipt of cement at site. The methods and procedures for sampling shall be in accordance with IS: 3535.
- (b) Tests shall be carried out for fineness, initial and final setting time and compressive strength (IS: 4031) and results approved by the Engineer before use.
- (c) The Engineer may require any other form of sampling and tests including chemical analysis (IS: 4032) in case the cement supplied is of doubtful quality. The costs of such additional tests shall be borne by the Contractor.

1.3. List of Brands/Makes

Brands/makes of cement shall be got approved by the Engineer.

2. Aggregates

2.1. General

- (a) Aggregates shall conform to the provisions specified in IS 383. Prior to commencing any concrete work, the Contractor shall obtain the Engineer's approval of the proposed types and sources of aggregate. Sampling of aggregates shall be as per IS 2430.
- (b) Water absorption shall be less than 3% by weight, as per IRC: 15 CL. 3.3.4.

2.2. Fine Aggregates (Sand)

- (a) The grading of the sand shall conform to IS: 2386 (Part 1). Sand, if found too coarse, shall be suitably blended with finer sand obtained from approved sources to obtain the desired grading. The provision of two types of sand, their separate stacking and their mixing in the specified proportions shall be at the Contractor's own cost.
- (b) The sand shall not contain silt, shale, clay and other weak particles for more than a total of 3% by weight. In case of sand containing excess silt, clay and chlorides, the sand shall be washed in screw type mechanical washers in potable water to remove the same. The screening and washing of sand shall be completed at least one day before using it in concrete. The washed sand shall be stored on a sloping platform while ensuring that contamination is avoided.
- (c) The sand shall be screened on a 4.75 mm size screen to eliminate oversized particles. The Contractor shall carry out the following tests at Site and ensure that the appropriate provisions of Indian or other standards, as may be applicable, are complied with:
 - i. Proportion of clay, silt and fine dust by sedimentation method as per IS 383 and IS 2386 (Part II)
 - ii. Moisture content in fine aggregate as per IS 2386 (Part III)
 - iii. Water absorption as per IS 2386 (Part III) and IRC: 15 (CL. 3.3.4)
 - iv. Bulk Density or bulkage as per IS 2386 (Part III)
 - v. Grading of fine aggregate as per IS 383 and IS 2386 (Part I)

2.3. Coarse Aggregates

- (a) The nominal maximum size of the coarse aggregate shall be 20 mm, unless otherwise mentioned in the Drawings. Coarse aggregates used for the Works shall be crushed stone conforming to IS 383, obtained from approved sources by the Engineer. Only quarries having jaw crushers with choke feeding arrangements producing aggregates of nearly cubical shape shall be applied.
- (b) Coarse aggregate containing flat or flaky pieces or mica shall be rejected.
- (c) The Contractor shall carry out the following tests at site and ensure that the appropriate provisions of following Indian standards as may be applicable are complied with:
 - i. Moisture content in coarse aggregate as per IS 2386 (Part III)
 - ii. Water absorption as per IS 2386 (Part III) and IRC 15 (CL. 3.3.3)
 - iii. Bulk density and voids as per IS 2386 (Part III)
 - iv. Grading of coarse aggregate as per IS 383 and IS 2386 (Part I)

3. Water

Water used for mixing and curing shall conform to the provisions laid down in IRS: CBC (CL.4.3), if not in contravention to the provisions mentioned herein.

- (a) Water samples from the intended source of supply shall be taken for analysis before any concrete work commences, and at regular intervals throughout the duration of the Works, as approved by the Engineer. Whenever the source of water changes, the water shall be tested for its chemical and other properties or impurities to ascertain its suitability for use in concrete, subject to the approval of the Engineer. No water shall be used until tested and found satisfactory. Cost of all such tests shall be borne by the Contractor.
- (b) Mixing and curing with seawater shall not be permitted.

4. Reinforcement Steel

The Contractor shall refer to Appendix - B of these Technical Specifications.

5. Binding Wire

GI Binding wire shall conform to the provisions laid down in IS 280 and IS 2502.

6. Concrete Admixtures

- (a) Admixtures shall conform to the provision laid down in IRS: CBC (CL. 4.4).
- (b) Concrete admixtures are proprietary items of the manufacturer and shall be obtained only from established manufacturers with proven track record, quality assurance and full-fledged laboratory facilities for the manufacture and testing of concrete. Naphthalene or melamine-based admixtures that are approved by the Engineer only shall be used in the Works. The admixture shall be non-air entraining type. The Contractor shall provide the following information concerning each admixture after obtaining the same from the manufacturer:
 - i. Normal dosage and detrimental effects, if any, of under dosage and over dosage.
 - ii. The chemical names of the main ingredients in the admixtures.
 - iii. The chloride content, if any, expressed as a percentage by weight of the admixture.
 - iv. Values of dry material content, ash content and relative density of the admixture which can be used for uniformity tests.
 - v. Whether or not the admixture leads to the entrainment of air when used as per the manufacturer's recommended dosage, and if so, to what extent.
 - vi. Where two or more admixtures are proposed to be used in any one mix, confirmation of their compatibility.
 - vii. Whether or not there would be an increase in risk of corrosion of the reinforcement or other embodiments as a result of using the admixture.
 - viii. Retardation achieved in initial setting time.

- (c) Physical and chemical requirements of admixtures shall conform to IS 9103. In addition, the following conditions shall be satisfied:
- i. Plasticizers and superplasticizers shall meet the requirements indicated for “Water reducing Admixture”.
 - ii. The air content of freshly mixed concrete, in accordance with the pressure method given in IS 1199, shall not be more than 1% higher than that of the corresponding control mix.
 - iii. There shall be no chloride content in admixture when tested in accordance with IS 6925.
 - iv. Uniformity tests on the admixtures are essential to compare qualitatively the composition of different samples taken from batch to batch or from the same batch at different times.
 - v. All tests relating to the concrete admixtures shall be conducted periodically at an independent laboratory and compared with the data given by the manufacturer.
 - vi. While qualifying the admixture, the infrared spectrograph plot shall be given. Each batch of the supply shall be tested for IR spectrograph and prove the consistency of supply.

7. Storage of Materials

7.1. General

- i. Handling and storage of all material shall be as per IS 4082 and IRS: CBC.
- ii. All materials shall be stored at proper places to prevent their deterioration or intrusion by foreign matter and to ensure their satisfactory quality and fitness for the work. The storage space shall also permit easy inspection, removal and restoring of the materials. All such materials even though stored in approved storage places, will be subjected to acceptance test prior to their immediate use.
- iii. The procedures to be adopted for transportation and storage of the materials shall obtain prior approval from the Engineer.

7.2. Cement

- i. Handling and storage of cement shall conform to the provisions of IRS: CBC (CL.4.7.1).
- ii. Cement shall be transported, handled and stored on the site in such a manner as to avoid deterioration or contamination. Cement shall be stored above ground level in perfectly dry and watertight sheds and shall be stacked not more than eight bags high. Wherever bulk storage containers are used, it shall be ensured that their capacity is adequate to cater to the requirement at Site and they are cleaned at least once every 3 months. Cement older than 3 months from the date of manufacture shall normally not be used, unless the quality is confirmed by tests and the Contractor obtains an approval from the Engineer for the same.

- iii. Each consignment shall be stored separately so that it may be readily identified and inspected, and cement shall be used in the sequence in which it is delivered at Site. Any consignment or part of a consignment of cement which had deteriorated of anysort during storage, shall not be used in the Works and shall be removed from the Site by the Contractor, without adding any costs to the Employer.
- iv. The Contractor shall prepare and maintain proper records on site regarding delivery,handling, storage and use of cement. These records shall be available for inspectionby the Engineer at all times.
- v. The Contractor shall make a monthly return to the Engineer on the date corresponding to the interim certificate date, showing the quantities of cement received and issued during the month and in stock at the end of the month.

7.3. Aggregates

- i. Storage of aggregates shall conform to the provisions of IRS: CBC (CL. 4.7.2).
- ii. Aggregate stockpiles may be made on ground that is denuded of vegetation, is hard and well drained. If necessary, the ground shall be covered with 50 mm plank. Eachsize of aggregate shall be stored separately. Aggregate shall be stored in such a waythat segregation of sizes is prevented and contamination with fines and other undesirable material is avoided.
- iii. In the case of fine aggregates, these shall be delivered at the mixing site in not less than 8 hours before use and shall be tested by the Contractor and approved by the Engineer.
- iv. Coarse aggregates, unless otherwise agreed by the Engineer in writing, shall be delivered to the site in separate sizes (2 sizes when nominal size is 25 mm or less and 3 sizes when the nominal size is 32 mm or more). Aggregates placed directly on the ground shall be used from the stockpile above 30 cm of the ground. Aggregates within 30 cm of the ground shall be cleaned, and then only the clean aggregates will be permitted to be used.

8. Design Mix Concrete

8.1. General

- i) For all items of concrete, only design mix shall be used. Prior to the commencement of construction, the Contractor shall design the mix and submit the proportions of materials, including admixtures to be used to the Engineer for obtaining approval. Suitable water reducing admixtures or super-plasticizing admixtures shall be used for achieving desired workability and strength of the concrete only after obtaining prior approval from the Engineer. No extra payment shall be made for such admixtures.
- ii) Mix design shall conform to the provisions under IRS: CBC (CL. 5.5 and 8.7) and IS: 10262.

- iii) Drying shrinkage of concrete shall be 0.03% or less. Drying shrinkage of concrete shall be tested in accordance with IS 1199.
- iv) When non-bleeding high flow concrete is used, it shall be confirmed that no bleeding occurs under Concrete Bleeding Test specified in IS 9103. The Contractor shall submit the test results to the Engineer prior to the commencement of concrete works for obtaining approval.
- v) Mix design, once approved, must not be altered without obtaining prior approval of the Engineer. However, if the Contractor anticipates any change in quality and/or change in source of future supply of materials than that used for earlier mix design, the Contractor shall inform the Engineer well in advance and bring fresh samples sufficiently in advance, to carry out fresh trial mixes.
- vi) The total chloride content of all constituents of concrete in mix shall be limited to 0.43 kg/m³ for reinforced concrete works and prestressed concrete works as per IS:14959.

8.2. Workability of Concrete

- i) The mix shall have the consistency which allows proper placement and consolidation in the required position. It shall be ensured that uniform consistency is maintained.
 - ii) Workability of concrete shall conform to the provisions of IRS: CBC (CL. 5.3).
- (A) Durability of Concrete

- i Maximum water cement ratio for design mix shall conform to IRS: CBC (Clause 5.4.3) as follows:

Plain Concrete	Reinforced Concrete
0.45	0.40

- ii Minimum grade of concrete shall conform to IRS: CBC (Clause 5.4.4) as follows:

Plain Concrete	Reinforced Concrete
M-20	M-35

- iii Maximum and minimum permissible cementitious material shall conform to IRS: CBC (Clause 5.4.5) as follows:

Minimum (kg/cum)		Max
Plain Concrete	Reinforced Concrete	
250	350	500

8.3. Trial Mixes

- i) The Contractor is entirely responsible for the design of the concrete mixes. However, the design shall have approval from the Engineer. At least 8 weeks before commencing any concreting in the Works, the Contractor shall make trial mixes using samples of coarse aggregates, sand, water, superplasticiser and cement, typical of those to be used in the Works, and which have been tested in an approved laboratory. A clean dry mixer shall be used, and the first batch shall be discarded.
- ii) The mix shall be designed to produce the grade of concrete having the required workability, durability and a characteristic strength not less than appropriate value given in IRS: CBC (CL. 5.1, 5.3 & 5.4). Trial mixes shall be prepared under full-scale site conditions and tested in accordance with IS 10262.
- iii) Whenever there is a significant change in the quality of any of the ingredients for concrete, the Engineer, at his discretion, may order the carrying out of fresh trial mixes. All costs for trial mixes and tests shall be borne by the Contractor's and held to be included in the rates quoted in the priced Bill of Quantities.
- iv) Before commencing the Works, the Contractor shall submit full details of the preliminary trial mixes and tests to the Engineer for approval.

8.4. Size of Coarse Aggregate

The nominal size of coarse aggregates for concrete shall be as per the Drawings. The proportions of the various individual size of aggregates shall be so adjusted that the grading produces densest mix and the grading curve corresponds to the maximum nominal size adopted for the concrete mix.

8.5. Mixing Concrete

8.5.1. General

- i) Production and control of concrete shall conform to IRS: CBC (CL. 5.6).
- ii) Concrete shall be mixed in an automatic batching and mixing plant as per this Technical Specifications. Hand mixing shall not be permitted. The mixer or the plant shall be at an approved location that shall be selected considering the properties of the mixes and the transportation arrangements available with the Contractor. The mixer or the plant shall be approved by the Engineer. Unless permitted by the Engineer, all concrete shall be produced in computerised automatic weigh batching plant having printing facilities to print out records of each batch and installed at the Site.
- iii) Mixing shall be continued till materials are uniformly distributed and a uniform colour of the entire mass is obtained, and each individual particle of the coarse aggregate shows complete coating of mortar containing its proportionate amount of cement.

iv) Mixers which have been out of use for more than 30 minutes shall be thoroughly cleaned before putting in a new batch. Unless otherwise agreed by the Engineer, the first batch of concrete from the mixer shall contain only two thirds of the normal quantity of coarse aggregate for cleaning purpose only, and the same shall not be used for concreting purpose. Mixing plant shall be thoroughly cleaned before changing from one type of mix to another.

8.5.2. Batching on site

- i) Batching of concrete shall conform to the provision of IRS: CBC (CL. 5.6.2) and IS 4925.
- ii) All weighing and measuring equipment shall be tested and calibrated as per IS 4926. The results of these tests and calibration shall be submitted to the Engineer.
- iii) Addition of water to compensate for slump loss shall not be resorted to nor shall the design maximum water content and maximum water-cement ratio be exceeded. If permitted by the Engineer, additional dose of retarder shall be used to compensate the loss of slump at the Contractor's cost. Re-tempering water shall not be allowed to be added to mixed batches to obtain desired slump.

8.5.3. Ready Mixed Concrete

The Contractor can use RMC, if approved by the Engineer. The source batching plant of RMC shall not change during the course of work. If RMC is used, it shall conform to the provisions laid down in IRS: CBC (CL. 5.7).

9. Transporting, Placing and Compaction of Concrete

Transporting, placing, compacting and curing of concrete shall be in accordance with IRS: CBC (CL. 8), IS 456 and IS 5892.

9.1. Transporting

- i) The method of transporting and placing concrete shall have approval from the Engineer.
- ii) Transportation of concrete shall conform to IRS: CBC (CL. 8.1, 5.7), if not in contravention to the following provisions.
- iii) The mix shall be transported by agitating transit mixers, buckets, pumps etc. or as per approval by the Engineer, without causing segregation and loss of cement slurry and without altering its desired properties with respect to water content, water cement ratio, slump, air content, cohesion and homogeneity.
- iv) 1 m³ of each mix shall be supplied to Site before it is required in the Works to enable the Contractor to carry out workability tests. Under no

circumstances shall extra water be added to the concrete after the original mixing is completed.

9.2. Pumping

Pumping of concrete shall conform to IRS: CBC (CL.8.9), if not in contravention to the following provisions.

- i) The type of concrete pump, the diameter of transporting pipe, the route of piping etc. shall be determined considering the pumpability of the concrete to obtain the required quality of concrete after pumping.
- ii) The type and the number of concrete pumps shall be determined in consideration of the pumping pressure, the discharge amount, the pumping rate per hour, the environmental conditions of construction site etc.
- iii) Prior to pumping design mix concrete, pumping of mortar with the same proportion as of design mix concrete shall be done to prevent loss of mortar in pump due to adherence.
- iv) The mortar pumped prior to the concrete pumping shall not discharge into the formwork.

9.3. Placing

- i) Placing of concrete shall conform to the provisions laid down in IRS: CBC (CL. 8.2).
- ii) Prior to concreting, detailed planning on the placing system, the arrangement and the number of pumping cars, the position of the inlet for concrete pump, lighting equipment and arrangements for power supply, the sequence and rate of placing, time interval between concrete lifts etc. shall be specified in the Method Statement and the same shall be submitted to the Engineer for approval. Due allowance shall be made to secure enough clear spacing of reinforcement bars which enables concrete to flow through the spaces between reinforcement bars.
- iii) All formworks shall be thoroughly cleaned to remove debris etc. before concreting. In addition, the Engineer shall inspect that there is no debris etc. in the formwork before concrete is cast. It shall be examined that there is no abnormality in the formwork and falsework before and during concreting.
- iv) No concrete shall be placed in any part of the structure until approval of the Engineer has been obtained. If concreting did not commence within 24 hours of issuance of approval, then it shall be obtained again from the Engineer. Concreting then shall proceed continuously over the area between the construction joints.
- v) Except where otherwise agreed by the Engineer, concrete shall be deposited in horizontal layers to a compacted depth of not more than 300 mm.

- vi) Concrete when delivered in the works shall be maintained at a temperature of not more than 35°C as far as possible.
- vii) Clear spacing between reinforcements shall be secured adequately and lighting equipment shall be arranged adequately in order to visually check the position of inlet of the concrete pump and the filling situation of the concrete during concreting works. In addition, suitable measures shall be taken so that the reinforcement bars do not move and clear cover to the reinforcement bars does not change.
- viii) The clear cover shall be uniform and as per the Drawings. Concrete cover blocks used shall be of the same concrete mix as the member and shall contain the binding wire to secure it to the reinforcement. All ends of binding wire shall be carefully turned inside so that they do not project out of concrete cover. Reinforcement bars shall be adequately secured by chairs/ties/hangers so that it maintains its position during casting and vibrating concrete. Ends of the wires used to tie bars shall be bent into the member.
- ix) In case of concreting the horizontal member immediately after the concreting of vertical member is finished, the horizontal member shall be cast after any settlement of concrete of the vertical member ceases in order to prevent settling cracks.
- x) If bleeding water is present on the surface of concrete during concreting, the bleeding water shall be removed before the following concrete is placed.
- x) The Contractor shall ensure that the place where concreting is to be done shall be free of water.

9.4. Compaction

- i) Compaction of concrete shall conform to the provisions laid down in IRS: CBC (CL.8.3).
- ii) Additional vibrators in serviceable condition shall be kept at site so that they can be used in the event of breakdowns. Concrete shall be compacted before setting commences and shall not be subsequently disturbed.
- iii) Internal vibrators shall be inserted in an orderly manner. The distance between insertions shall be 500 mm or less. The vibrator shall be made to operate at a regular pattern of spacing. The effective radii of action will overlap approximately half a radius to ensure complete compaction.
- iv) The vibration shall be done till the tone of the vibrated concrete becomes uniform. To achieve an even and dense surface free of aggregate pockets, vibration shall be supplemented by tamping or rodding by hand in the corners of forms and along the form surfaces while the concrete is plastic.
- v) Form vibrators whenever used shall be clamped to the sides of formwork and shall not be fixed more than 450 mm above the base of the new

formwork and concrete shall be filled not higher than 230 mm above the vibrator. The formwork must be made especially strong and watertight where this type of vibrator is used.

- vi) Care must be taken to guard against over vibration especially where the workability of the concrete mix is high as this will encourage segregation of the concrete.

10. Construction Joints

- (i) Construction joints shall be avoided as far as possible and in no case the locations of such joints shall be changed or increased from those shown in the drawings, unless otherwise approved by the Engineer.
- (ii) Where provision of construction joint is unavoidable, the location, direction and construction method of construction joint shall be determined in consideration of the structural strength, durability and appearance of the structure. Concreting shall be carried out continuously up to the construction joints. Construction joints shall conform to the provisions laid down in IRS: CBC (CL. 8.5 and Appendix - A). The Contractor shall submit Method Statement on the construction joints which shall be subject to the consent of the Engineer prior to concreting works.
- (iii) The location of the construction joints and their arrangement, procedure for surface preparation of construction joint and sequence of concreting shall be subject to the consent of the Engineer. Construction joints shall be located at locations where the shearforce is minimum. The joints shall be provided in a direction perpendicular to the member axis. Sequencing of concrete placement shall be organized in such a way that cold joints are totally eliminated. Properly designed reinforcement shall be provided prior to casting of the next lift for transfer of full tensile stress across the joints.

11. Concreting under Special Conditions

Concreting under special conditions shall conform to the provisions laid down in IRS: CBC (CL. 8.6).

12. Concreting in Extreme Weather Conditions

Concreting in extreme weather conditions shall conform to the provisions laid down in IRS: CBC (CL. 8.6.1).

13. Concreting under Water

- i) Concreting underwater and seawater shall conform to the provisions laid down in IRS: CBC (CL. 8.6.2 and CL. 8.6.3), where not contravening to the following provisions.
- ii) When it is necessary to deposit concrete underwater, the methods, equipment, materials and proportions of mix to be used shall obtain approval of the Engineer, prior to the commencement of any work.

- iii) Concrete shall not be placed in water having a temperature below 5 °C. The temperature of the concrete, when deposited, shall neither be less than 16 °C nor more than 35 °C.
- iv) All underwater concreting shall be carried out by tremie method as described in IRS:CBC (CL. 8.6.2) only, using tremie of appropriate diameter. The number and spacing of the tremie shall be worked out to ensure proper concreting. The tremie concreting when started shall continue without interruption for the full height of the member being concreted. The concrete production and placement equipment shall be adequate to enable the underwater concrete to be completed uninterrupted within the stipulated time. Necessary standby equipment shall be available for emergency situation.
- v) In case of withdrawal of tremie out of the concrete either accidentally or to remove a choke in the tremie with the approval of the Engineer, the tremie shall be reintroduced in the following manner to prevent impregnation of laitance or scum lying on top of the concrete deposited in the bore. The tremie shall be gently lowered on to the old concrete with very little penetration initially. A vermiculite plug shall be introduced in the tremie. Fresh concrete of slump between 150 mm and 175 mm shall be filled in the tremie which will push the plug forward and will emerge out of the tremie displacing the laitance or scum. The tremie shall be pushed further in steps making fresh concrete sweep away the laitance or scum in its way. When tremie is buried in for about 0.60 m to 1.0 m, concreting may be resumed.
- vi) In case of concreting through tremie or such pipes which are subsequently withdrawn, the concrete shall be placed in adequate quantity to ensure that during withdrawal of the tube, a sufficient head of concrete is maintained to prevent the inflow of soil and water or bentonite slurry.
- vii) No concrete shall be allowed to come in contact with seawater within 72 hours of casting.

14. Concreting under Aggressive Soils and Water

Concreting under aggressive soils and water shall conform to the provisions laid down in IRS: CBC (CL. 8.6.4).

15. Curing of Concrete

15.1. General

- i) Concreting operations shall not commence until adequate arrangements for curing of concrete have been made by the Contractor. Curing and protection of concrete shall commence after the concrete has set hard enough, to withstand stresses due to curing work and does not get damaged, in order to protect it from the following:
 - a. Premature drying out, particularly by solar radiation and wind.
 - b. High internal thermal gradients.

- c. Leaching out by rain and flowing water.
 - d. Rapid cooling during the first few days after placing.
 - e. Low temperature.
 - f. Vibration and impact which may disrupt the concrete and interfere with its bond to the reinforcement.
- ii) Where members are of considerable size and length, with high cement content, accelerated curing methods may be applied, as approved by the Engineer.

15.2. Curing Procedure

- i) In order to ensure the required quality of concrete in terms of parameters such as strength, durability and permeability, concrete shall be cured adequately, being kept at a temperature and humidity necessary to be hardened within a certain period of time after concreting, in order not to be affected by harmful effects such as low or high temperature, rapid temperature change, drying, loading and impact loading.
- ii) Curing of concrete shall conform to the provisions laid down in IRS: CBC (CL. 8.4). Approved curing compounds shall be used in lieu of moist curing, with the approval of the Engineer, particularly for all vertical faces and inaccessible areas, conforming to IRS: CBC (CL. 8.4.2).

15.3. Finishing

Finishing shall conform to the provisions laid down in IRS: CBC (CL. 6.2.4), if not in contravention to the following provisions:

- (a) Immediately after removal of forms, exposed bars or bolt, if any, shall be cut inside the concrete member to a depth of at least 50 mm below the surface of the concrete and the resulting holes shall be filled with cement mortar of dry pack consistency.
- (b) All construction and expansion joints in the completed work shall be left carefully tooled and free of any mortar and concrete. Expansion joint filler shall be left exposed for its full length with clean and true edges.
- (c) The finished surfaces of concrete after removal of formwork shall be such that no touching up is required. All fins caused by form joints, if any, shall be ground using electric surface grinder.
- (d) Immediately on removal of forms, before any defects are rectified, the concrete work shall be examined by the Engineer.
 - i) Exposed concrete surfaces shall be smooth and even, originally as stripped, without any finishing or rendering. The Contractor shall exercise special care and supervision of formwork and concreting to ensure that the cast members are made true to their sizes, shapes and positions. The work that has sagged or contains honeycombing to an extent which is detrimental to structural safety or architectural appearance shall be rejected. Honeycombed parts of the concrete, including other surface

defects in the concrete, shall be removed by the Contractor as per the methods which do not affect the strength of adjoining concrete and as per approval of the Engineer. In the final finish, no honeycombing is allowed.

- ii) Part of defective concrete thus removed shall be recast using fresh concrete of same grade, as approved by the Engineer without any additional cost. For that purpose, the Contractor shall prepare a comprehensive work procedure and obtain approval of the Engineer. No additional payment shall be made for repair of the concrete. The Contractor shall ensure that no air bubbles are formed on the exposed surface. Concrete pouring sequence, vibration methodology etc. shall be planned to ensure that air bubbles are not formed. All materials, sizes and layouts of formwork including the locations for their joints shall have approval from the Engineer prior to the commencement of the works.
 - iii) After the finishing works, cracks which occurred in the surface of concrete until the concrete starts to set shall be removed by refinishing or tamping.
- (e) The top face of a slab intended to be surfaced with other material shall be left with a spaded finish.
 - (f) Chemical surface retarders, if approved by the Engineer, shall be used to produce an exposed aggregate finish, provided the Contractor demonstrates that the durability of the concrete surface is not reduced.

16. Inspection, Tests and Standards of Acceptance

- (a) The Contractor shall submit test certificates from the manufacturer or supplier of materials along with each batch of material(s) delivered to site.
- (b) The Contractor shall set up a field laboratory with necessary equipment for testing of all materials, finished products to be used in the construction.
- (c) The testing of all the materials shall be carried out by the Contractor at the field laboratory or from the laboratory approved by the Engineer and in the presence of the Engineer. The Contractor shall make all the necessary arrangements and bear the entire cost for the same.
- (d) Tests which cannot be carried out in the field laboratory shall be done at the Contractor's cost at any recognized laboratory or testing establishments having NABL certification and duly approved by the Engineer.
- (e) If materials are brought from abroad, the cost of sampling or testing, whether in India or abroad, shall be borne by the Contractor. The Contractor shall provide and maintain on site, until the works are completed, at all times the equipment and staff required for carrying out these tests.

17. Quality Control of Concrete

- (a) The Contractor shall carry out the following tests for concrete, at the site of placing, and ensure that they comply with appropriate provisions of Indian and/or other standards, as may be applicable:
- i) Slump test for concrete: The frequency of slump test shall be as follows:
 - ii) Case 1: If the site of placing is at the same area as the concrete plant installed, then it shall be conducted once in every hour, as per IS 1199 (CL. 5.0) and IS 7320.
 - iii) Case 2: Other than Case 1, it shall be conducted once in each delivery of transit mixer, as per IS 1199 (CL. 5.0) and IS 7320.
 - iv) Tolerance for slump shall conform to IS 4926 (CL. 6.2.1).
 - v) Compressive and Flexural strength of concrete: Sampling, Strength tests and Acceptance criteria of concrete shall conform to IRS: CBC (CL. 8.7) according to the type of concrete grade.
 - vi) Chloride ion content test: It shall be conducted as per IS:15949 once a week. Chloride ion content shall be 0.43 kg/m³ or less.
 - vii) Relative Density and pH value of plasticizer (if used): The test shall conform to IS 9103 (CL. 7.1, CL. 10.0, Annexure - E) and the tolerances shall be as specified in IS 9103 (CL. 9.0, Table-2).
 - viii) Temperature of concrete shall be verified once in each slump test.
 - ix) The concrete shall be verified for permeability and the test procedure along with tolerances shall conform to IRS: CBC (CL. 5.4.2, Appendix - G). The frequency of test shall depend upon the change in design mix or change in source of material used in the work. However, the Engineer shall select random batches of concrete for examination at his discretion, and any time during concreting. Sampling shall generally be done at the point of discharge from the mixer and at placing point. The concrete shall pass the permeability test if it is properly compacted and the water penetration depth in the broken core is less than 25 mm.
- (b) It is the complete responsibility of the Contractor to redesign the concrete mixes as per the standard methods that have been approved and to produce the reinforced concrete conforming to the specifications. The Contractor shall have competent staff to carry out this work.
- (c) After the completion of the quality control checks of concrete, the Contractor shall immediately report the test results to the Engineer by submitting quality control records of the concrete.

18. Inspection of Concrete

- (a) Inspection shall be carried out by the Contractor, after the removal of formwork. Also, additional inspection shall be carried out if instructed by the Engineer.
- (b) Inspection shall be carried out as per approval of the Engineer for the Method Statement, incorporating the test procedures specified in Table 55 below:

Table 55: Inspection of Concrete Surface Condition

Measurement Items	Inspection Method	Place to be Inspected
Presence or absence of honeycombing, cold joint, discoloration, and cracking	Visual inspection at point-blank range	All parts
Presence or absence of cavity, float, and cracking	Hammering Inspection	As per approved Method Statement, and as directed by the Engineer
Clear cover to the outermost reinforcement	Non-destructive testing using a probe	

- (c) Additional non-destructive tests (NDT) on the hardened concrete in the structure as a whole or any finished part of the structure where necessary, or directed by the Engineer, shall be carried out as laid down in IRS: CBC (CL. 18.3).
- (d) The Contractor shall report the inspection results along with the location to the Engineer immediately after the inspection. The forms generated from the probes during the inspection shall be attached to the records.
- (e) If defects such as deleterious cracking, spalling, deformation and finishing defects or damages caused by the Contractor are noticed from the results of the inspection, no repair work shall be commenced without prior permission taken from the Engineer.
- (f) Countermeasures against the defects shall be subject to approval of the Engineer. In this case, “repair work” refers to all actions which make alterations to the surface of concrete after the removal of formwork (including plastering etc.). If repair work is required, the Contractor shall submit Method Statement on the repair work and shall obtain approval of the Engineer for the same, prior to the commencement of repair work. During the repair work, the Contractor shall record about the work, and shall report to the Engineer on the results of the work immediately after the repair work has finished.
- (g) If cracks develop in concrete construction, which in the opinion of the Engineer may be detrimental to the strength of the construction, the Contractor, at his own cost, shall dismantle the construction, carry away the debris, replace the construction and carry out all consequential work thereto.
- (h) If any cracks develop in the concrete construction, which in the opinion of the Engineer, are not detrimental to the stability of the construction,

the Engineer shall decide whether such cracks are required to be grouted. The Contractor shall grout such cracks as decided by the Engineer with polymer cement grout of approved quality at his own risk and cost.

- (i) External crack width shall be restricted to 0.2 mm or less on all concrete structures, unless otherwise specified in the Drawings.

19. Tolerance

Tolerances for the finished concrete structures shall be as specified in the Contract.

20. Precast Concrete

20.1. Manufacture Off-Site

- (a) Casting of members shall not begin until a NONO has been given by the Engineer to the shop drawings, required computation and method of manufacture.
- (b) When the drawings and method of manufacture have been noticed, no changes shall be made without NONO from the Engineer
- (c) The Contractor shall inform the Engineer in advance of the date of commencement of manufacture and casting of each type of member.
- (d) Concrete reinforcement and workmanship shall be as per IS: 456.
- (e) A copy of all cube test results for the precast concrete works shall be sent to the Engineer as soon as these are available.
- (f) No members to which the tests relate shall be dispatched to the Site until the tests have been satisfactorily completed and noticed by the Engineer.

20.2. Forms

The design and fabrication of the forms and false work as well as their construction shall be the responsibility of the Contractor. Forms shall be inspected prior to authorizing casting operations. Details shown on the Drawings shall be built into the forms. Worn, damaged, or otherwise unacceptable forms shall be repaired before casting of any member is authorized. The forms may be made either of steel or of plywood. If the Contractor elects to use plywood forms, it shall be high quality plywood, 19mm minimum thickness marine grade subject to NONO from the Engineer. Forms shall be structurally adequate to support the members within permissible tolerances. Forms shall be coated with a noticed form-release agent prior to use. Anchor devices may be cast into the concrete for later use in supporting forms provided the arrangement has NONO from the Engineer

20.3. Curing

The curing shall be carried out as per approved Method Statement.

20.4. Storage

When members are stored, they shall be firmly supported only at the points specified.

- (a) The accumulation of trapped water and deleterious matter in the units shall be prevented.

- (b) Care shall be taken to avoid rust staining and efflorescence.
- (c) The area intended for the storage of pre-cast units should be surfaced in such a way that no unequal settlement can occur.
- (d) To prevent deformation of slender units, they should be provided with supports at fairly close intervals and should also be safeguarded against tilting. Lifting and handling positions should conform to the Engineer's directions and drawings. In addition, location and orientation marks shall be put on the members, as and where necessary.

20.5. Handling and Transport

- (a) Members shall be lifted or supported only at points specified or otherwise given a NONO from the Engineer and shall be handled and placed without impact.
- (b) The Contractor shall define the method of lifting, the type of equipment and transport to be used, and the minimum age of the members to be handled and shall submit to obtain approval from the Engineer.

20.6. Protection

At all stages of construction, pre-cast concrete units and other concrete associated therewith shall be properly protected to prevent damage to permanently exposed concrete surfaces, specially arises and decorative features.

20.7. **Falsework and Formwork**

20.7.1. General

Falsework and formwork shall conform to the provisions laid down in IRS: CBC (CL. 6.1 to 6.4) and IRC: 87, if not in contravention to the following provisions.

- i) Falsework shall be designed in consideration of appropriate raising (camber) against sinking and deformation due to the weight of the concrete during construction and after completion. Furthermore, the Contractor shall submit the plan of the camber to the Engineer prior to the commencement of works for obtaining approval.
- ii) Ties shall not be welded to the reinforcement bars with the exception of distribution reinforcement and other reinforcements which do not contribute to structural performance. Clear cover to the end of the ties shall not be less than 25 mm. Filling of tie locations after removal of formwork shall be carried out with dry pack cement mortar.
- iii) The formwork shall be of steel plates of proper thickness to give good finish.

20.7.2. Design of Formwork

- i) The Contractor shall submit the design and drawing of complete formwork (i.e. the forms as well as their supports) to the Engineer, before any erection work commences. If proprietary system of formwork is used, the Contractor shall furnish detailed information to the Engineer. However, the Contractor shall be entirely responsible for the adequacy and safety for formwork.

- ii) The foundation of all supports shall be designed to suit the bearing capacity of soil to support the designed loads without settlement.
- iii) The Contractor shall prepare detailed shop drawing showing the arrangement of form work for structural members including shoring system, horizontal and diagonal bracing system, details of foundation etc. The sizes of individual members shall be as per the design calculations.

20.7.3. Finishing of Formwork

- i) Finishing shall conform to IRS: CBC (CL. 6.2.4 and CL. 6.2.5).
- ii) Formwork shall be made to produce a finished concrete true to shape, line, levels and dimensions.
- iii) Chamfers shall be provided at all angles of the formwork to avoid sharp corners. The chamfers, bevelled edges and mouldings shall be made in the formwork itself, conforming to the Drawings.

20.7.4. Cleaning and Treatment of Forms

Cleaning and treatment of forms shall conform to IRS: CBC (CL. 6.3).

20.8. Specialized Formwork

- i) Specialized formwork shall conform to the provisions laid down in IRC: 87 (CL. 10).
- ii) Specialized formwork may be required in the case of slip formwork, underwater concreting etc. Such specialized formwork shall be designed and detailed by competent agencies and a set of complete working drawings and installation instructions shall be supplied to the Engineer. The site personnel shall be trained in the erection and dismantling as well as operation of such specialized formwork. If proprietary equipment is used, the supplier shall supply drawings, details, installation instructions, etc. in the form of manuals along with the formwork. Where specialized formwork is used, close coordination with the design of permanent structure is necessary.
- iii) For slip form, the rate of slipping the formwork shall be designed for each individual case considering various parameters including the grade of concrete, concrete strength, concrete temperature, ambient temperature and concrete admixtures.
- iv) In order to verify the time and sequence of striking or removal of specialized formwork, routine field tests for the consistency of concrete and strength development are mandatory and shall be carried out before adoption.

20.9. Inspection of Formwork

- i) The Contractor shall inspect the formwork and shall submit inspection results by “Formwork Assembly Inspection Record” prior to concreting works.

"Formwork Assembly Inspection Record" describes the results of verification of inspection results of the formwork with design documents in which the shape and dimensions of the formwork, clear cover to the outermost reinforcement, effective height etc. are verified. The proposed form of “Formwork Assembly Inspection Record” shall be submitted by the Contractor for approval of the Engineer.

- ii) Concreting shall not be allowed unless approved for the formwork by the Engineer.

20.9.1. Stripping and Removal of Formwork

- i) Stripping time shall conform to the provisions laid down in IRS: CBC (CL. 6.4).
- ii) The scheme for removal of formwork (i.e., de-shuttering and decentring) shall be planned in advance and submitted to the Engineer for scrutiny and approval. No formwork or any part thereof shall be removed without prior approval of the Engineer.
- iii) The formwork shall be removed in such a manner that does not cause any damage to concrete. Centring shall be gradually and uniformly lowered in such a manner that it permits the concrete to take stresses due to its own weight uniformly and gradually to avoid any shock or vibration.
- iv) Where there are re-entrant angles in the concrete sections, the formwork shall be removed at these sections as soon as possible after the concrete has set to avoid cracking due to shrinkage of concrete.

20.9.2. Reuse of Forms

The Contractor shall not be permitted reuse of timber facing formwork brought new on the works for more than 5 times for exposed concrete formwork and 8 times for ordinary formwork. 5 or 8 uses shall be permitted only if forms are properly cared for, stored and repaired after each use. Use of different quality boards or the use of old and new boards in the same formwork shall not be allowed. If any other type of special or proprietary form work is used, the number of times they can be used shall be given a NONO from the Engineer.

Appendix - B

Reinforcement Steel

1. General

- (i) High strength deformed steel bars for concrete reinforcement used in the works shall be Fe 500D TMT, conforming to IS 1786 and manufactured by SAIL, TISCO, RINL, IISCO, JINDAL, ESSAR ispat industries limited, BHUSAN Steels & M/s Shyam Steel Industries Limited .No rerolled steel shall be used. The Contractor shall produce copy of original challan or voucher as a proof of having purchased the steel reinforcement from manufacturers or their authorised distributors having approval of the Engineer. Reinforcement steel shall be stored as per IS 4082.
- (ii) No work shall be commenced without the Engineer's approval for reinforcement bar bending schedule. The reinforcement bars shall be bent to conform to the dimensions and shape shown in the Drawings in a manner that will not damage the parent material. Bars shall be bent cold. Any reinforcement, which is bent, shall not be re-bent. However, when it is unavoidable to re-bend the reinforcement, the same shall have approval from the Engineer.
- (iii) Placement of reinforcement shall conform to the provisions laid down in IRS: CBC (CL. 7.1.3). Cover and spacing of steel shall be uniform and as specified in the specifications and as shown in the Drawings.
- (iv) Uncoated reinforcement steel shall be protected from rusting or chloride contamination. Reinforcements shall be free of rust, mortar, loose mill scale, grease, oil or paint.
- (v) Cover blocks shall be firmly placed at appropriate intervals to maintain specified concrete cover to the reinforcement. The number of cover blocks to be provided shall generally be about 4 pieces per m² for the bottom surface of the member and about 2-4 pieces per m² for the side surface of the member. Cover blocks shall be made of concrete or mortar having quality equal to or higher than that of the parent concrete.
- (vi) Procurement of reinforcement steel shall be so phased by the Contractor that the storage period before its actual use in the works is limited to the bare minimum as directed by the Engineer.

2. Inspection and Testing

- (i) Manufacturer's test certificate shall be submitted for each lot of supply brought at the Site by the Contractor. Physical tests shall conform to IS 1387, IS 1599, IS 1608 and IS1786. Independent test on quality of steel from each lot shall be carried out as per IRS: CBC (CL. 4.5.2).
- (ii) Specimens required for three tensile tests for each of the different size of bar for each consignment delivered shall be sampled and tested by the Contractor before use at Site. Test results shall be duly supported by graph with respect to stress and strain. If first test of three test samples does not give the specified results, two additional tests shall be carried out. Both retests shall conform to the requirements as specified in IS 1786. The steel shall be rejected otherwise.

- (iii) Reinforcement steel shall be inspected prior to the commencement of works and assembly on Site. Defective, brittle or burnt bar shall be discarded. Cracked ends of bars shall be cut out. All reinforcement steel shall be free of loose small scales, rust and coats of paint, oil, mud etc.
- (iv) The Contractor shall inspect the reinforcement works and submit inspection results by "Reinforcement Assembly Inspection Record". "Reinforcement Assembly Inspection Record" describes the results of verification of inspection results of the reinforcement work with the Drawing in which the diameter, number and length of the reinforcements, the position of splices and joints, the position and interval of the bent reinforcement bar, the type and disposition of cover blocks are verified. The form of "Reinforcement Assembly Inspection Record" shall be proposed by the Contractor for approval of the Engineer.
- (v) The Contractor shall obtain approval of the Engineer for reinforcement work prior to the commencement of concrete work.

3. Tolerances and Criteria

Tolerances and criteria for reinforcement work shall be as specified in Table 56 below:

Table 56: Standard of Tolerances and Criteria for Reinforcement Work

Measurement Items	Tolerances and Criteria
Number of reinforcements	The number of reinforcement bars shall be the same as shown in the Drawings. The intervals of reinforcement bars and the actual placement shall not differ from that shown in the Drawings.
Clear cover to the outermost reinforcement	Tolerances: (Minus side) 0 mm (Plus side) + 20 mm
Effective depth	Tolerance (Minus side): 3% of design value or 30 mm, whichever is smaller

4. Lapping and Joints

- (a) Lapped Splices
No splicing of bars shall be permitted without prior approval of the Engineer. Lengths of splice, wherever required, shall be as indicated on the shop drawings and approved by the Engineer. Lapped splices shall be staggered and located at points along the span where stresses are low.
- (b) Mechanical Joints

No jointing of bars shall be permitted.

Safety, Health and Environment (SHE) Protocol to be followed by the Contractor

Safety, Health and Environment (SHE) Protocol to be followed for this work

1.0 Introduction

1.1 Scope: This document defines the principal requirements of the HRIDC on Safety, Health and Environment (SHE) associated with the Contractor / sub-Contractor and any other agency to be practiced at construction worksites of Haryana Rail Infrastructure Development Corporation (HRIDC) at all time. Since HRIDC is the Principal HRIDC for all work men / women at all its work sites, applicability of HRIDC's SHE Manual is very important.

1.2 Application of this document: This document applies to all aspects of the Contractor's scope of work, including all aspects conducted by sub-Contractors and all other agencies. There shall be no activity associated to the contract, which is exempted from the purview of this document.

1.3 Purpose of this document: The objective of these guidelines is to ensure that adequate precautions are taken to avoid accidents, occupational illness and harmful effects on the environment during construction.

2.0 SHE targets and goals

2.1 The SHE targets, goals and aim for the Works are to achieve:

- i) Zero total recordable injuries.
- ii) Zero reportable environmental incidents
- iii) All personnel inducted in accordance with the approved Contractor SHE plan
- iv) Total compliance of conducting inspections and audits as per approved SHE plan
- v) 100% incident recording and reporting
- vi) 100% adherence of usage of appropriate PPEs at work.
- vii) Executing construction work with least disturbance to the environment, adjoining road users and traffic

3.0 Compliance

3.1 Memorandum of Understanding (MOU): A MOU placed at **Annexure-2** shall be executed before the award of contract by the Contractor with regard to various provisions on Safety, Health and Environment to be practiced during the construction work.

3.2 Statutory requirements

3.2.1 Primary Statutory Regulations: Contractor shall develop thorough understanding about Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 (i.e. BOCWR), Central Rules 1998, Building and Other Construction Workers' Welfare Cess Act, 1996 and Central Rules, 1998 and Haryana Building and Other Construction Workers' Welfare Board Rules, not only to satisfy the Inspectors' perspective but the use of legislation as the strong tool for

effective SHE management at construction worksites. Contractor is strongly advised to practice the principle of voluntary compliance.

3.2.2 In addition, the construction works shall be undertaken in accordance with all applicable legislation and Indian statutory requirements listed below but not limiting to:

- a) Indian Electricity Act 2003 and Rules 1956
- b) National Building Code, 2005
- c) Factories Act, 1948
- d) Motor Vehicles Act as amended in 1994 and The Central Motor Vehicles Rules, 1989.
- e) Indian Road Congress Code IRC: SP: 55-2001 'Guidelines on Safety In Road Construction Zones.
- f) The Petroleum Act, 1934 and Rules 1976
- g) Gas Cylinder Rules, 2003
- h) Indian Explosives Act. 1884, along with the Explosives substance Act 1908 and the Explosives Rules 1983
- i) The (Indian) Boilers Act, 1923
- j) The Public Liability Insurance Act 1991 and Rules 1991
- k) Minimum Wages Act, 1948 and Rules 1950
- l) Contract Labour Act, 1970 and Rules 1971
- m) Child Labour (Prohibitions & Regulations) Act, 1986 and Rules 1950
- n) Environment Protection Act, 1986 and Rules 1986
- o) Air (Prevention and control of Pollution) Act, 1981
- p) Water (Prevention and Control of Pollution) Act, 1974
- q) The Noise Pollution (Regulation & Control) Rules, 2000
- r) Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989
- s) The Hazardous Waste (Management & Handling) Rules, 1989
- t) Hazardous Waste Management Rules 1989 (as amended in 1999)
- u) Workman Compensation Act, 1923 along with allied Rules
- v) Fly ash utilization notification, Sept 1999 as amended in August 2003

3.2.3 **International Standards, Guidelines & ISO Certifications:** The works should be undertaken in accordance with the applicable international guidelines, standards and specifications on SHE and every contract shall aim to achieve ISO certifications listed below during the currency of the contract:

- a) OHSAS 18001-1999: Occupational Health and Safety Management System.
- b) ISO 14001-2004: Environmental Management Systems

4.0 General instructions for personnel working at the site

4.1 The Contractor shall ensure that all personnel working at the site receive induction training explaining the nature of the work, the hazards that may be encountered during the site work and the particular hazards attached to their own function within the operation.

- 4.2 All personnel shall be issued a photo identity card of size 85mm x 55mm duly signed by the authorized representative of the Contractor before they are engaged for any work and the format of the photo identity card should be approved from HRIDC.
- 4.3 Contractor shall also issue a safety handbook to all the personnel in a language known to the workers, which provides information on safety, health and emergency procedures that all personnel working on the contract are required to know and the need to follow. Contractor shall ensure that this is distributed, and its content introduced to all personnel working at the site.

5.0 Safety Protocols

5.1 Housekeeping:

- 5.1.1 Contractor shall understand and accept the importance of housekeeping. The working environment shall be kept clear of all unnecessary waste, thereby providing a first line of defense against accidents and injuries.
- 5.1.2 General Housekeeping shall be carried out by the Contractor and ensured at all times at Work Site, Construction Depot, Batching Plant, Labour Camp, Stores, Offices and toilets/urinals.
- 5.1.3 The Contractor shall be responsible to provide segregated containers for disposal of debris at required places and regular cleaning of the same.
- 5.1.4 Full height fence, barriers, barricades etc. shall be erected around the site in order to prevent the surrounding area from excavated soil, rubbish etc., which may cause inconvenience to and endanger the public. The barricade especially those exposed to public shall be aesthetically maintained by regular cleaning and painting as directed by the HRIDC. These shall be maintained in one line and level.
- 5.1.5 All surplus earth and debris should be removed/disposed-off from the working areas to officially designated dumpsites
- 5.1.6 No parking of trucks/trolleys, cranes and trailers etc. shall be allowed on roads, which may obstruct the traffic movement.
- 5.1.7 Roads shall be kept clear and materials like pipes, steel, sand boulders, concrete, chips and brick etc. shall not be allowed on the roads to obstruct free movement of road traffic.
- 5.1.8 Proper and safe stacking of material are of paramount importance at yards, stores and such locations where material would be unloaded for future use. The storage area shall be well laid out with easy access and material stored / stacked in an orderly and safe manner.
- 5.1.9 Flammable chemicals / compressed gas cylinders shall be safely stored.
- 5.1.10 Empty cement bags and other packaging material shall be properly stacked and removed.

5.2 Working at Height:

- 5.2.1 The Contractor shall ensure that work at height is properly planned for any emergencies and rescue, appropriately supervised, and carried out in a manner, which is reasonably practicable safe.
- 5.2.2 The Contractor shall ensure that work at height is carried out only when the weather conditions do not jeopardize the health or safety of persons involved in the work.

- 5.2.3 The Contractor shall ensure that no person at work passes across or near, or working on, from or near, a fragile surface (i.e. surface, which would be able to fail if any reasonably foreseeable loading were to be applied to it) where it is reasonably practicable to carry out work safely and under appropriate ergonomic conditions without his doing so. Prominent warning notices should be placed near such surfaces.
- 5.2.4 The Contractor shall, where necessary to prevent injury to any person, take suitable and sufficient steps to prevent, so far as is reasonably practicable, the fall of any material or object.
- 5.2.5 Where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work falling a distance or being stuck by a falling object, which is liable to cause personal injury, the workplace shall be reasonably equipped with devices preventing unauthorized persons from entering such area.
- 5.2.6 Every workman shall use any work equipment or safety device provided to him for work at height by the Contractor
- 5.2.7 Requirements for collective safeguards for arresting falls:
- a) Collective safeguard are a safety net, airbag or other collective safeguard for arresting falls
 - b) A safeguard shall be suitable and of sufficient strength to arrest safely the fall of any person who is liable to fall.
 - c) Suitable and sufficient steps shall be taken to ensure, so far as practicable, that in the event of a fall by any person the safeguard does not itself cause injury to that person.
- 5.2.8 Requirement for Ladders:
- a) Every Contractor shall ensure that a ladder is used for work at height only if a risk assessment has demonstrated that the use of more suitable work equipment is not justified because of the low risk.
 - b) Only metal ladders shall be allowed. Bamboo ladders are prohibited

5.3 Overhead Protection: All Contractors shall provide overhead protections as per Rule 41 of BOCWR

5.4 Slipping, Tripping, Cutting, Drowning and Falling Hazards: As per Rule 42 of BOCWR

5.5 Lifting Appliances and Gear

- 5.5.1 Lifting appliances means a crane, hoist machinery, derrick, winch, gin pole, sheer legs, jack, hoist drum, slewing machinery, slewing bearing fasteners, lofting machinery sheaves, pulley blocks, hooks or other equipment used for lifting materials, objects or building workers and lifting gears means ropes, chain slings, shackles, hooks, lifting lugs, wire ropes, lifting eyebolts and eyenuts and other accessories of a lifting appliance.
- 5.5.2 No machine shall be selected to do any lifting on a specific job until its size and characteristics are considered properly against various parameters.
- 5.5.3 The Contractor shall ensure that a valid certificate of fitness is issued and available for all lifting appliances including synchronized mobile jacks, pre-stressing hydraulic jacks, jacks fitted with launching girders etc. and HRIDC's approval is taken before inducting any such appliance to the site.

5.5.4 Contractors shall ensure testing and periodical examination of lifting appliances and gears.

5.5.5 The Contractor shall ensure that the operator of lifting appliances is well qualified and trained

5.6 Launching Operation

5.6.1 As launching operation is one of the riskiest job, the Contractor shall take utmost precaution at all stages like planning, establishing casing yard, casting segments, transporting segments, fabrication and erection of launching girders, launching of segments, pre-stressing, auto launching of girders and dismantling of launching girders.

5.6.2 The Contractor shall prepare a comprehensive Method Statement for the launching operation, adhering to the SHE conditions laid down in conditions of contract on SHE. Particular reference shall be made to the provisions on working at height. As the entire process of launching has to be undertaken at an elevated level the safety of workers and the girder is paramount important. Necessary general guidelines shall be adhered to throughout the launching operation by the Contractor.

5.7 Construction machinery

5.7.1 Construction machineries may include dumpers and dump trucks, lift trucks and vibro hammers, rail welding equipment, mobile elevating work platforms, cranes, tipper lorries, lorry loaders, etc.

5.7.2 Every construction equipment shall be in sound mechanical working condition and certified by either competent person under Factories Act or manufacturers' warranty in case of brand new equipment or authorized persons/firms approved by HRIDC before induction at site.

5.7.3 All Vehicles shall be fitted with audible reverse alarms and maintained in good working condition. Reversing shall be done only when there is adequate rear view visibility or under the directions of a banksman.

5.8 Machine and general area guarding

5.8.1 The Contractor shall ensure at the construction site all motors, cogwheels, chains and friction gearing, flywheels, shafting, dangerous and moving parts of machinery are securely fenced or legged. The fencing of dangerous part of machinery is not removed while such machinery is in motion or in use.

5.9 Manual lifting and carrying of excessive weight

5.9.1 The Contractor shall ensure at the construction site that no building worker lifts by hand or carries overhead or over his back or shoulders any material, article, tool or appliances exceeding in weight as per Rule 38 of BOCWR (Max lifting weight for: Adult man = 55 kg and Adult woman = 30 kg), unless aided by another building worker or a device.

5.10 Lighting

5.10.1 The Contractor shall provide sufficient site lighting, of the right type and at the right place for it to be properly effective. Lighting ought not to introduce the risk of electric shock. Therefore, 230V supplies should be used for those fittings, which are robustly installed, and well out of reach e.g. flood lighting or high-pressure discharge lamps.

5.11 Hand Tools and Power Tools

- 5.11.1 The Contractor is wholly responsible for the safe condition of tools and equipment used by his employees and that of his sub-Contractors
- 5.11.2 Use of short / damaged hand tools shall be avoided, and the Contractor shall ensure all his hand tools used at his worksite are safe to work with or stored and shall also train his employees (including his sub-Contractors) for proper use thereby.
- 5.11.3 All hand tools and power tools shall be duly inspected before use for safe operation.

5.12 Dangerous and harmful environment

- 5.12.1 Exposure of building workers to dangerous and harmful environment shall be avoided unless suitable measures are taken and provided by the Contractor
- 5.12.2 Provisions of BOCWR Rule 40 shall be strictly followed by the Contractor in this regard

5.13 Fire prevention, protection and fighting system

- 5.13.1 The Contractor shall ensure that construction site is provided with fire extinguishing equipment sufficient to extinguish any probable fire at construction site. An adequate water supply is provided at ample pressure as per national standard.
- 5.13.2 Recharging of fire extinguishers and their proper maintenance should be ensured and as a minimum should meet Indian National Standards.
- 5.13.3 All drivers of vehicles, foreman, supervisors and managers shall be trained on operating the fire extinguishers and fire-fighting equipment.

5.14 Corrosive substances

- 5.14.1 As per BOCWR Rule 44, corrosive substances including alkalis and acids shall be stored and used by a person dealing with such substances at a building / construction site in a manner that it does not endanger the building worker and suitable PPE shall be provided by the Contractor to the worker during such handling and work. In case of spillage of such substances on building worker, the Contractor shall take immediate remedial measures.

5.15 Demolition works

- 5.15.1 The Contractor shall ensure that all demolition works be carried out in a controlled manner under the management of experienced and competent supervision.
- 5.15.2 No person other than building workers or other persons essential to the operation of demolition work shall be permitted to enter a zone of demolition and the area be provided with substantial barricades

5.16 Traffic management

- 5.16.1 The basic objective of such guidelines is to lay down procedures to be adopted by Contractor to ensure the safe and efficient movement of traffic and also to ensure the safety of workmen at construction sites.
- 5.16.2 All construction workers should be provided with high visibility jackets with reflective tapes and other necessary items

5.16.3 The Contractor shall make use of regulatory signs, warning signs, delineators (traffic cones, cylinder, drums, etc.) and barricades with sufficient visibility during the night hours also.

5.17 Personal Protective Equipment (PPEs)

5.17.1 The Contractor shall provide required PPEs to workmen to protect against safety and / or health hazards. Primarily PPEs are required for various protections such as Head Protection (Safety helmets), Foot Protection (Safety footwear, Gumboot, etc.), Body Protection (High visibility clothing (waistcoat/jacket), Apron, etc.), Personal fall protection (Full body harness, Rope-grip fall arrester, etc.), Eye Protection (Goggles, Welders glasses, etc.), Hand Protection (Gloves, Finger coats, etc.), Respiratory Protection. (Nose mask, SCBAs, etc.), and Hearing Protection (Ear plugs, Earmuffs, etc.).

5.17.2 The PPEs and safety appliances provided by the Contractor shall be of the standard as prescribed by Bureau of Indian Standards (BIS). If materials conforming to BIS standards are not available, the Contractor as approved by the HRIDC shall procure PPE and safety appliances.

5.17.3 All construction workers should be provided with high visibility jackets with reflective tapes confirming to the requirement specified under BS EN 471: 1994.

5.17.4 The Contractor shall at all time maintain a minimum of 10% spare PPEs and safety appliances and properly record and show to HRIDC during the inspections.

5.17.5 **Ensure Visitor's security:** It is always the duty of the Contractor to provide required PPEs for all visitors. Towards this required quantity of PPEs shall be kept always at the security post of the construction site.

5.18 Visitors to site

5.18.1 No visitor shall be allowed to enter the site without the permission of HRIDC. All the authorized visitors should report at the site office. Contractor shall provide visitor's helmet (White helmet with visitor sticker) and other PPEs like Safety Shoe, reflective jacket, respiratory protection etc. as per requirement at the site.

5.18.2 All Visitors shall always be accompanied by a responsible member of the site personnel.

5.18.3 The Contractor shall be fully responsible for all visitors' safety and health within the site.

6.0 Occupational Health and Welfare

6.1 Physical fitness of workmen

6.1.1 The contractor shall ensure that his employees/workmen subject themselves to such medical examination as required under the law or under the contract provision and keep a record of the same.

6.1.2 The contractor shall not permit any employee/workmen to enter the work area under the influence of alcohol or any drugs.

6.2 Medical facilities

6.2.1 **Medical Examination:** The contractor shall arrange a medical examination of all his employees including his sub-contractor employees employed as drivers, operators of

lifting appliances and transport equipment before employing, after illness or injury, if it appears that the illness or injury might have affected his fitness.

- 6.2.2 **Occupational Health Centre:** The Contractor shall ensure at a construction site an occupational health centre, mobile or static is provided and maintained in good order.
- 6.2.3 **Ambulance van and room:** The contractor shall ensure at a construction site of a building or other construction work that an ambulance van and room are provided at such construction site or an arrangement is made with a nearby hospital for providing such ambulance van for transportation of serious cases of accident or sickness of workers to hospital promptly and such ambulance van and room are maintained in good repair and is equipped with standard facilities.
- 6.2.4 **First-aid boxes:** The contractor shall ensure at a construction site one First-aid box for 100 workers provided and maintained for providing First-aid to the building workers. Every First-aid box is distinctly marked “First-aid” and is equipped with sufficient articles.
- 6.2.5 The Contractor shall compulsorily adopt necessary measures for HIV/AIDS prevention & control, prevention of mosquito breeding, and prevention of smoking/alcohol/drugs consumption at the site.
- 6.2.6 **Noise:** The Contractor shall consider noise as an environmental constraint in his design, planning and execution of the Works and provide demonstrable evidence of the same on Employer’s request. The Contractor shall, at his own expense, take all appropriate measures to ensure that work carried out by the Contractor and by his sub-Contractors, whether on or off the Site, will not cause any unnecessary or excessive noise which may disturb the occupants of any nearby dwellings, schools, hospitals, or premises with similar sensitivity to noise.
- 6.2.7 **Ventilation, illumination and radiation:** The Contractor shall take proper measures to:
- a) Ensure proper ventilation system is provided at site for various construction works
 - b) Sufficient illumination at the work site
 - c) The use of radioactive substances and radiating apparatus, if any used, shall comply with the Govt. regulatory requirements and all subsidiary legislation
- 6.2.8 **Welfare measures for workers:** The Contractor shall ensure that the following welfare measures for workers are provided for at the construction site:
- a) Sufficient latrine and urinal accommodation for workers
 - b) Canteen for workers as per provisions of Section 37 of BOCWA and Rule 244 of BOCWR
 - c) Effective arrangements to provide sufficient supply of wholesome drinking water with minimum quantity of 5 litres per workman per day (as per BOCWR). Quality of the drinking water shall conform to the requirements of national standards on Public Health.
 - d) A free of charge temporary living accommodation to all workers conforming to provisions of Section 34 of BOCWA. These accommodations shall have cooking place, bathing, washing and lavatory facilities.
- 6.3 **Guidelines to be followed with respect to COVID-19 situation and other similar epidemics:** The Contractor shall ensure that the latest guidelines issued by Ministry of Health and Family Welfare (MoHFW), local government and the district administration

are strictly followed at the construction works site. Following guidelines should be strictly adhered for safety of construction site workers:

- a) On day 0, before resuming the work on sites post lockdown period, mandatory medical check-up will be arranged for all workers.
- b) The workers coming from outside should observe home-quarantine for at least 14 days as per the guidelines issued by MoHFW.
- c) Only medically fit workers will be deployed at site and medical assistance will be arranged for unfit workers.
- d) A unique photo identity card with serial number will be issued to all the workers and their family members staying at site.
- e) All the essential items will be made available to them at site only. If necessary, they can go out wearing face masks, after informing the supervisor.
- f) No outside worker will be allowed to stay at site without following proper procedure and instructions.
- g) Start time on site will be staggered to avoid congestion at the entry gates.
- h) As in most cases, workers reside at the Sites, hence no travel arrangements are required for them.
- i) The workers staying outside (which are always nearby) should reach the site either by walking or by their individual mode of transport (bicycle, two-wheeler etc.).
- j) During attendance, training and other sessions, social distancing guidelines will be followed along with provision of no-touch attendance.
- k) All workers may be advised to take care of their own health and look out for respiratory symptoms/fever and, if feeling unwell, should leave the workplace immediately after informing their reporting officers.
- l) They should observe home-quarantine as per the guidelines issued by MoHFW and should immediately inform the nearest health centre or call 011-23978046.
- m) Workers should not shake hands when greeting others and while working on the site.
- n) Mandatorily wear face masks while working on site. While not wearing masks, cover your mouth and nose with tissues if you cough/sneeze or do so in the crook of your arm at your elbow.
- o) Avoid large gatherings or meetings. Maintain at least 1 metre (3 feet) distance from persons, especially with those having flu-like symptoms, during interaction.
- p) Not more than 2/4 persons (depending on size) should be allowed to travel in lifts or hoists.
- q) Use of the staircase for climbing should be encouraged.
- r) Workers should clean hands frequently by washing them with soap and water for at least 40 seconds.
- s) Workers should not share their belongings like food, water bottles, utensils, mobile phones etc. with others.
- t) The utensils should be washed properly post use at designated places.
- u) Post work, workers should change their clothes before leaving the site and clothing should not be shook out.
- v) Avoid touching your eyes, nose, or mouth with unwashed hands.

7.0 Environmental management

7.1 The Contractor shall ensure that sufficient environmental management checks and measures are in place and followed regularly. Some of these measures are listed in the sections below.

7.1.1 **Air quality** - Necessary precautions to minimize fugitive dust emissions, use of construction equipment designed and equipped to minimize or control air pollution, water down construction sites as required to suppress dust, etc.

7.1.2 **Water quality** - Comply with the Indian Government legislation and other State regulations in existence in Haryana in so far as they relate to water pollution control and monitoring.

7.1.3 **Accommodate archaeological and historical preservation concerns** that may arise due to the construction of the project and consult Archaeological Survey of India (ASI) and other parties, on the advice of HRIDC whenever required.

7.1.4 **Landscape and Greenery:** Maintain ecological balance by preventing deforestation and defacing of natural landscape

7.1.5 **Falling of trees:** The contractor shall identify the number and type of trees that are required to be felled as a result of construction of works and facilities related to the project and inform HRIDC.

7.1.6 **Waste:** The Contractor is required to develop, institute and maintain a Waste Management Programme (WMP) during the construction of the project for his works covering identification of disposal sites, quantities to be excavated/ disposed-off, split between waste & inert material, amounts intended to be stored temporarily on site location of such storage, and obtaining permission, wherever required, for disposal. Further, the Contractor shall handle waste in a manner that ensures they are held securely without loss or leakage thus minimizing potential for pollution. Also, he shall maintain and clean waste storage areas regularly. The provision of Construction and Demolition Waste Management Rule 2016 issued by Ministry of Environment Forest and Climate Change dated 29.03.2016 and published in the Gazette of India, Part – II, Section -3, Sub-section (ii) are binding upon the Contractor. Contractor shall implement these provisions at worksites, for which no extra payment will be payable.

7.1.7 **Hazardous waste management:** If encountered or generated as a result of Contractor's activity, then waste classified as hazardous under the "Hazardous Wastes (Management & Handling) Rules, 1989, amendments 2000, 2003" shall be disposed-off in a manner in compliance with the procedure given in the rules under the aforesaid act.

7.1.8 **Energy management:** The Contractor shall use and maintain equipment so as to conserve energy and shall be able to produce demonstrable evidence of the same upon HRIDC's request. Measures to conserve energy include but not limited to the following:

- a) Use of energy efficient motors and pumps
- b) Use of energy efficient lighting, which uses energy efficient luminaries

- c) Adequate and uniform illumination level at construction sites suitable for the task
- d) Proper size and length of cables and wires to match the rating of equipment
- e) Use of energy efficient air conditioners

Additional important safety guidelines for the Contractor

The Contractor shall be required to diligently follow the guidelines and instructions mentioned in the Clauses 8, 9 and 10 below.

8.0 Compendium of instructions on safety at work sites

Contractor shall also follow the following instructions on safety at work sites:

1.0	The Contractor(s) shall not allow any road vehicle belonging to him or his suppliers, etc. to ply in railway/HRIDC land next to the running line. If for execution of certain works viz. earthwork for parallel railway line and supply of ballast for new or existing rail line, gauge conversion, etc. road vehicles are necessary to be used in railway/HRIDC land next to the railway line, the Contractor(s) shall apply to the Engineer-in-Charge for permission giving the type and number of individual vehicles, names and license particulars of the drivers, location, duration and timings for such work/movement. The Engineer-in-Charge or his authorized representative will personally counsel, examine and certify the road vehicle drivers, Contractor(s)' flagmen and supervisors and will give written permission giving names of road vehicle drivers, Contractor(s)' flagmen and supervisors to be deployed on the work, location, period and timing of the work. This permission will be subject to be following obligatory conditions:
1.1	The road vehicles will ply only between sunrise and sunset.
1.2	Nominated vehicles & drivers will be utilized for the work in the presence of at least one flagman and one supervisor certified for such work.
1.3	The vehicles shall ply 6m clear of track. Any movement/work at less than 6m and up to minimum 3.5m clear of track centre shall be done only in the presence of a HRIDC employee authorized by the Engineer-in-Charge. No part of the road vehicle will be allowed at less than 3.5m from track centre. Cost of such HRIDC employee shall be borne by the HRIDC.
1.4	The Contractor(s) shall remain fully responsible for ensuring safety and in case of any accident, shall bear cost of all damages to his equipment, men and also damages to Indian Railway and its passengers.
2.0	Engineer-in-Charge may impose any other condition necessary for a particular work or site. (Ref. Railway Board's letter No. 98/CE-I/CT/15 dated 13.08.98, Annexure-VIII)
2.1	Assistant Officer/Sr. Scale Officer shall be the overall in-Charge for the safety at the site of work. It will be personal responsibility of the Inspectors (both in- Charge and supervisory) to ensure safety.

2.2	Contractor(s) shall provide 150mm thick white line with lime at a distance of 3.5m from the centre of existing track. This white line shall be in the entire length where work is going on and/or the vehicles/machineries are plying along the track. Nothing extra shall be paid for this.
2.3	Barricading with the help of portable fencing shall be provided in the length where the day's work is to be done in close vicinity of the track. The fencing shall consist of self-supporting steel column connected with at least 20mm thick red nylon rope. The columns shall be of 1.2m height. This will be placed at a distance of 3.5m, from centre line of the nearest track. This shall be paid.
2.4	Assistant Officer/Sr. Scale Officer shall issue Competency Certificate after checking license and their working to all drivers of nominated vehicle/machinery. Inspector at site shall ensure that the driver who does not possess Competency Certificate will not work at site.
2.5	The area between running line and white line shall not be permitted to become slushy and adequate drainage must be ensured at all times.
2.6	Machine/vehicles shall ply 6m clear of track and movement/work at less than 6m and upto 3.5m clear of track centre, shall be done in the presence of HRIDC employee authorized by Engineer-in-Charge. The HRIDC employee so deputed shall ensure safety of the track, with banner flags, hand signal lamps and detonators.
2.7	If vehicle/machinery/materials are to come within 3.5m of the existing track, work must be done under the presence of a HRIDC Inspector authorized to do safety works. A caution order shall be issued, and track will be protected with the banner flags, hand signal lamps and detonators.
2.8	Normally, night working shall be avoided. However, in certain areas like Delhi, the night working is unavoidable. The night working shall be permitted by DGM/HRIDC in writing. One Inspector shall be specifically deputed to supervise the night working. The site/area where night working is to be done shall be adequately lit. Nothing extra shall be paid for this. (Ref. CAO/C's letter No. 62-W/0/T/3/0/W.Spl/Gen. dated 22.05.2000, Annexure-V)
3.0	An authorized OHE staff should invariably be present, when relaying work or any major work on track is carried out in order to ensure the following points:
3.1	Power Block is correctly taken and "Permit to Work" (PTW) is issued
3.2	The structure bonds, track bonds, cross bonds, longitudinal rail bonds, etc. are not disturbed and if disconnected for the work, they are reconnected properly when the work is completed.
3.3	The return feeder connections to the rails at the feeding posts are proper and not disturbed.
3.4	The setting distance of the structures is not disturbed/ affected during the slewing.
3.5	The track level is not raised beyond the permissible limits during the work.

3.6	Excavation or digging near a mast foundation is done in such a manner that the foundation is not exposed.
3.7	The clearance particularly at over line structure is maintained to the required standards.
3.8	Precautions for the safety of staff working under the OHE are taken correctly.
3.9	The Engineering Officials-in-Charge of such major works shall ensure that intimation to their counterpart for OHE maintenance work is given with adequate notice. (Ref. Para 20714 of AC Traction Manual, Vol.-II, Part.)
3.10	All staff should be warned that contact within 2 metres (unless protected by the screen) to live portion of 25 KV traction OHE is dangerous and shall be strictly avoided. (Ref. G.R. 17.04 and S.R. 17.04 (I/a).
3.11	No work on overhead lines or in the zone within two metres of any live equipment shall be carried out unless a regular "Permit to Work" is obtained from the authorized traction staff and line is made dead and earthed. (Ref. G.R. 17.04 and their S.R.A.C.T.M. Chapter-X).
3.12	Before any overhead equipment bonding is disturbed, provisions of G.R. 17.05 and their SRs shall be complied with.
4.0	During the execution of works, unless otherwise specified the Contractor(s) shall at his own cost provide materials for and execute all shoring, timbering and strutting works as is necessary for the stability and safety of all structures, excavation and works and shall ensure that no damage, injury or loss is caused or likely to be caused to any person or property. (Ref. Clause 34.1 of Indian Railways Standard General Conditions of Contract, April 2022)
5.0	Existing roads or water courses shall not be blocked, cut through, altered, diverted or obstructed in any way by the Contractor(s), except with the permission of the Engineer-in-charge. All compensation claimed for any unauthorized closure, cutting through, alteration, diversion or obstruction to such roads or water courses by the Contractor(s) or his agent or his staff shall be recoverable from the Contractor(s) by deduction from any sums which may become due to him in terms of the contract or otherwise according to law. (Ref. Clause 34.2 of Indian Railways Standard General Conditions of Contract, April 2022)
6.0	During progress of work in any street or thorough fare, the Contractor(s) shall make adequate provision for the passage of traffic, for securing safe access to all premises approached from such street or thorough fare and for any drainage, water supply or means of lighting which may be interrupted by reason of the execution of the works and shall erect and maintain at his own cost barriers, lights and other safeguards as prescribed by the Engineer-in-charge for the regulation of the traffic, and provide watchmen necessary to prevent accidents. The work shall in such cases be executed night and day if so ordered by the Engineer-in-charge and with such vigour so that

	the traffic way is impeded for as short a time as possible. (Ref. Clause 34.3 of Indian Railways Standard General Conditions of Contract, April 2022)
7.0	The Contractor(s) shall be responsible to take all precautions to ensure the safety of the public whether on public or railway or HRIDC property and shall post such lookout men as may in the opinion of the Engineer-in-charge be required to comply with the regulations appertaining to the work. (Ref. Clause 34.4 of Indian Railways Standard General Conditions of Contract, April 2022)
8.0	The Contractor(s) shall be responsible for the safety of all employees directly or through petty Contractor(s) or sub-Contractor employed by him on the works and shall report serious accidents to any of them, however, and wherever occurring on the work to the Engineer or the Engineer's Representative and shall make every arrangement to tender all possible assistance. (Ref. Clause 56 of Indian Railways Standard General Conditions of Contract, April 2022)
9.0	The Contractor(s) shall be responsible for all risk to the works and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of HRIDC or the Railway or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by HRIDC and this although all reasonable and proper precautions may have been taken by the Contractor(s), and in case the HRIDC shall be called upon to make good the costs, loss or damages, or to pay any compensation, including that payable under the provisions of the Workmen's Compensation Act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid by reason of any act, or any negligence or omissions on the part of the Contractor(s), the amount of any costs or charges including costs and charges in connection with legal proceedings which the HRIDC may incur in reference thereto, shall be charged to the Contractor(s). HRIDC shall have the power and right to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the contractor(s), to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to Contractor(s) as aforesaid, any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the Contractor(s). (Ref. Clause 24 of Indian Railways Standard General Conditions of Contract, April 2022)
10.0	Vulnerable locations where construction work adjacent to running line can cause accident should be protected by suitable strong barrier which should be included as a paid item in contract schedule. These locations should be decided by Executive Engineer-in-Charge of the work at the beginning of construction and intimated to Contractor(s) in writing. The barrier should be painted with retro reflective paint at suitable intervals to give warning at night. (Ref. Railway Board's letter No. 99/WI/S/Accident –Mangla Express dated 23.08.1999, Annexure-VII)

11.0	<p>No work adjacent to running track should be carried out at night without express written authority from the Executive Engineer-in-Charge of the work. In fact, no Contractor(s) should do any kind of night working unless the Executive Engineer-in-Charge of the work gives the specified spots according to priority of work where night working has to be done. These spots should be well lit at night. In addition, the work should always be done under supervision of HRIDC supervisors in addition to Contractor(s)' supervisors. Suitable HRIDC personnel should be posted at site with safety equipment like banner flags, hand signal flags, hand signal lamps and detonators to arrange protection of trains. The HRIDC's Supervisor-in-Charge of such work should also give suitable message to adjacent stations as well as through control for issuing caution orders to the trains approaching the work site. For this purpose, he should be equipped with field telephone/walkie-talkie set.</p> <p>(Ref. Railway Board's letter No. 99/WI/S/Accident – Mangla Express dated 23.08.1999, Annexure-VII)</p>
12.0	<p>The training to the operators and supervisors of the work executing agencies in safe working along and on the track should be provided by HRIDC. The training could be imparted to such supervisors at Zonal/Divisional training schools or even by existing Officers and staff of the Construction Organization itself. The intention is to ensure that the supervisors of the work executing agencies get acquainted with the safety practices that are required to be taken while executing all those works which have bearing on the safety of the running tracks. The cost of training shall, however, be borne by the Contractor(s).</p> <p>(Ref. Railway Board's letter Nos. 99/CE-II/PRA/32(CRS) dated 05.07.2000, Annexure-IV & 99/CE-II/PRA/32 dated 20.04.2000, Annexure-VI)</p>
13.1	<p>Drivers of train must be served with caution orders to look on for any obstructions at the place of work</p>
13.2	<p>Arrangements should be made to protect the track in case of emergency at work sites</p>
13.3	<p>The area of work should be demarcated by providing barricades and sign board which will enable the workmen posted at site and also the lorry drivers to have clear guidelines for movement of vehicles.</p>
13.4	<p>Movement of lorries near the track should be prohibited during night. In case it is un-avoidable, adequate protective measures including lighting must be ensured.</p>
13.5	<p>Work should not be allowed to progress without the prior approval of the Engineer-in-Charge in case movement of vehicles close to the track is involved.</p>
13.6	<p>Machines and vehicles should ply 6 metres clear of track. In case movement at less than 6 metres away from track is inescapable, it should be permitted in the presence of HRIDC employee authorized by the Engineer-in-Charge.</p>
13.7	<p>Contractor(s)' representative should be issued a certificate by DGM/HRIDC to the effect that they have acquired sufficient knowledge about the safety precautions that are needed to be followed while working near the track.</p>

	(Ref. Railway Board's letter No. 99/CE-II/PRA/32(CRS) dated 21.07.2000, Annexure-III)
14.1	All permissible or sanctioned infringements should be consolidated for each Division traffic section wise. The consolidated list should be in possession of DRM, ADRM, Sr. DSO or DSO, Construction Officers-in-Charge of Division and relevant extracts with each Divisional and other Officers. These should be checked once a year at Assistant Officer's level and it should be ensured that there is no aggravation of any permitted infringement.
14.2	All works planned for execution close to the running lines and fixed structures, on bridges, inside tunnels, cuttings, constructed areas, etc. should be carried out only after preparation of detailed plans for the same, getting clearances from the Engineering Department of the Open Line and approval of Competent Authority to ensure that the execution of the works will not in any way infringe the prescribed Schedule of Dimensions or aggravate existing permissible infringements.
14.3	Special training and counselling should be imparted to all field staff engaged in maintenance of railway/HRIDC assets regarding the safety at work sites and all of them should be in possessions of a compendium.
14.4	Similar training should also be organized for HRIDC's Associates and Contractors working in close proximity of the running track and specific Para to this effect should also be included in all future contracts requiring execution of work in the near vicinity of running lines.
14.5	All the work inside a tunnel, deep cuttings, on bridges, constructed areas, etc. should be carried out in accordance with the provisions in Chapter-VIII of IRPWM and Para- 1009 of Bridge Manual-1998 and preferably under block protection. (Ref. Railway Board's letter No. 2000/CE-II/PRA/12 dated 16.05.2002, Annexure-II)
15.0	Wherever it is difficult to ply the trucks on road during day light hours for bringing building materials such as chips, sand, supply of ballast and bringing out earth in case of suburban sections, the additional staff should be posted during night working duly properly lighted to ensure safety of the running tracks. In order to ensure that no short cuts or unsafe practices are adopted at construction site, Sr. Officials should inspect the safety aspect in detail during their inspection and guide the staff in adopting safe practices. They should record corrective action to be taken in site order books/ inspection books and their compliance followed up. In addition, periodic drives should be carried out to ensure safety at construction sites. In order to ensure safety, provision of mobile phones based on the needs of the individual work sites and keeping the provision in the estimate may be provided. (Ref. Railway Board's letter No. 2001/CE-II/PRA/10 (CRS) dated 16.05.2002, Annexure-I)

9.0 Safety precautions and measures to be observed during execution of ROB/ RUB/ Viaduct/ any other works in Railway and adjoining areas:

9.1 The Contractor(s) shall not allow any road vehicle belonging to him or his suppliers, etc. to ply in HRIDC/railway land next to the running line. If for execution of certain works viz. earthwork for parallel railway line and supply of ballast for new or existing rail line gauge conversion, etc. road vehicles are necessary to be used in railway/HRIDC land next to the railway line, the Contractor(s) shall apply to the Engineer-in-Charge for permission giving the type and number of individual vehicles, names and license particulars of the drivers, location, duration and timings for such work/movement. The Engineer-in-Charge or his authorized representative will personally counsel, examine and certify the road vehicle drivers, Contractor(s)' flagmen and supervisors and will give written permission giving names of road vehicle drivers, Contractor(s)' flagmen and supervisors to be deployed on the work, location, period and timing of the work. This permission will be subject to be following obligatory conditions:

9.2 Construction Activities and Safety:

- (a) The 'Methodology of Working' shall be incorporated in GAD and Temporary Arrangement Drawings.
- (b) The activities of work to be taken up during the railway traffic block/under speed restriction, etc. should be clearly mentioned in such drawings. If at any stage of execution, any discrepancy is found in the drawing with respect to the site condition affecting safety or some new activity of work is required to be done, the same should be brought to the notice of Railway & HRIDC Engineers and such works should be done only after approval by Railways & HRIDC. In such cases, scheme may be modified and, if required, fresh CRS sanction shall have to be obtained.

9.2.1 The works required to be done under traffic block protection, are to be carried out only in the presence of Railway & HRIDC Engineering Officials. The Railway's and HRIDC's Supervisor has to certify safe conditions for passage of trains before resumption of traffic. The works to be done under traffic shall be carried out under the provision of banner flag and protection by Engineering Flagman. If considered necessary, the Railway/HRIDC Flagman may be posted on account of the Contractor(s).

9.2.2 Following important activities of works shall be carried out under supervision of Railway/HRIDC Engineer or his nominated Supervisor:

- (a) Excavation at foundation/ground level near to railway track
- (b) Concrete casting and/or masonry work very close to railway track
- (c) Erection of temporary structures near to running lines.
- (e) Casting of structures like girder/slab over railway track
- (e) Stage-prestressing of girders when placed across railway tracks properly supported
- (f) Launching of precast/pre-assembled girders across railway tracks
- (g) Any work of lifting, side shifting and slewing of girders over the railway track
- (h) Dismantling of temporary structures, shuttering, scaffolding, etc. adjacent to and above the railway track. For carrying out activities of casting, erection, launching, handling and dismantling as listed above, the Contractor's Engineer shall furnish the

Construction Programme in advance to HRIDC Supervising Engineer. No such work should be taken up in absence of the HRIDC Supervising Engineer. For the activities which are to be done in presence of the HRIDC Engineer, prior intimation shall be given in writing and acknowledgement obtained from HRIDC's representative. Such activities of work shall not be carried without the presence of HRIDC Site Engineer.

9.2.3 To ensure 'Safety' during construction activities, HRIDC Site Engineer may direct the Contractor's Supervisor/Engineer or their nominated representative for safe working procedures/ instructions, notwithstanding the contractual or MOU conditions prevailing between/ among Railways/other Departments like NHAI/Contractors/ Concessionaire.

9.2.4 All the records of Quality Assurance/Quality Control, testing of the materials and satisfactory completion of an activity shall be maintained at site by the Contractor's Engineer and Supervisor. On the basis of these records, HRIDC Site Engineer shall do stage-wise clearance of the works at following stages:

- (i) Completion of foundation
- (ii) Completion of substructure
- (iii) Completion of superstructure

Without such stage clearance, the work in next stage of construction shall not be allowed by the HRIDC Supervisor, unless proper system of check and exercise is followed at the site.

9.2.5 Normally, the high beam PSC girders are designed with wider top flange and shorter bottom flange with very high beam which makes the girder unsuitable during lowering, slewing and launching time.

9.2.6 During launching of girders and subsequent adjustments for placement of bearing, special attention and precautions are required at site to be followed rigorously without resorting to shortcut practice or leaving the work at site to untrained or inexperienced Engineers. Normally, end diaphragms are not cast for the extreme both side girders. These shall be cast minimum 300mm on both sides for all 'I' beam girders to provide temporary supports for ensuring stability.

"OR"

For side adjustments and bearing placements below 'I' section girders, end brackets made of steel angles should be provided for all 'I' beams sequentially to avoid side titling of individual girders. End brackets shall be removed only after placing girders on bearing and casting of diaphragms.

9.2.7 During lowering, the jacks shall be operated duly keeping wooden packing of various thicknesses fixing the amount of lowering to the barest minimum, so that even if the jack fails, the wooden packing will take load and further stability of girder is not endangered.

9.2.8 Temporary crib support staging shall be interlaced with clamps and angles. Adequate base width shall be maintained proportionate to the height of stage, which is very essential for avoiding the oblong effect during launching of girders. During launching by RH girder method, the movement of the PSC girders shall be controlled both from front and rear with sync mechanism having simultaneous operation, so that the speed of the launching

is always under the control. Spare hydraulic jacks shall always be kept at site. Lowering of girder shall always be carried out at one end only. Further, other end should be adequately secured by wire ropes, end brackets, etc. Thereafter, the process shall be continued alternately.

9.2.9 As far as possible, launching of girders by temporary staging shall be avoided and launching by heavy capacity cranes, wherever feasible, shall be adopted.

9.2.10 Steel girder launcher if used for launching of PSC girders should be pre-tested for the critical loading (likely to be encountered during actual launching) before deployment on the approaches regarding its strength as well as amount of permissible deflection using actual test PSC girder as a testing load. Connections at supports shall be inspected and certified prior to actual launching. It shall be adequately secured to the base support system on the pier cap.

9.3 General Construction Safety:

9.3.1 General safety precautions as applicable for bridge/civil works shall be adopted in field.

9.3.2 Working near running line: Safe practices at site and at all times non-infringement to moving trains shall be ensured. Road vehicles, material trolleys, dollies with any tendency to roll off towards the running lines to be checked by providing chains, locking arrangements, blocks, etc. shall be ensured and the Site-in-Charge of the Contractor shall be primarily responsible, secondary responsibility being of Contractor's Consultant.

9.3.3 Testing of cranes, lifting jacks and other equipment: All equipment like cranes, lifting jacks shall be tested, duly calibrated and certified prior to the use at construction site.

9.3.4 Construction workers at site shall be provided with personal safety gear like reflective vest, helmet, leather shoes, gloves & eyewear approved as per construction industry standards. For persons working at pier top/girder level, temporary supports, hand railing, protection with help of ropes, slings and temporary railings shall be provided.

9.3.5 Routine safety checks, validity of test certificates for load bearing equipment especially for cranes outsourced from third party shall be ensured prior to deployment.

10.0 Safety Guidelines and Precautions for working close to Railway tracks

10.1 A large number of men and machinery are deployed by the contractors for track renewals, gauge conversions, doublings, bridge rebuilding etc. It is therefore essential that adequate safety measures are taken for safety of the trains as well as the work force. The following measures should invariably be adopted.

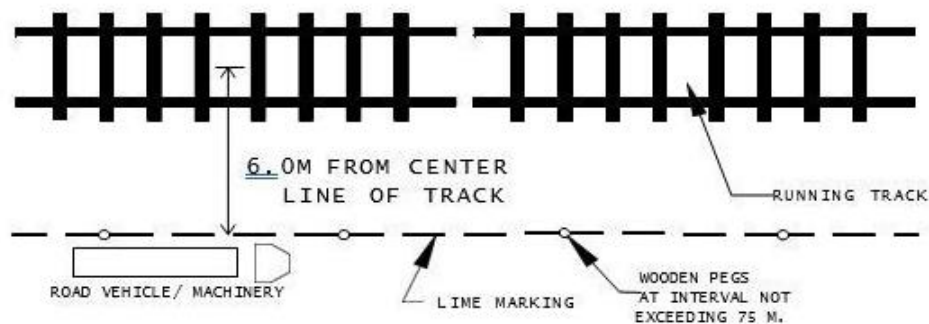
- A. The contractor shall not start any work without the presence of HRIDC supervisor at site.
- B. Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work shall be so carried out that there is no infringement to the

Railway's schedule of dimensions. For this purpose, the area where road vehicles and/or machinery are required to ply, shall be demarcated and acknowledged by the contractor. Special care shall be taken for turning/ reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions.

- C. The look out and whistle caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable flagmen/detonators shall be provided where necessary for protection of trains.
- D. The supervisor/workmen should be counseled about safety measures. A competency certificate to the contractor's supervisor as per Performa annexed shall be issued by DGM/HRIDC, which will be valid only for the work for which it has been issued.
- E. The unloaded ballast/rails/sleepers/other P-Way materials after unloading along track should be kept clear off moving dimensions and stacked as per the specified heights and distance from the running track.
- F. Supplementary site-specific instructions, wherever considered necessary shall be issued by the HRIDC's Engineer-in-charge.

10.2 PLYING OF ROAD VEHICLES AND WORKING OF MACHINERIES CLOSE TO RUNNING TRACKS

- A. Normally, the road vehicles shall be run, or machinery shall be worked so as not to come closer than 6.0m from centre line of nearest running track.
- B. The land strip adjacent to running tracks, where road vehicle is to ply or machinery is to work, shall be demarcated by line in advance in consultation with the Railway's & HRIDC's Supervisor. Wooden pegs at interval not exceeding 75mtr. shall be provided along the line marking as permanent marks. The road vehicles shall ply or machinery shall work so as not to infringe the line of demarcation.



- C. **If a road vehicle or machinery is to work closer to 6.0m due to site conditions or requirement of work, following precautions shall be observed:**
 - a) In no case the road vehicle shall run or machinery shall work at distance less than 3.5m from centre line of track.
 - b) Demarcation of land shall be done by bright colored ribbon/nylon cord suspended on 120 cm high wooden/bamboo posts at distance of 3.5 m from centre line of nearest running track.
 - c) Presence of an authorized HRIDC's representative shall be ensured before plying of vehicle or working of machinery.

- d) Railway's Supervisor shall issue suitable caution order to Drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train. Whistle boards shall be provided wherever considered necessary.
- e) Lookout men shall be posted along the track at a distance of 800m from such locations who will carry red flag and whistles to warn the road vehicle/machinery users about the approaching trains.
- f) On curves where visibility is poor, additional lookout men shall be posted

D. If vehicle/machinery is to be worked closer to 3.5m from running track - Under unavoidable conditions, if road vehicles is to ply or machinery is to work closer to 3.5m due to site conditions or requirement of work, following precautions shall be observed:

- a) Plying of vehicles or working of machinery closer to 3.5m of running track shall be done only under protection of track. Traffic block shall be imposed wherever considered necessary. The site shall be protected as per provisions of Para No. 806 & 807 of P-Way Manual as case may be.
- b) Presence of a Railway's & HRIDC's Supervisor shall be ensured at worksite.
- c) Railway's & HRIDC's Supervisor shall issue suitable caution order to Drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train.

E. Precaution to be taken while reversing road vehicle alongside the track

The location where vehicle will take a turn shall be demarcated duly approved by Railway's/HRIDC's representative. The road vehicle driver shall always face the Railway track during the course of turning/reversing his vehicle. Presence of an authorized Railway/HRIDC representative shall be ensured at such location.

F. Road vehicle shall not be allowed to run along the track during night hours generally. In unavoidable situations, however, vehicles shall be allowed to work during night hours only in the presence of an authorized Railway's/HRIDC's representative and where adequate lighting arrangements are made and where adequate precautions as mentioned earlier have been ensured.

G. Road vehicles/machinery/plant etc. when stabled near running tracks shall be properly secured against any possible roll off and always be manned even during off hours.

10.3 EXECUTION OF WORKS CLOSE TO OR ON RUNNING LINES

A. Any work close to or on running tracks shall be executed under the presence of a HRIDC's Supervisor only.

B. Precaution to be taken to ensure safety of trains while execution of work close to the running line or on running lines.

- a) Such works shall be planned and necessary drawings particularly with regard to infringement to moving dimensions shall be finalized duly approved by competent

authority before execution of work. The work shall be executed only as per approved procedure and drawings.

- b) All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimension do not infringe.
- c) Suitable speed restriction shall be imposed, or Traffic block shall be ensured as required.
- d) The site shall be protected as per provisions of Para No. 806 & 807 of Indian Railway P-Way Manual as case may be.
- e) Necessary equipment for safety of trains during emergency shall be kept ready at site.

C. Precaution to be taken to ensure safety of electrical/signal/ telephone cables while excavating near tracks.

- a) Particular care shall be taken to mark the locations of buried electrical/signal/telephone cables on the plans jointly with S & T/Electric supervisor and also at site so that these are not damaged during excavation.
- b) Copy of the cable plan should be given to the contractor's authorized representative before handing over the site to start the work.
- c) Due care shall be taken to ensure that any part of the equipment or machinery or temporary arrangement does not come close to cables while working.
- d) Joint procedure order No. 17/2013 as mentioned in the compendium of instructions on safety at work site dated 31.03.2014 issued by PCE Office shall be followed for undertaking digging work in the vicinity of underground signaling, electrical and telecommunication cables.

D. Precaution to be taken during execution of works requiring traffic blocks.

- a) Any work, which infringes the moving dimensions, shall be started only after the traffic block has been imposed.
- b) Before closing the work, the track shall be left with the proper track geometry so that the trains run safely.
- c) After completion of work the released sleeper and fittings should be properly stacked away from the track to be kept clear of moving dimensions.
- d) Block shall be removed only when all the temporary arrangement, machineries, tools, plants etc. have been kept clear of moving dimensions.

E. Precaution to be taken during execution of works during night:

The work close to running line, generally, shall be carried out only during day hours. At locations, however, where night working is unavoidable, proper lighting arrangement should be made. The engineering indicator boards shall be lighted during night hours as per the provisions of IRPWM. The staff deputed for night working should have taken adequate rest before deploying them in night shift. We can specify duration of night shift from 20.00 hrs to 04.00 hrs. All other safety precautions applicable for daytime work should be strictly observed during night working.

F. Precautions to be taken to ensure safety of workers while working close to running lines:

- a) Necessary lookout men with red flags and whistles shall be provided to warn the workmen about the approaching train.
- b) Railway's/HRIDC's supervisor shall issue suitable caution order to Drivers of approaching train for whistling to warn the workers about the approaching train. Whistle boards shall be provided wherever considered necessary.
- c) A "First aid kit" shall always be kept ready at site

G. Precaution shall be taken for safety of public or passengers, while executing works at locations, used by passengers and public

The worksite shall be suitably demarcated to keep public and passengers away from work area. Necessary signage boards such as "Work in progress. Inconvenience is regretted" etc. shall be provided at appropriate locations to warn the public/ passengers. Adequate lighting arrangement of worksite wherever required shall be done to ensure safety of public/passengers during night.

H. Precaution to be taken before stacking materials alongside the track to ensure that safety of trains is not affected - The following precautions shall be taken before stacking the materials along the track for stacking of ballast, rails, sleepers etc.

- a) The sites for material stacking should be selected in advance in such a manner as to ensure that no part of the material to be stacked is infringing the Standard Moving Dimensions. A plan of proposed stacking locations be made and signed jointly by an authorized HRIDC's/Railway's representative and contractor's representative.
- b) The selected locations shall be marked by lime in advance.
- c) Presence of an authorized HRIDC's/Railway's representative while unloading and stacking shall be ensured.
- d) The material shall be stacked in such a height so as to not to infringe SOD in case of accidental roll off.

I. Precaution for handling of departmental material trains - Instructions for working of material trains are contained in Chapter XII of IRPWM which should be brought to the notice of the supervisors and other staff working on the material trains. In addition to this, following precautions should be taken:

- a) Issue of 'fit to run' certificate:
As per Para 1207 before a material train is allowed to work, the complete rake should be examined by the Carriage and Wagon staff and a 'fit to run' certificate issued to the Guard.
- b) As per Para 1208 of IRPWM, a qualified Engineering official should be deputed on the train to ensure working of the material train as the Guard is not qualified to carry out such duties like Supervising of loading and unloading of materials.
- c) As per Para 1204 of IRPWM, the material train should not be permitted to work during the period of poor visibility due to fog, storm or any other cause except with the permission of the ADEN/DEN or Engineer-In-charge/HRIDC. Working of the material trains carrying labour should not be permitted between sunset and sunrise except in an emergency.

- d) While unloading rail panels by the side of the running track, placement of the panels, clear of the maximum moving dimensions should be ensured.
- e) Unloading of rail panels should be done by a team of trained staff under the active supervision of competent Supervisor/Officer.
- f) Before unloading of rail panels, site should be prepared by way of leveling/removing extra ballast, if any, from the crib and shoulder with the objective to ensure requisite lateral and vertical clearances so as to prevent slippage of rail panels due to vibration during the passage of trains.
- g) Reasonably adequate block should be asked and provided for unloading of the material and the work should be done preferably in day light to avoid shortcut in haste which may infringe the safety requirements.

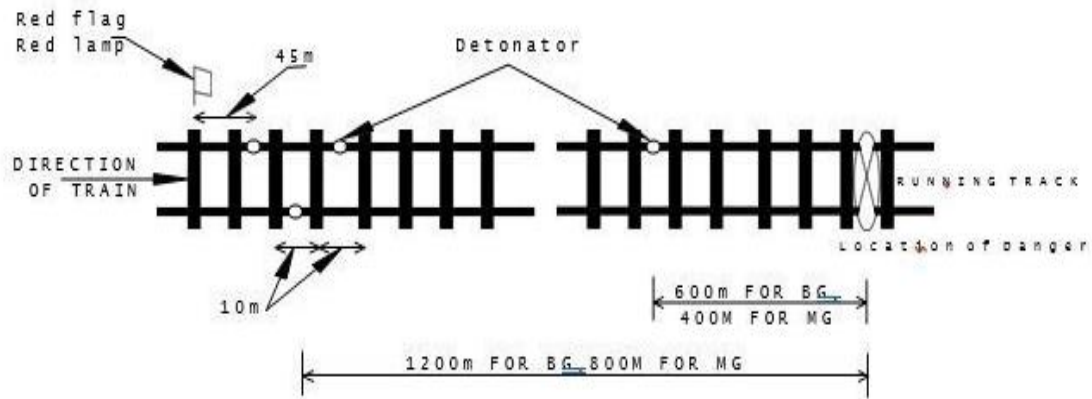
J. Safety aspects to be observed while working in OHE area

- a) No electrical work close to running track shall be carried out without permission of HRIDC representative.
- b) A minimum distance of 2m has to be maintained between live OHE wire and body part of worker or tools or metallic supports etc.
- c) No electric connection etc. can be tapped from OHE.
- d) Authorized OHE staff should invariably be present when the relaying work or any major work is carried out.
- e) Power block is correctly taken and 'permit to work' is issued.
- f) The structure bonds, track bonds, cross bonds, longitudinal rail bonds are not disturbed and if disconnected for the work, they are reconnected properly when the work is completed.
- g) The track level is not raised beyond the permissible limit during the work

10.4 PROTECTION OF TRACK DURING EMERGENCY

A. Action to be taken when a contractor's supervisor or vehicle operator apprehends any unusual circumstances likely to infringe the track and endanger safe running of trains.

- a) At any time if a contractor's supervisor or vehicle operator observes any unusual circumstances likely to infringe the track and apprehend danger to safe running of track, he shall take immediate steps to advise a HRIDC official of such danger and assist him in protection of track.
- b) The track shall be protected as under. One person shall immediately plant a red flag (red lamp during night) at the spot and proceed with all haste in the direction of approaching train with a red flag in hand (red lamp during night) and plant a detonator on rail at a distance of 600m from the place of obstruction of BG track (400m for MG track) after which he shall further proceed for not less than 1200m from the place of obstruction from BG track (800m for MG track) and plant three detonators at 10m apart on rails. After this he shall display the red flag (red lamp during night) at a distance of 45m from the detonators.
- c) Attempts shall also be made to send an advice to nearest Railway/HRIDC station about the incident immediately.



B. Action to be taken if train is seen approaching to site of danger and there is no time to protect the track as per guidelines mentioned above.

In such a case the detonators shall be planted on rails immediately at distance away from place of danger as far as possible and attention of driver of approaching train shall be invited by whistling, waving the red flag vigorously, gesticulating and shouting.

C. What action shall be taken if more than one track is obstructed.

- In case of single line protection as above shall be done in both the directions from place of danger.
- In case of double line or multiple lines, if other tracks are also obstructed, the protection as above shall be done for other track also.
- The protection shall be done in that direction and on that track first on which train is likely to arrive first.
- The Contractor's Supervisors, Operators and lookout men shall be properly explained about the direction of trains on running tracks.

D. Equipment required for protection of track.

Minimum compliment of protection equipment i.e. 10 detonators, 4 red hand flags, 4 red hand lamps, 4 banner flags and whistles etc. shall always be kept ready at worksites for use in case of emergency. HRIDC will arrange to provide detonators, whereas Contractor shall arrange other equipment at his own cost.

E. Arrangement of lookout men and competency required for lookout man to warn labour about approaching train.

- Contractor will provide lookout men.
- The lookout men shall be properly trained in warning to staff at worksite about approaching train.
- Only those lookout men shall be provided at site who have been issued with a competency certificate by the Railway's/HRIDC's Supervisor.
- In case, it is felt necessary to provide lookout men by HRIDC, the charges for the same as fixed by HRIDC Administration shall be recovered from Contractor.

10.5 Training to Supervisors and Operators of Contractor

The Supervisors and Operators of the contractor proposed to be deployed at work site, which is close to the running track, shall be imparted mandatory training by the HRIDC at site free of cost about the safety measures to be adopted while working in the vicinity of running track. HRIDC's Engineer-in charge of the work shall decide the scale, extent & adequacy of training. In case training is imparted at a recognized Railway training institute, the charges for the same, as decided by HRIDC, shall be recovered from the Contractor. A competency certificate to this effect to the individual Supervisor/Operator shall be issued as given below, by a HRIDC Officer not below the rank of DGM/HRIDC. No Supervisor/Operator of the Contractor shall work or allowed to work in the vicinity of running track that is not in possession of valid competency certificate.

All the labour, materials, tools, plants etc. except detonators, required for ensuring safe running of trains shall be provided by Contractor at his own cost. Wherever lookout men are provided by HRIDC, charges at the rate of Rs. 500/- per man day shall be recovered from Contractor.

A sample of training competency certificate is provided below for reference:

Competency Certificate
Certified that Shri Supervisor/Operator of M/s. has been trained and examined in safety measures to be followed while working in the vicinity of running railway track for the work. His knowledge has been found satisfactory and he is capable of supervising the work safely.
This certificate is valid only for the work mentioned in this certificate only.
Signature and designation of the officer

Memorandum of Understanding between Haryana Rail Infrastructure Development Corporation Limited (HRIDC) and the Contractor for safe execution of contract work

This Memorandum of Understanding is made and executed by and between **Haryana Rail Infrastructure Development Corporation Limited (HRIDC)**, a Joint Venture Company of Government of Haryana (51%) and Ministry of Railways (49%) and having its registered office at SCO No. 17-19, 3rd& 4th Floor, Sector-17-A, Chandigarh or their authorized representative(s), hereinafter referred to as “EMPLOYER” (which expression shall wherever the context so requires or admits be deemed to mean and include its successors in business and assigns) of the one party

AND

M/s _____ having its registered office at _____ hereinafter referred to as the “CONTRACTOR” (which expression shall wherever the context so requires or admits be deemed to mean and include its successors in business and assigns) of the other party

WITNESSETH THAT

WHEREAS the EMPLOYER gives highest importance to the occupational safety, health and environment during execution of work, seeks cooperation from the CONTRACTOR in this endeavour.

Thus, this Memorandum of Understanding is for promoting the safety, health and environment aspects required to be followed at workplace/site and will be applicable to any site job to be done by the CONTRACTOR

AND

WHEREAS the CONTRACTOR has read all the terms and conditions of the EMPLOYER and whereas the CONTRACTOR has studied the following documents:

- (a) Tender Documents, including Notice Inviting Tender, General Conditions, Special Conditions,
- (b) Conditions of Contract on Safety, Health and Environment and Project Safety, Health and Environment Manual.
- (c) Building and Other Construction Workers (Regulations of Employment and Conditions of Service) Act 1996, Central Rules 1998, Building and Other Construction Workers Welfare Cess Act 1996 and Rules 1998 and Haryana Building and Other Construction Workers’ Welfare Board Rules; and
- (d) Indian Electricity Act 2003 and Rules 1956.
- (e) Corresponding International / Bureau of Indian Standard Codes.

The amendments to any of the above rules and any other rules & regulations or procedures, circulars, notices & advices laid down by the EMPLOYER from time to time.

Now it is hereby AGREED AND DECLARED by and between the EMPLOYER and the CONTRACTOR as follows:

- Clause – I The CONTRACTOR shall abide by the terms and conditions stipulated in Condition of Contract on Safety, Health & Environment and Project Safety, Health & Environment Manual.
- Clause – II The CONTRACTOR shall undertake full responsibility for safe execution of job at workplace/site and safety of his personnel and adjoining road users during work.
- Clause – III Without giving any prior notice, the EMPLOYER shall from time to time be entitled to add/or amend any or all terms and conditions with a view to improving safety and occupational health of personnel and safety of work, with immediate effect and the same shall be binding on the CONTRACTOR. The contractor agrees to implement all such amendments, which shall be laid down by the EMPLOYER.
- Clause – IV Besides following the guidelines, safety rules and regulations, safety codes given in various safety procedures/documents mentioned above, the CONTRACTOR shall also prepare detailed method statement which includes job safety analysis wherever there are complicated and hazardous/high risk working involved and get it approved from EMPLOYER before execution of work.
- Clause – V Any negligence or violation in implementing any of the provision of the conditions of contract on Safety, Health & Environment shall be viewed seriously, and the CONTRACTOR is liable to compensate the EMPLOYER for the loss of reputation. The cost of damage shall be fixed on case-to-case basis.

In witness thereof the Parties hereto by representatives duly authorized have executed this Memorandum of Understanding on _ day of _ 20.

Signed on

Signed on

For and on behalf of HRIDC

For and on behalf of CONTRACTOR

Signature:

Signature:

Name:

Name:

Title:

Title:

CV of Project- Personnel

The Contractor shall provide all the information requested below. Use one form for each position.

Position		
Personnel information	Name	Date of birth
	Professional qualifications	
Present employment	Name of employer	
	Address of employer	
	Telephone	Contact (manager / personnel officer)
	Fax	E-mail
	Job title	Years with present employer

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

From	To	Company/Project/Position/Relevant Technical and Management Experience

Annexure-4

Memorandum of Understanding between Haryana Rail Infrastructure Development Corporation Limited (HRIDC) and the Contractor for safe execution of contract work

This Memorandum of Understanding is made and executed by and between **Haryana Rail Infrastructure Development Corporation Limited (HRIDC)**, a Joint Venture Company of Government of Haryana (51%) and Ministry of Railways (49%) and having its registered office at SCO No. 17-19, 3rd & 4th Floor, Sector-17-A, Chandigarh or their authorized representative(s), hereinafter referred to as “EMPLOYER” (which expression shall wherever the context so requires or admits be deemed to mean and include its successors in business and assigns) of the one party

AND

M/s _____ having its registered office at _____ hereinafter referred to as the “CONTRACTOR” (which expression shall wherever the context so requires or admits be deemed to mean and include its successors in business and assigns) of the other party

WITNESSETH THAT

WHEREAS the EMPLOYER gives highest importance to the occupational safety, health and environment during execution of work, seeks cooperation from the CONTRACTOR in this endeavour.

Thus, this Memorandum of Understanding is for promoting the safety, health and environment aspects required to be followed at workplace/site and will be applicable to any site job to be done by the CONTRACTOR

AND

WHEREAS the CONTRACTOR has read all the terms and conditions of the EMPLOYER and whereas the CONTRACTOR has studied the following documents:

- (a) Tender Documents, including Notice Inviting Tender, General Conditions, Special Conditions,
- (b) Conditions of Contract on Safety, Health and Environment and Project Safety, Health and Environment Manual.
- (c) Building and Other Construction Workers (Regulations of Employment and Conditions of Service) Act 1996, Central Rules 1998, Building and Other Construction Workers Welfare Cess Act 1996 and Rules 1998 and Haryana Building and Other Construction Workers’ Welfare Board Rules; and
- (d) Indian Electricity Act 2003 and Rules 1956.
- (e) Corresponding International / Bureau of Indian Standard Codes.

The amendments to any of the above rules and any other rules & regulations or procedures, circulars, notices & advices laid down by the EMPLOYER from time to time.

Now it is hereby AGREED AND DECLARED by and between the EMPLOYER and the CONTRACTOR as follows:

- Clause – I The CONTRACTOR shall abide by the terms and conditions stipulated in Condition of Contract on Safety, Health & Environment and Project Safety, Health & Environment Manual.
- Clause – II The CONTRACTOR shall undertake full responsibility for safe execution of job at workplace/site and safety of his personnel and adjoining road users during work.
- Clause – III Without giving any prior notice, the EMPLOYER shall from time to time be entitled to add/or amend any or all terms and conditions with a view to improving safety and occupational health of personnel and safety of work, with immediate effect and the same shall be binding on the CONTRACTOR. The contractor agrees to implement all such amendments, which shall be laid down by the EMPLOYER.
- Clause – IV Besides following the guidelines, safety rules and regulations, safety codes given in various safety procedures/documents mentioned above, the CONTRACTOR shall also prepare detailed method statement which includes job safety analysis wherever there are complicated and hazardous/high risk working involved and get it approved from EMPLOYER before execution of work.
- Clause – V Any negligence or violation in implementing any of the provision of the conditions of contract on Safety, Health & Environment shall be viewed seriously, and the CONTRACTOR is liable to compensate the EMPLOYER for the loss of reputation. The cost of damage shall be fixed on case-to-case basis.

In witness thereof the Parties hereto by representatives duly authorized have executed this Memorandum of Understanding on _ day of _ 20.

Signed on
For and on behalf of HRIDC

Signature:

Name:

Title:

Signed on
For and on behalf of CONTRACTOR

Signature:

Name:

Title:

Special Conditions of NS items of Schedules
(Bill of Quantity no. 5 to Bill of Quantity no. 9)

11 Non-Schedule (NS) Items:

11.1 NS Item No.1: Earthwork in excavation

Excavation in all kinds of soil (excluding rocks) in foundation & floor, wing walls, toe walls, return walls, drop walls & curtain walls of bridges and retaining walls including site clearance, to a given profile including levelling and dressing to neat dimensions, upto the required depth in all conditions, backfilling and disposal of the surplus excavated earth/debris/muck outside ROW including all lead, lift, ascends, descends, loading, unloading handling, re-handling, crossing of stream, nallahs, railway track, level crossing, etc., bailing/pumping out sub-soil water/seepage water/ rain water, sheet piling if required to ensure safety of running trains on adjacent tracks of IR, with all labour, material, tools, plants, machinery and equipment, taxes, cess, etc. as a complete job in accordance with the Specification and the approved drawings.

11.1.1 Method Statement

The Contractor shall submit Method Statement for carrying out the work of excavation with foundations and flooring, etc. suiting to local ground conditions and safety measures conforming to IS: 3764 (Safety Code for Excavation Work) to the Engineer for approval. The work shall be carried out strictly in accordance with the approved Method Statement, the Specification and the Drawings.

11.1.2 Site Clearance

The contractor shall clear the Site as required by demolishing all buildings, structures (above and below ground such as brick, concrete, steel, etc.) and removing all rubbish as agreed by the Engineer. The Site shall also be cleared of vegetation, trees, stumps roots, etc., All material so cleared from the site shall be disposed off by the Contractor outside the ROW as directed by the Engineer.

11.1.3 Setting Out

- i. After the site has been cleared, the limits of excavation shall be set out true to lines, curves, slopes, grades and sections as shown on the drawings or as directed by the Engineer. The Contractor shall be responsible for the setting out of works and the establishment and maintenance of benchmarks, other marks & stakes as long as in the opinion of the Engineer, they are required for the work.
- ii. Excavation shall be carried out in all types of soil encountered at site and to the lines, levels and profiles shown on the Drawings that have NONO from the Engineer. The Work shall be carried out by the Contractor in such a way as to avoid soil erosion and groundwater pollution, accidents in habitational or frequented places, disturbance to the surrounding ground or structures, accident to workmen and any other untoward incident. Fencing, caution signages with red lights and other safety measures shall be employed to avoid accidents. Where

- necessary, signal men shall be employed to guide the movement of people, vehicles and equipment.
- iii. The work shall be carried out in a careful manner to ensure that the exposed surfaces are as sound as the nature of the material permits and that no point shall protrude inside the lines shown on the Drawings.
 - iv. The Contractor shall be responsible for the safety and stability of all excavations performed by him or under his control. In case of any slips or blows in the excavation, the same shall be cleared by the Contractor at his own cost.
 - v. The Contractor shall notify the Engineer without delay of any permeable strata, joints, faults, fissures or unusual ground conditions encountered during excavation and any excavation instability and/or collapse.
 - vi. The Contractor shall ensure that no air pollution takes place during excavation, storage and transportation of earth/spoil by providing suitable measures such as appropriate cover and the like.
 - vii. The Contractor shall carry out ground stabilization measures without delay before and/or after excavation, if required.
 - viii. Contractor shall make provision for all shoring, de-watering, dredging, bailing out or draining water whether subsoil or rain or other water and the excavation shall be kept free of water while concrete work is in progress until the Engineer considers the work well set. The sides of trenches shall be kept vertical and the bottom level throughout or properly stepped as directed by the Engineer. No extra payment shall be made on this account.
 - ix. De-watering shall be carried out by suitable means with adequate stand-by arrangements as may be approved by the Engineer. The Contractor shall be deemed to have satisfied himself with regard to feasibility of all aspects of de-watering including site constraints due to existing structures. Though the method of de-watering is left to the Contractor, he shall be required to submit method statement of de-watering scheme including requisite justifications to obtain approval from the Engineer.
 - x. Approval of the Engineer, however, shall not relieve the Contractor of the responsibility of adequacy and appropriateness of de-watering and protection arrangements for the quality and safety of the work.
 - xi. The Contractor shall erect and maintain during progress of works temporary fences/ barricading around the work area with all safety measures as shown in Reference Information/Reports. The excavations near habitations, public movement areas and all works along the roads shall be provided with proper caution signs and marked with red lights, reflectors at night to avoid accidents. The Contractor shall take all adequate protective measures to see that excavation operations do not affect or damage adjoining structures.

11.1.4 Disposal of muck

The surplus excavated material (that cannot be used in the Works), shall be treated as contractor's property. The contractor shall be free to take away and make use of this surplus excavated material in the manner he wishes to, including disposal in spoil dumps or elsewhere as approved by the Engineer/concerned parties and regulating authorities. The employer takes no responsibility for the arrangement of dumping areas and these will have to be arranged by the Contractor at his own cost. The Contractor is required to carry out detailed survey to identify dumping areas, clearances required, leads involved etc. The quoted rates shall be deemed to have taken all these factors into account. The excavated material that can be used in the Works, shall be temporarily stockpiled, if required, in a dump site as proposed by the contractor and agreed by the Engineer and the concerned regulating authorities. Any royalty, if to be paid to local authorities on the excavated material, is to be borne by the Contractor at his own cost irrespective of whether the excavated material is used for the Works or being used for any other purpose or being disposed off as surplus. Truck drivers shall be trained and educated by the Contractor to follow the traffic rules.

11.1.5 The Contractor shall ensure that traffic management on roads and railways during construction of RUBs is carried out in accordance with SHE Manual.

11.1.6 Excavation beyond True Lines and Levels

If due to any cause whatsoever excavations are carried out beyond their true line and level, the Contractor shall make good excavation at his own cost to the required line and level with the appropriate grade of filling or with concrete subject to the NONO from the Engineer.

11.1.7 Backfill to Structures

- a) Prior to commencement of backfill, the Contractor shall submit his proposals for carrying out work such that the optimum use may be made of excavated material and obtain approval from the Engineer. The proposals shall include details of the compaction plant and methods for adjusting the moisture content of the material.
- b) No filling shall commence until approval has been received from the Engineer.
- c) The Contractor shall not backfill around structures until the structural elements have attained adequate strength.
- d) The backfill material shall be selected excavated material, thoroughly compacted mechanically in layers not exceeding 300mm loose thickness to achieve a density of at least 90% of the maximum dry density.

11.1.8 Tolerance:

Permissible Tolerance for excavation

Item	Standard value (mm)
Finished depth of excavation	+30 to -30
length/width	0 to +50

11.1.9 Method of Measurement

Measurement for payment for excavation in all kinds of strata will be the in-situ volume measured in cum from the levels recorded prior to excavation work and the lines and gradesshown on the Drawings or established at the Site by the Engineer.

No extra measurement for payment or payment will be made for the following reasons, but not limited to:

- (a) Extra work caused by the Contractor's negligence in setting-out the structures and slopes.
- (b) Removal of the materials resulting from any slides or overbreak caused by Contractor's inappropriate working methods and for the additional materials required to fill the voids so created.
- (c) Excess excavation required for Contractor's convenience and the resulting additional backfilling with approved materials.
- (d) any temporary support required for the excavation

11.2 NS Item No. 2: Weep Holes

Providing and fixing weep holes in abutments, wing walls and return walls etc., of new bridges with 110mm dia UPVC pipe, Type A conforming to IS:13592 with all contractor's men, material, transportation, all taxes as per the Specification and as directed by the Engineer.

11.2.1 Method Statement.

The method statement for providing and fixing of weep holes shall be submitted by the Contractor to the Engineer for approval.

11.2.2 Execution

Pipe for weep holes shall be placed at the specified locations and spacing in abutment, return walls and retaining walls etc. as shown in the Drawings.

11.2.3 Method of Measurement

Measurement for payment for weep holes shall be in running metres as shown in the Drawings.

11.3 NS Item No. 3: Stainless Steel

Providing and fixing stainless steel (Grade 304) railing made of hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, including fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of the Engineer, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)

11.3.1 Method Statement

The Contractor shall submit Method Statement for fixing of stainless steel (Grade 304) for railing in staircase, balconies, pedestrian subway, Enquiry/Reservation counters to

the Engineer for approval. The work shall be carried out strictly in accordance with the approved Method statement and the Drawings.

11.3.2 Material

The stainless steel (304 grade) shall conform to IS 6911: 2017. Fabrication of railing shall be done as shown in the Drawings. Fabrication of all stainless-steel sections should be done only with tools dedicated to stainless steel materials. Tooling and work surfaces must be thoroughly cleaned before use.

Following items shall be ensured:

Removal of all moisture by blowing with dry air or heating with a torch.

Elimination of organic contaminates like oil, paints, anti-spatter compounds, grease, pencil marks, cutting compounds, adhesive from protective paper, soap used for leak testing etc.

Plasma cutter to be used for cutting stainless steel.

Zinc contamination to be avoided.

Brushes or tools previously used on galvanized steel not to be used.

11.3.3 Fixing

Railing shall be fixed with necessary accessories and stainless-steel dash fasteners & stainless-steel bolts etc. of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of the Engineer.

11.3.4 Method of Measurement

Only weight of stainless-steel members shall be considered in kg for the purpose of measurement. Fixing accessories such as nuts, bolts, fasteners etc. shall be deemed to be included in this item and shall not be paid separately. The rate shall include the cost of materials and labour involved in all the operations described above. Nothing extra shall be paid for fixing arrangements i.e. drilling, providing nuts & bolts etc.

11.4 NS Item No. 4: Pre-cast concrete blocks

Casting, supplying and installing pre-cast concrete blocks of size 25X25X20 cm for protective works at bridges and slope of embankment using M-15 grade of concrete with 20mm aggregate size including shuttering, compaction & curing of concrete, leading to site from casting depot, including dressing and levelling of surface, laying & jointing blocks with cement mortar 1:3 with all material including cement, labour, lead & lift as directed by the Engineer.

Note:

i. Cost of cement is included in the above item.

11.4.1 Method Statement

The Contractor shall submit Method Statement for casting, supplying and installing pre-cast concrete blocks for protective works at bridges to the Engineer for approval. The work shall be carried out strictly in accordance with the approved Method Statement and the Drawings.

11.4.2 Material

The work shall consist of pre cast cement concrete blocks in M-15 grade of size 25 cm x 25 cm x 20 cm in a casting yard. The Contractor shall establish a casting yard for manufacture of precast cement concrete blocks. The casting yard shall have facilities for casting, compaction, curing and loading of cement concrete block into trucks/tractor trollies. Concrete shall conform to Appendix-A of these Technical Specifications.

11.4.3 Execution

Before laying the pitching, the sides of banks shall be trimmed to the required slope and profiles put up by means of line and pegs at intervals of 3 metres to ensure regular straight work and a uniform slope throughout. Depressions shall be filled and thoroughly compacted.

The lowest course of pitching shall be started from the toe wall and built up in courses upwards.

11.4.4 Method of Measurement

Measurement shall be in cubic meter based on quantity calculation of only the blocks used (i.e. number of blocks x volume of one block).

11.5 NS Item No. 5 : Construction of granular sub-base by providing Material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with Rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per technical clause 401 of MORT&H technical specifications and as per satisfaction of Engineer-in-charge.

11.6 NS Item No. 6: Providing and laying CC of specified grade as per approved plan and M-35 mix design, coarse sand and stone aggregate of 20mm nominal size for all heights and depths in pavements/ roads/ wearing coat etc. Cost of supplying & fixing form work (centering & shuttering) is included in this item and as per satisfaction of Engineer-in-charge.

Note:

- i. Cost of cement is included in the above item.
- ii. Cost of Reinforcement steel is not included in the above item and will be paid separately under item no. 1(i) of Bill No.2 (USSOR item No. 045016).

11.7 NS Item No. 7: Hiring of 2 No. AC vehicle i.e. One No. Innova Crysta and one No. Scorpio on monthly basis for the use of HRIDC officers at Manesar, Gurugram for 3000 Km Per month. The rates are inclusive all cost of maintenance, major/minor repairs, cost of lubricants, fuel, drivers, GST and other taxes etc. for a complete job. Toll Tax, Parking charge shall be paid extra on certification of officer using vehicle.

- a) On any particular date, use of vehicle is restricted up to **twelve hours** in normal circumstances but due to urgency and requirement of work, it may be extended beyond 12 hours, for which overtime at the accepted rate for additional hour or part thereof is payable. Vehicle shall be used for work of railway and territorial limit of use of vehicle is unlimited. Contractor shall provide vehicle without delay when shall be required and vehicle shall not be changed frequently for the sake of working.

- b) Driver shall maintain a logbook and ensure that it is signed by the official using the vehicle.
- c) Charges are inclusive of all running maintenance and repair expenses, cost of fuel, lubricants and any other consumables required from time to time, all taxes, duties, incidental charges, penalties etc. as imposed by central /State/ Local Government bodies for running of vehicles, salary and other benefits admissible to driver. Nothing extra over and above the accepted rates will be paid by railways.
- d) Vehicle shall be used on any type of road i.e., Kachha/Pucca including along the railway track as per direction of official using the vehicle
- e) The vehicle should be available to the HRIDC with driver, fuel, engine oil etc., round the clock, as and when required on all days of week irrespective of holidays.
- f) If the vehicle is out of order, alternate arrangement shall be made by the contractor. Failing it, vehicle will be hired from the open market and actual payment made for the same along with a token penalty of Rs. 200.00 per day shall be recovered from the contractor.
- g) Vehicle shall be engaged from specific place at specific time on a day, shall be used as per requirement and shall be released after days' work at HRIDC/Gurugram or as decided by the Engineer in charge. Vehicle shall be re-engaged from the same place next day. Time period between vehicle is released and is reengaged next day shall be rest period for which nothing is payable.
- h) Speedometer and kilometer recorder shall be maintained to high standard/ accuracy. Any defect notice shall be rectified immediately. If kilometer recorder is defective/out of order, the kilometers verified by official using the vehicle shall be final and binding.
- i) HRIDC shall not provide any accommodation to driver. Driver himself shall arrange boarding/lodging.
- j) Vehicle should be One No. Innova Crysta and one No. Scorpio and shall not be Older than 2020 model.
- k) Driver should always have valid license with him. All the paper for vehicle like registration papers, insurance papers, certificate towards payment of road tax etc. shall be readily available with driver.
- l) HRIDC shall be absolved from all claims/ compensation etc. in case vehicle is involved in any type of accident.

11.8 NS Item No. 8: Two coats of Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour and as per satisfaction of Engineer-in-charge.

11.9 NS Item No.9 : Providing & Applying (2 coats of base coat + 2 coats of top coat) and 1coat of textured paint (Asian Paint Apex Ultima protek + Finetex or equivalent) as per specification mentioned: Specification including cleaning surface with wire brush, remove loose dirt, flaking

paint algae, fungus mortar dropping etc. thereafter wash and rinse the surface with clean water including MS tubular scaffolding (H Frame) up to 3 floor height, all materials, labours, tools and tackles, loading and unloading, transportation complete as per direction of EiC.

11.10 NS Item No. 10: Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction and satisfaction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.

- a) 20 mm nominal dia Pipes
- b) 25 mm nominal dia Pipes
- c) 32 mm nominal dia Pipes

11.11 NS Item No. 11: Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete and as per satisfaction of Engineer-in-charge

11.12 NS Item No. 12 : Providing and laying in position ready mixed or site batched design mix cement concrete of M-25 grade for plain cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; including cement but excluding the cost of centering, shuttering and finishing as per direction of the engineer-in-charge.

- a) All works upto plinth level.

Note:

- i. Cost of cement is included in the above item.
- ii. Cost of supplying & fixing form work (centering & shuttering) is not included in the above item and will be paid separately under relevant itemof Bill No.1 (USSOR Chapter-19).

11.13 NS Item No. 13 : Providing and laying in position ready mixed or site batched design mix cement concrete of M-25 grade for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; including cement but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge

- a) All works upto plinth level.
- b) All works above plinth level upto floor V level

Note:

- i. Cost of cement is included in the above item.
- ii. Cost of Reinforcement steel is not included in the above item and will be paid separately under relevant USSOR item.
- iii. Cost of supplying & fixing form work (centering & shuttering) is not included in the above item and will be paid separately under relevant USSOR item.

11.14 NS Item No. 14 : Providing and fixing Granite stone slab colour black, Cherry/Ruby red 18 mm thick gang saw cut, mirror polished, pre moulded and pre polished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels and as per satisfaction of Engineer-in-charge

11.15 NS Item No. 15: Providing temporary steel barricading 2.0mtr. High and making arrangement for traffic diversion such as traffic plan during construction period at site for day and night as per requirement and as per HRIDC type drawing. This item will be payable only once during the entire construction period till completion of work. The arrangement of barricading and traffic diversion has to be kept continuously. This shall include repositioning and repainting of barricading and provision of suitable reflectors and red lamps at night. The dimensions of barricades as given in drawing with all labour and material as a complete job. Nothing extra will be paid for fixing and other arrangements. (The released barricades will be the property of the contractor). Work will be executed as per specifications and as per satisfaction of Engineer-in-charge

11.16 NS Item No. 16: Providing and fixing glazing in door, window, ventilator shutters and partitions etc. with EPDM rubber/neoprene gasket etc. complete as per the architectural drawing and the direction of Engineer-in-charge.(cost of aluminium snape beading shall be paid in the basic item and as per satisfaction of Engineer-in-charge.

- a) With toughened glass panes of 6mm thickness.
- b) With toughened glass panes of 8mm thickness.
- c) With toughened glass panes of 12mm thickness.

11.17 NS Item No. 17: Fixing of aluminium section including all necessary screws/dash fasteners including filling of gaps with required neoprene gasket /EPDM etc. and the direction of Engineer-in-charge. Aluminium section will be paid relevant USSOR item-2010 separately and as per satisfaction of Engineer-in-charge.

- a) Extra for providing frosted glass (Toughened glass cost to be paid in NS-16(a) or (b) or (c) as per use.

11.18 NS Item No. 18:Providing and fixing maple wood band with melamine finish.

- a) 100mm wide
- b) 58mm wide

11.19 NS Item No. 19:, Providing and fixing in position laminated panels consisting of 9mm commercial ply & 1.5mm laminate with 12mm grooves between adjacent panels. Inside of grooves to be filled with aluminium U channel, top ledge to be finished in maple wood ,as per detail complete in all respect and as per satisfaction of Engineer-in-charge.

11.20 NS Item No. 20: Providing and fixing door frames in first class maple wood of section 100x38mm with rebate and holdfasts, to be finished in melamine polish all complete and as per satisfaction of Engineer-in-charge.

11.21 NS Item No. 21:Providing and fixing door frames in first class maple wood of section 125x62mm with rebate and holdfasts ,to be finished in melamine polish all complete and as per satisfaction of Engineer-in-charge.

11.22 NS Item No. 22: Providing and fixing door frames in first class maple wood of section 150x62mm with rebate and holdfasts ,to be finished in melamine polish all complete and as per satisfaction of Engineer-in-charge.

11.23 NS Item No. 23: Waterproofing : Providing and applying one coat of primer (anti-efflorescence primer product DURA SHORASEAL as per manufacturer's specification dilute with water) over the surface. This should cover 7-8 sqm/kg, allow it to be dry for 5-6 hours. Apply three coats oa Acrylic based Microfiber Reinforced (40gsm),heavy duty waterproofing cum insulation coating DURA KOTEKOOL over the entire area at the rate of 1.5-2 sqm/lit for each coat. Allow it to dry before taking up second and third coat ,the rate of application being the same. Total thickness will be 1.5mm.Top Coat must be white/grey mineral. The polyester fibre mesh(40gsm) will be sandwiched between the first and second coats and cost is included. and as per satisfaction of Engineer-in-charge.

11.24 NS Item No. 24: Providing and fixing of roof tiles of 10mm thick mat finish vitrified tile of Orient bell(Cool roof tiles SRI-103) ,water absorption (avg=<0.5%), as per approved shade laid in required pattern with 3mm groove as per company recommended spacer on base of adhesive of Latecrite make including the preparation of sub base roof if required . Tiles joints /grooves to be filled with water proof epoxy grouted of Latecrite make.

11.24.1Make: Orient bell type : cool roof vitrified tile, thickness-10mm SRI-103, Water absorption<0.5%,Reflectance-0.82,Emissivity-0.87,Modulus of rupture>38N/mm², Breaking strength> 1800 N,Size:300x300mm and as per satisfaction of Engineer-in-charge.

11.25 NS Item No. 25: Providing and fixing G.I. gratings/stainers made of MS flat with hot dip galvanised coating 80-100 micron.

11.26 NS Item No. 26 : Providing and fixing of Hollow metal Steel door at all levels from ISO 9001-2000 certified Manufacturer. Fully flush type of 46 mm thick Pressed

Galvanized steel conforming to IS 277, Single / Double leaf to any size & shape, of SHAKTI MET-DOR make which consists of frame, shutter, infill and finish as detailed below Door frame shall be single rebate profile of size 100 x 57 mm with bending radius of 1.2 mm having 1.20 mm thick galvanized steel sheet (18 gauge). Steel door shutter of 46 mm thick, fully flush, double skin door shall be manufactured from 0.80 mm thick galvanized steel sheet (22 gauge). The stile edges to be lock seamed with no weld marks. The infill material shall be resin bonded honey comb Krah paper with thermal insulation. Door frames and shutter shall be finished with Epoxy (35 microns OFT) of approved colour. Rate shall include for supply and fix 3 mm thick base plates, all joints of frames with provision for anchor bolt fixing to wall I RC surface, reinforcement pad for fixing of door closers, factory finish, pre-punched cut outs to receive hardwares and iron mongery, 3 mm thick hinge plates predrilled to receive hinges for screw mounted fixing and as per satisfaction of Engineer-in-charge.

11.27 NS Item No. 27 : Providing & Fixing of Armstrong Mineral Fibre Acoustical Suspended Ceiling System with Classic Max (Bevelled Tegular) Edge Tiles With Armstrong 15mm Exposed GRID. The tiles should have Humidity Resistance (RH) of 99%, NRC 0.7, Light Reflectance 87%, Thermal Conductivity $k = 0.052 - 0.057$ w/m K, Colour White, Fire Performance UK Class 0 I Class 1 (BS 476 pt - 6 & 7) in module size of 600 x 600 x 17mm suitable for Green Building application, with Recycled content of 60%. The tile shall be laid on Armstrong Silhouette profile grid system with 15mm white flanges incorporating a 6mm central reveal in white/black colour and with a web height of 45mm and a load carrying capacity of minimum 15.68 Kgs/M² & minimum pull out strength of 100 kgs.. Silhouette, Main Runners & Cross Tees to have mitred ends & "birdsmouth" notches to provide mitred cruciform junctions. The T Sections have a Galvanizing of 90 grams per M² and need to be installed with suspension system of Armstrong make. The Tile & Grid system used together should carry a 30 year warranty.

INSTALLATION: To comprise main runner spaced at 1200mm centres securely fixed to the structural soffit using Armstrong suspension system (specifications below) at 1200mm maximum centre. The First/Last Armstrong suspension system at the end of each main runner should not be greater than 450mm from the adjacent wall. Flush fitting 1200mm long cross tees to be interlocked between main runners at 600mm centre to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm module to be formed by fitting 600mm long flush fitting cross tees centrally between the 1200 mm cross tees. Perimeter trim to be Armstrong wall angles of size 3000x19x19mm, secured to walls at 450mm maximum centres.

ARMSTRONG SUSPENSION SYSTEM accessories manufactured and supplied by Armstrong World Industries consisting of MG Anchor Fasteners with Vertical Hangers made of Galvanised steel of size 26 x 26 x 25 x 1.2mm with a Galvanised Thickness of 80gsm, A pre-Straightened Hanger wire of dia - 2.5 mm of 1.8 m length, thickness of 80gsm and a tensile strength of 344- 413 MPa, along with Adjustable hook clips of 0.8mm thick, galvanised spring steel for 2.68 mm with a minimum pull strength of 110 kg. The adjustable clip also consists of a 3.5 mm aquiline wire to be used with the main runner.

11.28 NS Item No. 28 : Manufacturing, supplying & fixing of pre-fabricated RCC coping stone of size 530mm x 1125mm x 100mm thick as per top face designed and approved by site Engineer with M-30 grade RCC with 8 mm dia. tor steel at 150mm c/c both ways and manufactured by vibro compaction process using jointless FRP/GRP steel moulds of required size, shape & design. The item includes cost of cement, reinforcement,

transportation etc. (Note : Under layer of cement mortar to be laid as per site conditions & should be paid for separately).

11.29 NS Item No. 29 : Reinforced Cement Concrete

Supplying and laying in position M-35 RCC in Pile Caps, RCC Box/Sub way, Piers, Abutments, Pier Cap, Abutment Cap, Pedestals, Retaining wall, wing walls, Return walls, drop walls, curtain walls & toe walls of all heights as per approved design mix with admixtures and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all lifts & leads, having continuous agitated mixer, pumping concrete from transit mixer to site of laying, compacting, finishing & curing, with all labour, material, tools, plants, machinery and equipment, taxes, cess etc., as a complete job including cement in accordance with the Specification and the Drawings, but excluding supplying & fixing form work (centering & shuttering) and excluding Reinforcement steel.

Note:

- i. Cost of cement is included in the above item.*
- ii. Cost of Reinforcement steel is not included in the above item and will be paid separately under item no. 2(i) of Bill No.2 (USSOR item No. 045016)*
- iii. Cost of supplying & fixing form work (centering & shuttering) is not included in the above item and will be paid separately under relevant item of Bill No.1 (USSOR Chapter-19)*

11.29.1 Method Statement

The Contractor shall submit Method Statement for carrying out the work of RCC bridges to the Engineer for approval. The work shall be carried out strictly in accordance with the approved Method Statement, the Specification and the Drawings. RCC work shall comply with the provisions of Appendix-A of these Technical Specifications.

11.29.2 Traffic Management

The Contractor shall ensure that traffic management on roads and railways is carried out in accordance with Sub-Division 6070 of the General Specifications.

11.29.3 Method of Measurement

Measurement for payment of this item shall be the quantity of RCC worked out/ measured in cum from the Drawings.

11.30 NS Item No. 30: Providing and laying , including transportation, launching and fixing in position specified grade RCC (M-35) precast Retaining wall as per approved plan and mix design with coarse sand and stone aggregate of 20mm and down gauge in various structure for all heights and depths including compaction of concrete by electric/mechanical vibrator, providing and using admixture in recommended proportion as per IS 456 & IS9103, IRS concrete bridge code and bridge sub structure code applicable & as per approved mix design complying with minimum cement content maximum water cement ratio and slump as specified, produced by automatic RMC plant transporting concrete by transit mixture and placed using concrete pump, tremie pipe and crane etc. including designing of concrete mix, finishing the exposed surface of

concrete, curing of concrete as required in IRS –Concrete Bridge Code and bridge sub structure code/OS Codes as applicable, including all lead by transit mixer, lift, pumping, ascend descend, loading unloading, handling, wastages if any, cost of all safety works and safety precautions with all labour, arrangements for cold weather and hot weather concrete as applicable, taxes and royalty etc, as a complete job as per specification and as per directions of Engineer in charge. Nothing extra will be paid on any account. The rate will also include cost of OPC cement, including shuttering and admixture (Plasticizer, super plasticizer, or retarder etc) as per approved mix design. Joint will be made good all above work will be done as per Engineer-In-Charge satisfaction.

Note: 1. Reinforcement steel including cutting, straightening, hooking, bending, binding, placing and keeping and maintaining in position will be arranged by contractor and payment of reinforcement steel will be made separately under relevant items of USSOR: 2010.

2. Shuttering for execution for this work is included in this item.

3. Providing and laying, including transportation, launching and fixing in position of Retaining wall in blocks. Rates are included in this item.

4. Binding wire for maintaining reinforcement in position will be Provided by the contractor free of cost and no separate payment will made for binding wire.

5. Weep hole will be paid separately under relevant items of USSOR: 2010.

11.30.1 Mode of Payment:

(a) 60% payment against this item will be made after Casting.

(b) 30% payment against this item will be made after erecting/launching in position.

(c) Balance 10% payment against this item will be made after filling joints good and finishing with all respect as per specification of Engineer -in -charge.

11.31 NS Item No. 31 : Earthwork in Embankment

Earthwork in embankment for 32.5 T axle load as per RDSO specification No. RDSO/2020/GE:004 September 2020 “Comprehensive Guidelines and Specification for Railway Formation” with contractor’s own earth from borrow areas including all lead, lift, ascent, descent, royalty, taxes, cess, compensation, crossing of nallahs /stream and other obstructions including mechanical compaction in layers with watering, handling, re-handling, dressing of banks to the final profile with all labour, material, tools, plant, machinery and equipment, taxes, cess etc. as a complete job in accordance with the Specification and the Drawings. This item also includes dressing of existing ground surface after removal of all vegetation and making up the surface (average excavation or filling upto 15 cm) in all kinds of soil upto 1m extra on either side of the proposed toe and as per satisfaction of Engineer-in-charge

Note: 10% of payment shall be withheld till the slopes are dressed to the required profile and compacted mechanically with vibratory rollers as per RDSO guidelines.

11.31.1 Method Statement

The Contractor shall submit Method Statement for carrying out earthwork in embankment to the Engineer for approval.

11.31.2 Execution

- a) This item of work shall consist of the clearing and stripping of borrow pits, excavating and hauling, spreading and compacting of soil for constructing formation to the lines, levels, grades, dimensions and cross-sections shown on the Drawings and as required by the Engineer.
- b) The contractor shall arrange suitable borrow areas at his own cost and get them approved from the Engineer before using soil from such borrow areas.
- c) The work shall be executed as per provisions of Chapter 6 of RDSO specification No. RDSO/2020/GE:004 September 2020 “Comprehensive Guidelines and Specification for Railway Formation” (Herein after known as RDSO Guidelines).
- d) The suitability of sub-soil shall be ensured as per Sub-Clause 2.2 of RDSO Guidelines.
- e) Soils mentioned in Sub-Clause 3.7 (a) of the RDSO Guidelines shall not be used.
- f) SQ-1 type of soils shall not be used in prepared subgrade and top layer of subgrade.
- g) Quality control of earthwork in formation shall be ensured as per Clause 7 of RDSO Guidelines.
- h) Field Compaction Trial shall be carried out to determine suitable machinery, frequency, the number of passes and thickness of each layer to achieve required degree of compaction
- i) MDD in laboratory shall be determined by using Heavy Proctor test as per IS 2720 Part- 16.
- j) MDD achieved in the field compaction trial shall not be less than 98% of the MDD achieved in laboratory.
- k) Degree of compaction of soil in prepared subgrade/top layer of subgrade shall not be less than 98% of MDD achieved in field as a result of Field Compaction Trial.
- l) Degree of compaction of soil in lower layer of subgrade shall not be less than 97% of MDD achieved in field as a result of Field Compaction Trial
- m) Slope shall also be compacted with vibratory rollers of approved capacity and make as per RDSO guidelines. This would be done after dressing of the bank for final profile.
- n) The type of test, frequency and acceptance criteria for quality check of earthwork shall be as given in Chapter 7 of RDSO Guidelines.

11.31.3 Method of Measurement

Measurement for payment for earthwork in embankment will be the in-situ volume as measured in cubic meter (cum) from the levels recorded prior to any filling work and the lines and grades shown on the Drawings or established at the Site by the Engineer. 10% payment shall be withheld till the slopes are dressed to the required profile and compacted mechanically with vibratory rollers as per RDSO guidelines.

11.32 NS Item No. 32 : Blanketing material

Supplying and laying blanketing material produced through mechanical means using crushers and pug mill for 32.5 T axle load as per RDSO specification No. RDSO/2020/GE:004 September 2020 “Comprehensive Guidelines and Specification for Railway Formation” over the top of subgrade including all lead, lift, ascent, descent, royalty, taxes, cess, crossing of nallahs /stream and other obstructions including mechanical compaction in layers not exceeding 300 mm thick with vibratory rollers, watering, handling, re-handling and dressing of formation to the final profile with all labour, material, tools, plants, machinery and equipment, taxes, cess, etc. as a complete job in accordance with the Specification and the Drawings and as per satisfaction of Engineer-in-charge

Note: 10% of payment shall be withheld till the slopes are dressed to the required profile and compacted mechanically with vibratory rollers as per RDSO guidelines.

11.32.1 Method Statement

The Contractor shall submit Method Statement for providing blanketing to the Engineer for approval.

11.32.2 Execution

- i. After conducting necessary tests and field trials the Contractor shall get the blanket material approved from the Engineer.
- ii. The work of blanketing shall be done in accordance with the Specification, the Drawings and RDSO specification No. RDSO/2020/GE:004 September 2020 “Comprehensive Guidelines and Specification for Railway Formation”.

11.32.3 Method of Measurement

Measurement for payment of blanketing will be as per the cross section shown in the Drawings or established at the Site by the Engineer. 10% payment shall be withheld till the slopes are dressed to the required profile and compacted mechanically with vibratory rollers as per RDSO guidelines.

11.33 NS Item No. 33: - Supply of 60 kg 1 in 8.5, 6400mm Overriding Curved Switch conforming to RDSO Drg. No. T-4965/T-4966 with latest alteration, if any complete with all parts as listed in the drawing with check rails (excluding fish plates, Fish bolts &nuts, GRSPs, Liners and ERCs) and as per satisfaction of Engineer-in-charge.

Note: Rails will be issued free of cost by the HRIDC.

11.34 NS Item No. 34: - Supply of 60 kg CMS Crossing for 1 in 8 ½ PSC Layout conforming to RDSO Drg No. T-4967 with latest alterations complete with all parts as listed in the drawing (excluding fish plates, fish bolts & nuts, GRSPs, Liners and ERCs) and as per satisfaction of Engineer- in-charge.

- 11.35 NS Item No. 35:** -Supply of GFN Liners (60 Kg) to RDSO Drg. No. T-6938 and T-6939 for wider sleepers and as per satisfaction of Engineer-in-charge.
- 11.36 NS Item No. 36:** - Supply of Metal Liners for use with ERC MK-V on 25 T concrete sleepers to RDSO Drg. No. T-8616 and T-8617 and as per satisfaction of Engineer-in-charge.
- 11.37 NS Item No. 37:** - Supply of 10 MM thick Composite Grooved Rubber Sole Plate (CGRSP) to RDSO Drg. No. T-8528 for wider sleepers and as per satisfaction of Engineer-in-charge.
- 11.38 NS Item No. 38:** - Supply of Grooved Rubber Sole Plates for Turnout 1 in 8 1/2 for layout drawing no. T-4865 with latest alterations if any, complete set for the turnout as per IRS specifications for Grooved Rubber Sole Plates (6mm thick) for placing beneath rails Sl.no. T-47-2006 with up-to-date corrigendum, if any and as per satisfaction of Engineer-in-charge.
- Note: Details of GRSP are contained in three drawings of Layout assembly, Switch and Crossing- RDSO Drg. No. T-4865, T-4966 & T-4967 respectively.
- 11.39 NS Item No. 39:** - Supply of ERC MK -V to RDSO Drg. No. T-5919 and as per satisfaction of Engineer-in-charge.
- 11.40 NS Item No. 40:** - Fabricating & supplying of 60 Kg improved SEJ with 80mm max. gap as per Drawing No. RDSO/T-6902 with latest alteration including all fixtures and fastenings etc. complete as directed by Engineer-in-charge. Rails will be supplied free of cost by the Employer.
- 11.41 NS Item No. 41:** - Supply of 60 Kg Fish Plate and as per satisfaction of Engineer-in-charge.
- 11.42 NS Item No. 42:** - Supply of fish bolts with nuts for 60 KG rails as per RDSO Drawing No. T-1899 and as per satisfaction of Engineer-in-charge.
- 11.43 NS Item No. 43:** - Supply of 60 KG, 1 m long Fish plates as per RDSO Drawing No. T -5916 and as per satisfaction of Engineer-in-charge.
- 11.44 NS Item No. 44:** - Supply of screw clamps for fish plates as per RDSO Drg No. T-5856 and as per satisfaction of Engineer-in-charge.
- 11.45 NS Item No. 45:** - Supply of joggled fish plates (2 Nos. per set) with 4 pair clamps, 4 Nos. Bolts & Nuts and 8 Nos. special washers for 60 KG rail as per RDSO Drawing No. T-5849 and as per satisfaction of Engineer-in-charge.

11.46 NS Item No. 46: - Supplying at site of work including leading, loading, unloading and stacking PSC turnout sleepers and approach sleepers for fan shaped layout of 60 Kg 1 in 8.5 turnout for B.G 60 Kg. (UIC) rail to RDSO Drg. No. T-4865 (for general layout) and drawings thereof with latest alterations if any, complete set with contractor's labour, materials, tools & Plant, equipment and machinery, transport etc complete and as per satisfaction of Engineer- in-charge.

11.47 NS Item No. 47: - Supply of Wider PSC sleepers for level crossings as per RDSO Drawing No. T- 8671 for 60 KG rail and as per satisfaction of Engineer-in-charge.

11.48 NS Item No. 48: - Supplying at site of work including leading, loading, unloading and stacking PSC sleepers for SEJ as per RDSO Drawing No. T-4149 for 60 kg rail and as per satisfaction of Engineer-in-charge.

11.49 NS Item No. 49: - Maintenance of track after commissioning at normal sectional speed till track is handed over to the Railway/MSIL by deploying 1 gang of 25 suitable persons headed by qualified P. Way supervisor. Attention to track to be done as per requirement to keep the track parameters within prescribed limits as per IRPWM for the sectional speed and as per satisfaction of Engineer-in-charge.

Note: In case additional/less gang deployment is done as per direction of the engineer, the payment shall be appropriated proportionately

i) These below written special condition are applied from NS-33 to NS-49:

- a) All P. Way materials shall be procured only from suppliers included in part I list of RDSO approved suppliers for the particular item. Where, such a list is not maintained by RDSO, prior approval of source of supply shall be obtained from the HRIDC.
- b) All P. Way materials shall be inspected by the inspecting authority of HRIDC for the particular material. However, HRIDC reserves the right to nominate any authority or its own representative to inspect the material.
- c) The price quoted also includes RDSO/HRIDC Consignee inspection and testing charges unless otherwise specified in the bill of quantities or Technical Specification.
- d) If the rails required for manufacture of the finished material are to be issued free of cost by the HRIDC, as specified in the description of item, the HRIDC shall issue such rails either in project area from any place near to the manufacturer's workshop depending upon availability. The quoted rates include cost of handling and transportation of rails to the manufacturer's workshop and finished materials from the manufacturer's workshop to the site of work.
- e) All P. Way material shall be neatly stacked and stored in the project area and protected against loss/ deterioration by proper watch and ward staff, insurance, etc, the cost of which is deemed to be included in the rates.

11.50 NS Item No. 50: - Supply of machine-crushed stone ballast on cess as per RDSO specifications for track ballast: IRS-GE-1 of June, 2016 from outside railway limits stacked in specified quantities alongside the proposed alignment on either side of track, in yards and at locations as per site requirement as directed by the Engineer.

Note 1: Payment will be made on actual stack measurement for gross quantities without any deduction for voids in following stages: (i) 95% on receipt at site, acceptance, measurement, account, proper storage and protection against loss, damage or deterioration; and (ii) balance 5% after training out.

Note 2: The rate also includes levelling, dressing of ground for stacking of ballast.

11.50.1 Physical properties:

- a) Ballast sample should satisfy the following physical properties in accordance with IS: 2386 part-IV-1963, when tested as per the procedure given in Annexure-1-2 of specifications for track ballast from RDSO Geo-Technical Engineering Directorate.
 - a. Aggregate abrasion value30% maximum.
 - b. Aggregate impact value20% maximum.
- b) The track ballast shall be procured confirming to specifications for Ballast-IRSGE-I (Jan 2004) issued by RDSO with amendments up to the date of opening of tender.

11.51 NS Item No. 51:- Installation of BG track with wider 60 kg PSC sleepers as per drawing no. RT-8527 and UIC 60 Kg (Grade 880), Industrial Use Rails as per methodology specified in Sub clause of the Technical Specifications of Tender Documents or any other methodology approved by the HRIDC in all locations e.g. straight, curves, bridges, level crossings, yards etc. including installation of SEJ and glued joints, initial packing, two rounds of through packing and picking-up of slacks as detailed in note ii below, pairing of new rail panels as directed by the Engineer.

Note:

- a) 50% of the rate shall be paid after placement of the sleepers, fastening, initial squaring, initial alignment (generally corrected by eye sight) and correcting sleepers spacing and kutcha packing.
- b) Next 20% of the rate shall be paid after initial and 1st manual/off-track tamper packing, lifting, levelling, aligning of the track and making fit for movement of moped trolley/motor trolley/material trolley/ballast lorry.
- c) Next 10% of the rate shall be paid after 2nd manual packing including picking up of slacks between 1st and 2nd packing and bringing the parameters within the prescribed tolerance limits to make track fit for 45 Kmph for working of track machines/material trains/wiring trains etc., and is certified so by the Engineer.
- d) Next 10% of the rate shall be paid after through rail renewal with new rail panel/free rail.
- e) Balance 10% of the rate shall be paid after picking up of slacks etc for making the fit for CRS inspection.

11.52 NS Item No. 52:- Installation of PSC fan shape turnouts, derailing switches 60 KG / 52 KG including lead rails as per RDSO layout drawings including katcha packing with bars or off track tampers for 20 KMPH speed. Activities of rail cutting, drilling of holes, welding of joints and transportation are not included in this item and shall be paid separately under relevant items as directed by the Engineer.

- a) Turnouts 1 in 8-1/2.

11.52.1 Site preparation for laying: -

- a) Ensure that a clean ballast cushion of 25/30 cm below the bottom of the sleeper is available. Position of SRJ should be clearly marked over ground with a rail post as per yard plan.
- b) The ballast bed has to be perfectly level. Any variation in level may affect the gauge adversely.
- c) Enough ballast shall be stacked along the cess to enable the filling of ballast in the cribs on the same day.
- d) Longitudinal and cross drains may be provided at turn out area to avoid accumulation of water.
- e) The site preparation to be completed well before laying turn out ensuring deep screening of ballast in turn out length and 30 m on either side along the track, in case turn out is to be inserted in existing running track.

11.52.2 Assembling: -

- a) Ensure the availability of all fittings at site strictly as per requirement of latest drawings for switch portion, lead and crossing portion.
- b) The complete turn out will be assembled on a level ground adjacent to the site of laying before start of the mega traffic block so that advance S & T works may be done.
- c) Red/blue rounded marking on the sleepers should invariably be kept on the right-hand side irrespective of left hand or right hand turn out.
- d) Spacing of sleepers should be strictly as per lay out drawing.
- e) The sleepers shall be perpendicular to the straight track in switch portion only.
- f) In lead portion, the sleepers will be inclined at half the angle between the normal to straight and curved track at that point. Proposed disposition is appended as Annexure- 14/1 to the IRPWM (Second reprint 2004).

Turnout	Switch	Lead	Crossing
1 in 8.5	1-13	14-41	42-54
1 in 12	1-20	21-64	65-83

- g) The spacing of the sleepers in the lead portion should be as per layout drawing to make a radial or fan shaped layout. The spacing has been worked out separately for both the rails. This separate spacing on two rails make the layout fan shaped in lead portion.
- h) The sleepers in the crossing portion shall be perpendicular to bisecting line of crossing.
- i) Sleeper no.3 & 4 may be placed for housing motor with the extended portion of the sleeper in the reverse direction only in circumstances where it cannot be avoided.
- j) The approach sleeper in advance of switch portion should be provided without fail, they are for gradual elimination of slope of rail top (1:20).
- k) The exit sleepers behind the crossing portion should also be provided for gradual introduction of rail slope (1:20).
- l) The track standards shall be as per IRPWM.

11.52.3 Insertion of Pre-assembled Turnout: -

The complete assembled turnout shall be inserted in position after breaking it into three panels viz. Switch, Lead and Crossing portions by means of cranes or rollers.

11.52.4 Manual Insertion: -

- a) In case the PSC turnout sleepers are to be manually inserted, then the same must be done sleeper by sleeper ensuring that at no time the alignment and level is beyond permissible limits. This work may be done under a suitable speed restriction if necessary and adequate mechanical means for packing the sleepers must also be available.
- b) The rate includes lubrication of joints, fixing rubber pad on PRC sleepers with adhesive and oiling of fish bolts with contractor material and labour complete.
- c) The rate includes carting and leading all points, crossings, and PRC/ wooden sleepers in yards. No lead shall be given for carting of sleepers in same yard.
- d) PRC sleepers, switches, crossings and turnouts shall be made available in respective station yards and shall be brought to position by contractor. Nothing extra shall be paid towards this.
- e) The contractor will link the points /switch assembly completely outside the track and get the same approved by the site Engineer wherever T/out are to be inserted under traffic condition. Wherever the points, T/out are to be linked / provided in mega traffic block, the sleepers will be spread in correct sequence at specified distances as per drawings near point of insertion in advance to be slide & linked at position during block.
- f) In case the PRC sleepers are supplied at a place other than the respective yards, payment shall be made for leading under relevant Item.

- g) Rate includes Jim- crowing drilling hole, cut, choppily etc. required for making the point assembly fit for S & T work.
- h) The contractor has to cut the rails, suitable for lead rails and necessary holes will be drilled. Chamfering of bolt holes shall also be done under this item as per procedure laid down in para 251 (5) of IRPWM (Second reprint 2004 corrected up to date) with contractor 's own chamfering kit, for which no extra payment will be made.
- i) Linking of points and crossing shall be within permissible tolerances as per IRPWM and other RDSO 's guidelines including providing glued joints/ block joints, stretcher bars, insulated gauge tie etc. Inserting/providing GJ 's shall be paid in relevant NS items.
- j) The laying of points and crossings will normally be done under no traffic condition in a new line construction project. Contractor shall make all arrangements for doing the work in given period of block.
- k) Switches of interlocked points shall be done in advance either in situ or on cess as per availability of space and the progress shall match with the program of S&T department for installing point motor etc.
- l) The rates include marking of off sets & inspection points with white/Black paint as per track manual/RDSO drawing, in case of non-marking of offsets/ reference points, for inspection by paint a sum of Rs.500/- per turn out will be recovered from the contractor.
- m) Joint behind back of crossing shall be made gapless for which hole of 26.5mm dia should be drilled and pitch of 83mm dial shall be maintained for first holes from rail end. If contractor fails to provide gapless joint, recovery at the rate of Rs.2,000/- per turn out shall be made.
- n) The rate will be inclusive of chipping/ cutting of stud bolt, stretcher bar bolt for proper setting of point.
- o) The switches laid out side shall be put into position after dismantling as per standard drawings.
- p) The contractor shall arrange for skilled blacksmith for setting & fitting of switch portion as per requirement of S&T department, if he does not do so, recovery of @Rs.2000.00 per turnout shall be made.

11.52.5 Mode of Payment:

- a) 75% of the accepted rates will be paid after laying of the sleepers in position and spaced at correct spacing, putting switch, crossing and rails over them and fastening them to the sleepers correctly.
- b) 20% payment of accepted rates will be made after lifting and packing of the track, gauging, aligning, realigning the turn in curve including boxing and dressing to bring the track to desired geometry as per satisfaction of Engineer in charge.
- c) Balance 5% of the accepted rates will be paid after track certification by CRS and attending to the track geometry defects, if any, pointed out by him.

11.53 NS Item No. 53: -Fabrication of Check rails of 60 KG rail sections for level crossings, curves, etc. on PSC sleepers including all fittings as per RDSO drawing. Rails will be issued free of cost by the employer.

- a) Linking of track of main line/ loop line and ballasting is to be paid under relevant item separately. This item includes fabrication of check rail as per approved drawing, its fixing etc. as per details specified in the item
- b) In station yards every tracks/ loop line shall be counted as separate level crossings.
- c) Wooden blocks to be fixed on the flare end at Level crossing on either side as directed by Engineer-in-charge or his representative for this no extra payment will be made to the contractor. Released Wooden sleepers for making these blocks shall be made available at PWI/Depot. No extra payment shall be made for leading the wooden sleepers to site of Level crossing.
- d) This item includes application of **two coats of anticorrosive paint** to the check rail and running rail in the level crossing portion with contractors own labour, material, plant and equipment.
- e) The rates are inclusive of restoration of road traffic after filling the central portion of track/tracks with ballast/Moorum.
- f) The rails for making check rails and bracket with complete fitting will be supplied by Railway free of cost from PWI/C/Store Depot & fittings will be carted at PWI/C/depot free of cost by contractor. However rails for check rails may also be supplied from respective station yard/ adjoining station yard depending upon availability and shall be carted to site by the contractor and payment will be made under relevant item.
- g) Item includes anti-corrosive treatment on check rail and running rails and nothing extra shall be paid on this account. If contractor fails to provide anti corrosive treatment, recovery at the rate of Rs.200/- per level crossing shall be made.

11.54 NS Item No. 54:- Leading of ballast stacked on the formation or on the cess upto 50m lead and putting it in track/formation, from measured stacks by contractor's own mechanical means such as JCB/Dozer or by manual means uniformly in following phases: (i) Laying of first layer to form level bed for sleepers with top surface dressed including mechanical compaction; (ii) Filling ballast in cribs and making up shoulders; and (iii) Recouping shortages after each packing and finally making profile as per IRPWM.

- a) Item shall be payable if the total lead involved is upto 50m.

Note:

1. Payment shall be by pre stack measurements.
2. The complete ballast from the measured stacks, ordered by Engineer for dumping in track, is to be put into track. The left over ballast after lifting by mechanical means shall be lifted manually and put in the track. If any quantity of ballast is not lifted after Engineer's directions, then the Engineer shall assess the quantity left over on the ground and recover the cost of supply of that much quantity of ballast and also deduct such quantity from the stack measurements

for payment under the item. The decision of Engineer regarding quantity of left over ballast shall be final and binding on the contractor.

3. The rates for item includes the cost of re-handling of ballast if any, required.

11.54.1 GENERAL:

- a) Generally the required quantity of ballast shall be available within a distance of 150m, measured along the centre line of the track on BG Rail Line. The contractor is required to lift the ballast from the ballast stacks, lead them to the proposed alignment of the track and spread it uniformly and subsequently to recoup the ballast including Dressing & Boxing to make standard B.G. ballast profile, as laid down in the IRPWM (Corrected up to date) and as directed by the Engineer in charge, after linking of the track with his own labour and T & P. The ballast toe line should be marked with lime on both sides).
- b) The work includes all lift, ascent / descent, crossing of drains and lead up to 150m, measured along the centre line of the track. Putting of ballast shall generally be under no traffic condition but some of the quantity may be required to be put after opening of the traffic, for which no extra payment shall be made under any circumstance, whatsoever the case may be. Excess ballast, if put in the track, has to be removed by the contractor at his own cost.
- c) At few of the locations, for some unavoidable reasons, if it is not possible to supply the ballast along the track, extra ballast for the same shall be available at some other location, may be in station yards or in mid sections. In such cases, when the lead exceeds 150m, extra payment shall be made under relevant NS item. The lead will be measured along the track. No lead will be payable for leading ballast for the distance at right angle to the track.
- d) Ballast from stacks shall be lifted only after the contractor is authorized to do so, in writing, by the authorized railway representative. Quantity of ballast for payment under this item shall be the quantity as recorded in MB for supply of ballast.
- e) The contractor will take all safety precautions while leading & spreading of ballast and doing dressing/ boxing or making ballast profile in running traffic condition.
- f) The contractor may have to lift only part quantity of ballast from one stack, for which the payment shall be done on lump sum basis as assessed by the Officer in charge and final payment shall be made only after the complete stack is lifted.
- g) Contractor shall take all safety precaution of running BG railway track and for man & material during the work. Railway shall not take any responsibility in such a case.
- h) The lead shall be measured by the shortest rail/road route from location of the stack to the point of destination.
- i) If the material gets lost / damaged during transit, recovery shall be made from the contractor. The rate of recovery for new material shall be twice the procurement price plus 7% freight charges along with 12½% supervision charges.

- j) Ballast from stacks will be lifted only after it is handed over specifically.
- k) The contractor will take all safety precautions while dumping/ spreading ballast into running track.
- l) Putting and spreading ballast will be done in stages as per requirement, excess ballast to be removed by the contractor at his own cost.
- m) Item includes spreading, dressing of ballast.

11.54.2 Payment Schedule: -

1. 75% proportionate payment against this item will be made on putting the ballast in track.
2. 25% payment against this item shall be made after boxing, dressing in required profile as per P. Way manual. In case contractor fails to complete boxing, dressing as per required profile, or Railways deploy ballast regulator for this work, recovery at the rate of Rs.30/- per running meter of track shall be made. Contractor shall deploy sufficient labour and T & P to achieve adequate progress of this activity, so that other connected activities may not suffer.

The complete ballast from the measured stacks, ordered by Engineer for dumping in track, is to be put into track. The left-over ballast after lifting by mechanical means shall be lifted manually and put in the track. If any quantity of ballast is not lifted after Engineer's directions, then the Engineer shall assess the quantity left over on the ground and recover the cost of supply of that much quantity of ballast and also deduct such quantity from the stack measurements for payment under the item. The decision of Engineer regarding quantity of left-over ballast shall be final and binding on the contractor.

11.55 NS Item No. 55:- Leading of ballast from measured stacks by means of contractor's own road lorry or/and rail wheel lorry that can run on BG track including loading, loading and unloading either by mechanical means or manually by contractor at required site and putting the same into track/formation in following phases: (i) Laying of first layer to form level bed for sleepers with top surface dressed including mechanical compaction; (ii) Filling ballast in cribs and making up shoulders; and (iii) Recouping shortages after each packing and finally making profile as per IRPWM (All labour, lorry, fuel, consumables etc. by contractor).

- (a) Total Lead exceeding 50 m but up to 5.00km.
- (b) Item shall be payable if the total lead involved is upto 50m.

Note:

1. Payment by pre stack measurements.
2. The complete ballast from the measured stacks, ordered by the Engineer for dumping in track, is to be put into track. The left-over ballast after lifting by mechanical means shall be lifted manually and put in the track. If any quantity of ballast is not lifted after Engineer's directions, then the Engineer shall assess the quantity left over on the ground and recover the cost of supply of that much quantity of ballast and also deduct such quantity from the stack measurements

for payment under the item. The decision of Engineer regarding quantity of left-over ballast shall be final and binding on the contractor.

3. The rates for item include the cost of re-handling of ballast if any, required.

11.55.1 GENERAL:

- a) Generally the required quantity of ballast shall be available within a distance of 150m, measured along the centre line of the track on BG Rail Line. The contractor is required to lift the ballast from the ballast stacks, lead them to the proposed alignment of the track and spread it uniformly and subsequently to recoup the ballast including Dressing & Boxing to make standard B.G. ballast profile, as laid down in the IRPWM (Corrected up to date) and as directed by the Engineer in charge, after linking of the track with his own labour and T & P. The ballast toe line should be marked with lime on both sides).
- b) The work includes all lift, ascent / descent, crossing of drains and lead up to 150m, measured along the centre line of the track. Putting of ballast shall generally be under no traffic condition but some of the quantity may be required to be put after opening of the traffic, for which no extra payment shall be made under any circumstance, whatsoever the case may be. Excess ballast, if put in the track, has to be removed by the contractor at his own cost.
- c) At few of the locations, for some unavoidable reasons, if it is not possible to supply the ballast along the track, extra ballast for the same shall be available at some other location, may be in station yards or in mid sections. In such cases, when the lead exceeds 150m, extra payment shall be made under relevant NS item. The lead will be measured along the track. No lead will be payable for leading ballast for the distance at right angle to the track.
- d) Ballast from stacks shall be lifted only after the contractor is authorized to do so, in writing, by the authorized railway representative. Quantity of ballast for payment under this item shall be the quantity as recorded in MB for supply of ballast.
- e) The contractor will take all safety precautions while leading & spreading of ballast and doing dressing/ boxing or making ballast profile in running traffic condition.
- f) The contractor may have to lift only part quantity of ballast from one stack, for which the payment shall be done on lump sum basis as assessed by the Officer in charge and final payment shall be made only after the complete stack is lifted.
- g) Contractor shall take all safety precaution of running BG railway track and for man & material during the work. Railway shall not take any responsibility in such a case.
- h) The lead shall be measured by the shortest rail/road route from location of the stack to the point of destination.
- i) If the material gets lost / damaged during transit, recovery shall be made from the contractor. The rate of recovery for new material shall be twice the procurement price plus 7% freight charges along with 12½% supervision charges.

- j) Ballast from stacks will be lifted only after it is handed over specifically.
- k) The contractor will take all safety precautions while dumping/ spreading ballast into running track.
- l) Putting and spreading ballast will be done in stages as per requirement, excess ballast to be removed by the contractor at his own cost.
- m) Item includes spreading, dressing of ballast.

11.55.2 Payment Schedule:-

1. 75% proportionate payment against this item will be made on putting the ballast in track.
2. 25% payment against this item shall be made after boxing, dressing in required profile as per P. Way manual. In case contractor fails to complete boxing, dressing as per required profile, or Railways deploy ballast regulator for this work, recovery at the rate of Rs.30/- per running meter of track shall be made. Contractor shall deploy sufficient labour and T & P to achieve adequate progress of this activity, so that other connected activities may not suffer.
3. Total Lead exceeding 50 m but up to 5km.

11.56 NS Item No. 56: - Fabricating of in situ Glued Insulated Rail Joints G3 (L) type as per RDSO drawing no. T-2572 for broad gauge 60 Kg rail section as per MANUAL FOR GLUED INSULATED RAIL JOINTS (Revised 1998) with latest amendments including contractor's labour, materials, loading, unloading and transportation, rail cutting, cleaning of ends, drilling of holes in rails, hole chamfering etc. complete. The work will be executed in running lines during block period as per directions of Engineer in charge at site.

Note:

- a) 90% payment shall be made on fabrication of joint and its passing of dimensional and insulation resistance tests. Balance 10% payment shall be released after passing of Pull-Out test for the lot.
- b) The contractor shall get the above work executed through agencies/vendors approved by RDSO for manufacture and supply of glued insulated rail joints.
- c) The input materials shall be procured from RDSO approved suppliers only.
- d) Dimensional accuracy and insulation resistance of each of the fabricated in situ glued joint shall be tested in order to ensure that it is conforming to the Manual.
- e) Pull Out test for at least one glued joint from every 50 nos. of glued joints shall be carried out in lab as detailed in manual of glued joint. No payment shall be made for transportation from site of work to lab, testing of joint and bringing back the rails after dismantling of tested joint.

- f) The defect liability period for the glued joint shall be 90 days from date of in situ fabrication and the contractor has to attend/repair the glued joint in case any defect arises during the defect liability period.

11.56.1 Specification:-

1. The work may or may not require traffic blocks. The progress of work may hamper in case sufficient traffic blocks of required block period not granted by the operating department. However, Railway shall not be responsible for non availability of such traffic block.
2. The contractor has to make his own arrangement for fabrication, insulation etc complete of required "INSITU" glued joints on run through/ non running lines. He shall also take necessary precautions for safety railway track as well as his staff, tools and equipments etc complete. Railway shall not be responsible for any mishap etc.
3. The contractor shall arrange his own arrangements for transportation of material, tools, plants, manpower etc. required for execution of work as per direction of the engineer in charge at site. All the material, fittings & accessories issued by the Railways shall be transport the same free of cost to site of work and after completion of work released/unused material shall be deposited in the store of Executive/HRIDC or as per direction of Engineer-in-charge.
4. This item includes all activities such as cutting, drilling, etc required for execution of work and nothing extra shall be paid on this account.
5. The rate includes all material such as fish plates, HTS bolts/ nuts, Punch washer, Insulated bushes, Insulated channels, 10mm thick end posts, glue, hardener etc and nothing extra shall be paid on this account.
6. All general condition of contract, specifications (up to date corrected) shall also be binding upon the contract for work.
7. Long fish plate required for fabrication of G-3(L) type glued joints, HTC bolts, fiber glass cloth and glue shall be purchased from RDSO approved firms only and necessary inspections required as per the manual for glued insulated joints by Engineer-in-charge/HRIDC, if required, shall be arrange by contractor at his own cost.
8. Contractor shall make all the arrangements for required all the tests at site as well as in laboratories, nothing extra shall be paid on this account and for inspection charges of Engineer-in-charge/HRIDC inspection for fittings, accessories etc, will be born by the contractor. However authority, to conduct the tests on glued joint 52 Kg & 60Kg shall be as mentioned below:-

S. No.	Description of Material	Authority of tests done
1.	Long Fish Plates	HRIDC
2.	H.T.S. bolts & nuts	HRIDC
3.	Glue	HRIDC
4.	Glass cloth	HRIDC

9. The inspection charges of finished glued joint, if required by HRIDC, will be borne by the HRIDC.
10. The cost of the glued joints required for pullout & other strength tests will be paid by contractor. However, the scrap generated including long fish plate will be deposited by contractor in the store of site engineer and will be the property of the HRIDC.
11. (a) The H.T.S Bolts & Nuts shall conform to IS: 1363 & IS: 1367.
(b) Punched Washer shall conform to IS: 2062.
(c) Glass cloth carrier should conform to IS: 11273 of 1992.
12. (a) The Epoxy Resin to be used shall only be those manufactured by one of the following firms or any other brand approved by RDSO:-
 - (i) Hardener HY 556 - M/S. CIBA GEIGY.
 - (ii) EPL 306 - M/S. SIP Industries.
 - (iii) Lapox L-12 - M/S. CIBATUL.
(b) The Hardener to be used shall only be those manufactured by one of the following firms or any other brand approved by RDSO:-
 - i. Hardener HY 951 - M/S. CIBA GEIGY.
 - ii. Hardener EH 301 - M/S. SIP Industries.
 - iii. Lapox K-6 - M/S. CIBATUL.
13. Both ends of the joints should be made by cutting the Rail as far as possible.
14. Grinding of Rail to a length of 50cms or either end should be done with a suitable grinder and it must be ensured that no rolling mark, rust, dust, dents are remaining in contact area with the fish plate.
15. Both the long fish plates shall be ground to make the surface free from dust, dents, grease, etc.
16. The Rail ends shall be aligned laterally and vertically with the straight edge with the help of suitable wedges. After aligned, no hammering/disturbance to ends should be done.
17. H.T.S. Bolts, washers and nuts well cleaned and free from oil, dust etc. shall be placed in position and tightened with torque wrench. The torque shall be increased gradually on all the bolts. Care shall be taken to tighten inner bolts first and then outer bolts. Finally all the bolts shall be tightened with the torque of 105 Kg-m.
18. The joints shall be finished by covering all the visible edges of glass cloth carrier with glue.
19. After setting of the glue, the P-Way fittings on 2m on either side of the joints should be properly re-fixed.
20. Megger Test to check insulation of fabricated glued joints must be done joints with Engineer-in-charge/HRIDC. Payment for a fabricated glued joint will be made only after the same is certified fir during this joint inspection.

21. A tube of Betnovet ointment should be kept at site and any splash of resin on the body should be removed with one soapy water and the ointment applied.
22. Rail jumpers must be used in electrified areas for return current.
23. Smoking while fabrication/installation shall be prohibited.
24. A set of fire extinguisher should be ready for use.

11.57 NS Item No. 57 : -Cutting of 60 KG rails with contractor's Abrasive Disc Cutter complete including men, material, fuel etc. true to square.

Note: The item includes cutting of all types of rails including 60/52kg 90 UTS/ 72 UTS and 90R rails with mechanically or electrically operated rail cutting machine using hacksaw blades or abrasive rail cutting machine with contractor's own labour, T & P and consumables. Cut shall be square & within specified tolerance in both vertical and horizontal directions. Cut, which is out of square, will not be paid, recovery of cost of rail will be done if rails waste. The item also includes sorting of rails from stacks. The cutting of rail shall be done as per direction of Engineer in charge or his representative. The contractor shall maintain complete record of the total number of cuts done on each day and get it certified from the Executive Engineer/HRIDC on day-to-day basis. Unnecessary cutting of rails will not be permitted. For each avoidable/-undesired cut, recovery at the rate of double the rate payable for the cut shall be made. Cut section/ scrap shall be deposited to Executive Engineer/HRIDC at nominated scrap depot or as directed by Engineer -in-charge or his representative. Since linking of SEJ, glued joint, points & crossing, etc. include necessary cutting of rails under the respective item, no payment under this item shall be made therefore. Wherever cutting is included in the respective item itself, no extra payment will be made against this item. This item may be paid for cutting of SH rails to remove welded ends etc.

11.58 NS Item No. 58 : - Drilling 26.5 MM, 32 MM diameter holes with Rail Drilling Machine in web of 60 KG, 52 KG, 90 R rails in track or on cess at correct locations including chamfering.

Note: The work includes drilling of holes of 31.75/26.5 mm or any other dia holes in all types of rails including 60kg/52Kg 90 UTS/ 72 UTS and 90R new / SH rails with contractor's own tools, plants, equipment, labour etc. The drilling shall be done **correctly as per template** for standard fish plated joints of corresponding rail sections Chamfering of bolt holes shall also be done under this item as per procedure laid down in para 251 (5) of IRPWM (Second reprint 2004 corrected up to date) with contractor's own chamfering kit, for which no extra payment will be made. **70% payment shall be made after correct drilling; balance 30% payment shall be made after correct chamfering. Any hole made at incorrect distance will not be paid for.** Such rails shall be cut and holes drilled again. No extra payment will be made for the same. **Recovery of Rs.60/- shall be made for each incorrect drilled hole** also recovery of cost of rail will be done if rails waste The drilling of holes will be done as per requirement of track linking as directed by Engineer or his representative. The drilling of new rails is not permitted unless specifically directed by Engineer in charge or his representative.

11.59 NS Item No. 59: - First and second manual through packing of points and crossing including gauging, fittings recouplement, elimination of sag and to the required alignment as per provisions of Indian Railways Permanent Way Manual for raising the speed from 20 kmph to 45 kmph.

NOTE:

1. The rate includes 1st through packing on 2nd day after relaying on Day 1 (laying of turnout will be paid separately under relevant item of BOQ), 2nd through packing on 3rd day and picking up of slacks, as required, from 4th to 9th day.
2. in 8-1/2 Points & Crossing.

Note:1)The scope of work under this item includes one rounds of through packing including picking up of slacks in the newly laid track with PSC sleepers as per Para 224 and 1408 of IRPWM (Second reprint 2004, amended up to date) so as to make the track fit for the speed of 30Kmph. The contractor shall arrange adequate labour and T&P, which include non-infringing track jacks of 8/10 Ton capacity etc. in such a way that the packing work is completed well within the laid down time schedule or as desired by the Engineer-in- charge.

2) Through packing of the track shall be done for Main Line, Loop Lines, Sidings, Turn Outs, Derailing Switches, and track at Level Crossings, SEJs, Glued Joints and track over ballasted deck bridges. Nothing extra will be paid for the packing of the special lay outs except that the turn outs shall be paid in equivalent length of plain track of 120m for 1 in 12 turn out, 100m for 1 in 8.5 turn out and 20m for derailing switches.

3) If even after making one rounds of through packing desired track standards are not achieved, the contractor will have to arrange for additional rounds of packing for which nothing extra will be paid, whatsoever the case may be

11.60 NS Item No. 60: - De-stressing of LWR/CWR track with 60 KG rails at appropriate rail temperature as per LWR manual and as per directions of the engineer including adjustment of gap at SEJ, squaring & correct spacing of sleepers disturbed during the work, including greasing of ERC as per IRPWM. Payment for cutting of rails shall be made separately under relevant item.

11.60.1 General :

The work of de-stressing shall be done under the personal supervision of a PWI. The de-stressing may be done **with rail tensor or as per conventional method** as decided by Engineer in charge.

Sequence of operations:

The procedure to be adapted for de-stressing with Rail tensor is as follows consists of the following steps:

- i. Remove impediments to free movement of rail such as rail anchors, guard rails, check rails etc.
- ii. Create gap of about 1metre at the centre of LWR during a traffic block and insert a closure rail there, at a restricted speed.

- iii. Mark anchor lengths at either end of the proposed LWR in accordance with para 1.15 of the manual.

Notes:-

- a) Anchor length shall be determined on the basis of the fewest value of t_p at which distressing is likely to be carried out.
- b) Anchor length shall be increased suitably if the fastenings, rubber' pads, liners or ballast conditions are poor.
- iv. Erect marker pillars at the ends of anchor lengths on either side and at 100 metre intervals thereafter.
- v. Obtain a traffic block when t_p is less than the desired installation temperature (t_o), remove the closure rail at the centre and unfasten the full length of rails leaving only the anchor lengths at either end. Mount the rails on the rollers.

Notes:-

Side rollers shall also be used while under taking distressing on curved track. Side supports on the inside of curve should be spaced at every n th sleeper

$$\frac{\text{Radius of curve (R)} \times \text{No. of sleepers per rail length}}{50 \times (t_o - t_p)}$$

Where n = Outside supports shall be used in addition at the rate of one for every three inside supports.

- vi. Fix rail tensor across the gap at the centre and apply tension so as to get the required amount of extension as provided in Extension Table (Para 5.7.2 & 5.7.3) & Annexure –VII.
- vii. Re-fasten the rails starting from the anchor lengths at either end after removing the rollers progressively and adjusting tension at the rail tensor to make sure that the required extension has been achieved at each marker pillar.
- viii. Put paint marks on either side of the gap at the centre, spanning over the gap at a distance of 6.5metre. Insert a closure rail of a length equal to (6.5 metre - 2 gaps for welding +1 mm for saw cut ends).
- ix. Release and remove the rail tensor.
- x. During another traffic block, weld both the joints of the closure rail at the centre.
- xi. Equalize stress at the centre and at the anchor lengths.

11.61 NS Item No. 61: - Flash butt welding of 60 KG rails and panels, as per manual for flash butt welding of rails 1996, in track or outside track, in depot or in mid-section for making panels including removing and refixing the fittings, creating required gap by pulling the rails, handling of rails. Ultrasonic testing of welded joints shall be paid separately.

Note:

The payment for the item shall be made in the following stages:

- i. 70% payment on completion of welding of joint
- ii. 20% payment on completing of grinding of joint
- iii. 10% payment on completion of USFD test

(a) **Scope of work can further be briefed as under:-**

- i. Welding of 52/60Kg rails joint by Mobile Flash Butt Welding Plant at depot/site, insitu/cess.
- ii. Welding of free rails/3 rail/panel/10 rail panel/20 rail panel with continuous welded rails at one end.
- iii. All qualified technical manpower, labour, tools & plants, computer; stationary etc. required for carrying out the above work shall be arranged by the contractor at his own cost.
- iv. Contractor shall make his own arrangements for mode of transport, approach roads to the site, adequate supply of water/electricity required for the work at his own cost. No extra payment will be paid on this account

(b) **DEFINATIONS**

The following special conditions shall apply to the contractor for the Flash butt welding of 52/60 kg rails 72/90 UTS by Mobile Flash Butt Welding Plants (Rail cum Road bound). Where they differ from the General conditions, the special conditions shall override the General conditions.

- i. The term “work” means all the work specified or set forth and required in and by the said specifications, drawings and “Schedule of Quantities”, hereto annexed or to be implied there from or incidental there to or to be hereafter specified or required insuch explanatory instructions and drawings (being in conformity with the said original specification(s), drawings, and “Schedule of Quantities” and also in such additional instructions and drawings not being in conformity as aforesaid, shall from time to time, during the progress of the work hereby contracted for as are supplied by the purchaser.
- ii. The term “Test” shall mean such test or tests as prescribed by the specifications(s) to be made by the Railway Administration, or his nominee during inspection.

(c) **PERFORMANCE OF WORK**

The work shall be performed at the place or places specified in the tender or at such other place or places as may be approved by the Railway Administration.

(d) **RATES FOR ITEMS OF WORK:**

- i. Tenderer/s will quote his/their rates after full inspection of site and site conditions made known to him/them
- ii. The rates quoted by the tenderer/s shall be deemed to include work necessary for setting out of works in the different phases as ordered by the engineer’s representative.

(e) **GENERAL:**

- i. These instructions are laid down for execution of flash butt welding work at site by a robust and sturdy mobile self propelled Flash Butt Welding plant(Rail cum Road bound) (hereafter called the MFBWP), which should be suitable for aligning & welding of rails joints and shearing upset welding metal to produce long welded rails and capable of substantially high output under different situations, as laid down in the specifications.

- ii. **Photographs of the type of MFBWP offered in working mode shall be enclosed with the offer. This shall also show close-ups of various working assemblies/systems and the full MFBWP.**
- iii. The MFBWP shall be kept ready to commission the work within 15 (Fifteen) days from the date of issue of acceptance letter.
- iv. This specification covers detailed requirement for contract for MFBW of rails using Rail cum road bound MFBWP.

(f) DIMENSIONAL AND OPERATING REQUIREMENTS.

- i. The profile of the complete system longitudinally and in cross section during transfer toward in train formation of self propelled or during working shall be within the Indian Railways Standard metric BG schedule of Dimensions – 2004 (Reprint) corrected up-to-date. This maximum moving dimension is as per standard specification. The bidder shall ensure that the MFBWP does not cause infringement while moving on curve up to **10° (ten degree)** at any cross section.
- ii. Adequate clearance shall be allowed so that no component infringes the minimum clearance of 102 mm (One Hundred and Two) from rail level while travelling.
- iii. MFBWP shall be capable of continuous operation during the varying atmospheric and climatic conditions occurring throughout the year in India.
- iv. Fuel tank capacity/ consumable storage capacity shall be adequate for travelling of long distances/ working as the case may be.
- v. It shall be capable of working without requiring power block in electrified section **25 KVA** current is used for traction through an overhead wire at **5.5mm** above rail level. On bridges and tunnels, the height is restricted to **4.8m**.
- vi. While working on double line sections, it shall not infringe the adjoining track and it shall be possible to permit trains at full speed on that track. Minimum spacing of track is 4.725m.

11.62 NS Item No. 62:- USFD testing of 60 KG rail welds (Flash Butt / SKV) as per RDSO Manuals and submitting reports on proforma as directed by the Engineer.

- (i) USFD testing will be carried out by railway with their own machine along with contractors representative.
- (ii) A comprehensive register in the Performa prescribed in Annexure -5 of “Manual for fusion welding of rails by SKV Alumino Thermit process – 1998” shall be prepared & maintained by the contractor and hand it over to the Railway representative wherein the records of acceptance test including USFD tests as prescribed in the specifications shall be kept. The record shall be jointly signed by the contractor and the Railway representative.

- (iii) Any scrap material generated by contractor from his own material can be collected by contractor like used polythene bags, packing case, cotton used and un-used equipment, used and un-used rail files and scrap metal (chipping metal) but any rail pieces generated due to cropping of rail joints will be the property of railway.
- (iv) Regarding employment of civil/ graduate Engineers/ diploma holders by contractors for railway work. Agency has to provide welding supervisor at site duly approved by the RDSO.

11.62.1 TRACEABILITY OF WELDS:-

i) MARKING: - Each joint shall have a distinctive mark indicating month, year of welding, agency and welder/supervisor identification code number (as appearing on his competency certificate) at non-gauge face side of AT weld on head as given below:-

Figure: Location of marking on non-gauge face of welds.

MM YY

Month Last two digits of year

Identification code A A B B B C C C

Where:AA: Code number for the agency to which the welder/supervisor belongs i.e. 00 for AT portion manufacturing firms.

01 for departmental welders

02-99 for welders of welding contractors. The codes shall be allotted for different contractual agencies undertaking AT welding of rails (other than portion manufacturers) B B B- Specific person number (from 001 to 999) The specific person number will be continuous for a Zonal Railway/Firm. M M Y Y: Month Last two digits of year.

C- For welders/supervisors of Zonal Railways: First two/three initials of the Railway to which the supervisor or welder belongs or For welders/supervisors of portion manufacturing firms and welding contractors: Code allotted for the portion manufacturing firms, for whom welders/supervisors of portion manufacturing firms and welding contractors are approved.

Alphabetic codes allotted to the portion manufacturing firms are given below: -

ITC=T, HTI=H, QTPL=O, STI=S, RMPL=R, IFA=F, TPP (NR)=N

In case of welders belonging to the welding contractors, this code will signify the portion-manufacturing firm for which the competency certificate of welder is valid. The marking should be embossed on the non-gauge face side of AT weld by punching after finishing of the weld in letters/digits of 6mm height located as indicated in Figure. In addition to this, alphabetic code allotted to portion manufacturing firm as per a) above e.g. T.H.N etc. and year of manufacture (last two digits of the year) shall also be embossed on the mould to appear on web collar.

For example, 01001NWR would indicate a departmental welder/supervisor of North Western Railway with specific person number 001. Similarly, 0000IT would indicate a welder/supervisor with specific person no. 001 of portion manufacturer whose code is “T” i.e. ITC, 02001H would indicate a welder, belonging to welding contractor whose code is 02, having specific person number of 001 and having competency for welding with portion/technique of portion manufacturing firm with code “H”.

- ii. All welds shall be painted by the contractor using paint to specification No. IS-9862-1981 or bituminous emulsion to IRS-P-30 Gr. I or equivalent as accepted by the Railways & specified in the procedure for painting of weld collars of Thermit welded joints as per relevant codes and specifications.

11.62.2 Guarantee period for satisfactory performance

- i. Relevant clause of IRS T-19-1994 and “Manual for fusion welding of rails by SKV Alumino Thermit process – 1998” with latest amendments issued till the date of opening of tender pertaining to execution guarantee and acceptance test shall be strictly followed.
- ii. Rail joints welded by a firm shall be guarantee against failure for a period of two years from the date of welding the joints in track or from the date such welded joints made in case are inserted in the track. Any such welded joints which is found defective or fails within the guarantee period shall be re-welded free of cost by the contractor using their portion, labour, consumable and equipments.
- iii. In case of failure of sample test joint the period of guarantee for 100 joints represented by the sample joint shall be extended for a further period of one year. In case of failure of joints or joint exhibiting signs of failure by cracking within extended period of guarantee, the joints shall be re-welded free of cost by the contractor.
- iv. The welded joints with extended period of guarantee shall be marked ‘X’ by the contractor with Yellow paint on the outer side of web of the rail near joint **in addition to marking prescribed in guideline of manual for fusion welding of rails by the AT process – 1988**. Such marked joints shall be kept under careful observation.
- v. No payment shall be made for sample welds to the contractor. However, 2m long rail piece required for sample weld shall be given free of cost on every 1000 joints ordered. Transportation of the same to railway approved laboratory/ RDSO is to be arranged by contractor at his own cost. In case testing is done in railways laboratory, test rail pieces need not be returned to railway. However, in case the testing is done outside railway premises the scrap rails will be returned by the contractor otherwise recovery will be affected @ Rs.70.00 per Kg. If the sample weld fails to comply with the criteria as laid down in para-7 of welding manual -1998 (with latest correction slips), two more sample weld will be tested from the same batch and the both sample welds shall be passed otherwise all the 100 welds represented by the sample weld shall also stand rejected.

- vi. After the defect is noticed within the guarantee period, the railway shall promptly notify the contractor and upon receipt of such notice the contractor shall replace the defective weld with one / two new welds free of cost at the earliest. If the contractor having been notified fails to rectify the defect within a period of 15 days, the railway may proceed to recovery, for every joint failing during the guarantee period, 3times the cost of welding as paid to contractor.
- vii. The maximum percentage of defective welds should not exceed **2% of total number** of joints welded. For on account payment, the defective percentage will be calculated for a group of 500 welds or part thereof. All the welds found to be defective as per acceptance test, as given in Para 6.4 of welding manual shall be cut and re-welded by the firm free of cost. Where one bad joint is required to be replaced by two new joints, the entire cost of both the new joints shall be born by the firm. All the re-welded jointsshould meet the acceptance test. In case the numbers of defective / failed- welded joints exceed 2%, they shall be re-welded by the contractor free of cost and a recovery shall be made from the contractor's **bill @ Rs. 1000/-per joint** towards the cost of supervision and wastage of the rail. In case the number of welded joints failing during the guarantee period exceeds 2%, the railway administration will reserve the right to terminate/ suspend the contractor's welder/s and to realize the cost of damage/ loss caused by such failures. In case the welder is suspended, the contractor shall be allowed to restart the work only after he gets his welding technique revalidated from RDSO–Lucknow. Till fresh certification is issued welder will not be allowed to do any work.
- viii. Rails required for elimination of defective welds will be supplied by railway free of cost in the same yard/ block section. However, this will have to be transported by contractor to the required site from Executive/HRID nominated store at his own cost.
- ix. All cuts required for replacement of defective joints is to be made by contractor at his own cost.
- x. On every day after completion of welding work, welding team will collect all released fish plates, fish bolts and cut rail pieces (Within 6.00mtr.) and lead from site to nearest Railway station by his own means and labour and handed over to site in charge or his representative with clear acknowledgement.
- xi. After completion of welding work and tightening of fitting & fastenings, 6 sleepers of joints should be thoroughly packed with correction of X-level, gauging, boxing, dressing of ballast on joint sleepers at his own cost as the rates are inclusive of the same.
- xii. If mould box clamp space between joint sleepers is not available, joint sleepers should be shifted either side to create required space and required welding gap shall be obtained by pulling or cutting end of rails, opening of fittings & fastenings of rails.
- xiii. The contractor will be allowed to do the welding of defective weld by wider gap technology to reduce the wastage of rail and population of SKV welds at site.

- xiv. Contractor will maintain batch wise & welder wise data of each weld at site, so that any deficiency in a particular batch or portion or welder can be identified and suitable action can be taken in consultation with RDSO. Numbering of SKV weld at site shall be done to correlate a particular weld with a particular weld with a particular batch of portion and welder.
- xv. Rails required for elimination of defective welds will be supplied by railway free of cost in the same yard/block section. However, this will have to be transported by contractor to the required site at his own cost.

11.62.3 Payment schedule for welding work:

- a) 90% payment will be made after completion of welding, grinding, finishing of welding joints to the specified tolerances and marking it as per specifications.
- b) 5% payment will be made after weld numbering as per specifications and after successful USFD testing of the joint.
- c) 5% payment will be made after painting of joints as per special conditions.

11.63 NS Item No. 63:- Alumino thermit welding of 60kg rail joints or combination joints of 60kg/52kg rail by pre-heat (SKV) welding technique using compressed air petrol/LPG for preheating, three piece pre-fabricated moulds (Zircon washed) single shot crucible fitted with automatic tapping thimbles with all labour, materials including supply of portion, tools and plants, aligning of rails, placing & fixing of mould, preheating, welding, mechanised trimming, grinding with profile grinder (including riser), testing, marking, painting with one coat of high build epoxy paint (two pack conforming to RDSO specification no. M&C/PCN-111/88) on the welded area up to 10 cm on either side. The work is to be completed in all respects as per IRS: T-19-2012 with latest updates and in accordance with "RDSO Manual for Fusion Welding of Rails by Alumino Thermic Process with up-to-date correction Slips in free rails or 3/10/20 rail panels. The work to be done under supervision of trained welding supervisor and carried out by trained welder having valid competency certificate from RDSO/TPP, Lucknow. Ultrasonic testing of welded joints shall be paid separately under relevant items.

Note:

- a) In case only portion is supplied by the contractor but welding is not done, the rate shall be payable @ 60% of the item rate.
- b) In case welding portion is supplied free of cost by the Employer, the rate shall be payable @ 40% of the item rate.
- c) The above provision in note (1) & (2) shall be operated with the specific approval of CPM/HRIDC.

11.63.1 SCOPE OF WORK

- i) The scope of work consists of A.T. welding of 60kg./52kg 90 UTS new/SH rails in Main Line, Points & crossing, SEJs, Glued Joints, bridges & 52 Kg (72 UTS/90UTS) new/ SH rails in loop line, on cess/ in situ under no traffic/running traffic condition, with Railway Thermit portions, pre fabricated moulds and Contractor's other

- consumables and T & P, as directed by the Engineer in charge or his representatives.
- ii) The works shall conform to IRS specifications No. T-19-1994 & “Manual for fusion welding of rails by SKV AluminoThermit process-Revised 2012” with latest correction slips/ addendum/corrigendum issued till the date of opening of tender. Only RDSO certified supervisor and welders shall be permitted to carry out the work.
 - iii) The work of Thermit welding of rail joints shall be generally done either outside the track on the cess or in situ under no traffic conditions but a part of the work may be required to be executed under traffic condition, for which adequate traffic block shall be arranged by the HRIDC. Extra payment, as detailed in the tender schedule, shall be made for the work done under traffic conditions. The rails required for welding will be either laid in track or supplied on cess/ toe of the bank, along the alignment of the proposed track.
 - iv) The distribution of the work between cess and situ will be as per the site condition and HRIDC's requirement. The Contractor shall have no claim on this account. However for work under traffic condition, extra payment shall be made as detailed in the tender schedule.
 - v) Welding is to be done for conversion of free rails in to 3/5/10 rail panels and 3/5/10 rail panels to LWR as well as at scattered locations such as for insertion of SEJs, Glued joints, Points & Xings, Rail closures etc.
 - vi) The scope of work includes supply of consumable items, entire welding equipment and T&P such as generator, Weld trimmer, Profile Grinder of approved quality along with grinding stone/ files as required, all the raw material, skilled/ unskilled labour, welder, supervisor, adjustment of welding gap, putting rails on wooden block/gutkas/ wedges in case of cess welding and doing the welding work by the RDSO approved welders and supervisors of the Contractor as a complete job including all stores, lead, lift, ascent, descent, crossing of nallahs/ track etc.
 - vii) Transportation of men & material viz. thermit welding equipment, tools & plants, portions, mould etc. required for welding and transportation of released P. Way material will be the responsibility of Contractor for which no extra payment will be made as the rates are all inclusive for the finished work.
 - viii) Sale Tax, octroi, royalty, toll Tax or any other tax/ taxes levied by the Central or State Govt or Local Bodies shall be borne by the Contractor. No part of such taxes on Contractor's labour/ materials or any other amount will be paid by the HRIDC.
 - ix) Contractor shall carryout the work between Sunrise to Sunset unless otherwise permitted by site in charge. Adequate lightning arrangements are to be made by the Contractor at his own cost in case welding is executed after sunset to make up the shortfall in the required progress of work. No extra payment shall be made for the purpose, whatsoever the case may be.
 - x) Contractor should make his own arrangement to protect the work & work site against rail traffic, wind and weather during the execution of the work.
 - xi) Contractor shall organize the work at a sufficient number of locations with adequate plants and equipment so as to obtain the required progress of welding per day. The welding work shall be carried out by the self-contained units at each location so that all types of work concerning each location i.e. lifting, levelling, aligning, packing,

moulding, welding, chipping, grinding and final finishing shall be done by the same party.

The supervisors as well as welders must be trained and certified by RDSO/ Lucknow to execute the welding work. The Contractor is required to submit, to the HRIDC, attested photocopies of competency certificates, issued to his supervisors/ welders by RDSO, well before taking up the work. It will be the responsibility of the Contractor's supervisor to fill up the checklist and get it certified from the HRIDC representative, before executing the weld.

- xii) Suitable temporary accommodation for storage of the Contractor's plant, tools, portions, pre-fab moulds and consumable storage shall be arranged by Contractor at his own cost. However if the same is available with the HRIDC, it can be utilized by the Contractor at free of cost.
- xiii) The Contractor shall provide to each welding party metallic straight edges of 1 m and 10 cm length, one set of feeler gauge in units of 0.1mm to 2mm & stopwatch.
- xiv) For welding a panel longer than 5 rails or for welding in falling temperature, adequate care to be taken to obtain/ maintain requisite gap with Contractor's own labour, T & P and consumables etc; for which no extra payment shall be made.
- xv) On every day after completion of welding work, welding team will collect all released fish plates, fish bolts and cut rail pieces (up to 6.00 m length) and lead from site to nearest Railways station by his own means and labour and hand over to site in charge or his representative under clear acknowledgement.
- xvi) Generally, the work shall be done under no traffic condition but a part of the work may be required to be executed under traffic condition, for which all out efforts will be made to arrange adequate traffic block. The Contractor shall have no claim on the HRIDC even if adequate traffic block/ caution order is not available on some day/ days for any reason. However, appropriate extension of time of completion on this account will be given by the HRIDC, if necessary.
- xvii) Whenever the work is required to be done under traffic condition, it should be done without any hindrance to the train operations. The Contractor is required to follow the safety rules and to coordinate with the concerned HRIDC authorities for smooth execution of work. Contractor will have to remove all material from the site simultaneously to avoid any hindrance in the working of yard and inconvenience to traveling public.
- xviii) The Contractor shall not directly or indirectly use any invention which for the time being is the subject of patent and should not infringe any such patent, so as to involve the HRIDC in any infringement thereof. The Contractor shall hold harmless and keep the HRIDC indemnified against all cost, damages, charges and expenses arising out of and in connection with any such infringement.
- xix) Wooden blocks /gutkas for the welding on cassis to be arranged by Contractor at his own cost. If requested by Contractor & available with HRIDC, the Scrap/ SH wooden sleepers will be supplied by HRIDC from the available location and shall be carted/ transported to site of work and cut into pieces to make wooden blocks/ gutkas at Contractor's own cost. Recovery for wooden sleepers shall be done at the rate of Rs.5/- per Kg. HRIDC however do not guarantee supply of the scrap/ SH wooden sleepers and Contractor shall have no claim on this account.

11.63.2 Activities involved in welding of joints

- i) Contractor shall remove all kinks and twists in the rails within 2.0m at ends by mechanical/ hydraulic Jim-crows of appropriate capacity. Suitable gap of 25+ 1mm shall then be created (after removing fastenings in case the welding is done in situ). The gap should be uniform throughout the depth of the rail section. The rail ends shall then be aligned in horizontal and vertical planes to the dimensional limits as per welding manual.
- ii) Gap between rail ends should be re-checked after completion of alignment. Adequate fastenings shall then be provided to keep the rail ends in position.
- iii) The rail end face and adjacent sides at foot (top and bottom), web and head up to 50mm shall be thoroughly cleaned using K. oil and brushing with wire brush to remove all dirt, grease and rust. Each pair of pre-fab moulds shall be examined for defects, dampness, cracks, blocked vents etc. before fixing at joint.
- iv) After fixing the moulds, the gap between mould and the rail shall be packed firmly with luting sand to prevent leakage of liquid weld metal.
- v) Only dry luting sand shall be used for welding for which sufficient quantity of dry luting sand manufactured by using high silica white sand conforming to IS: 1987-74 Gr. A and inorganic binder and wetting agent shall have to be supplied/ arranged by the Contractor.
- vi) The rail ends shall be uniformly pre-heated by compressed air blower/ compressed Air- Petrol/Oxy -LPG or any other RDSO/LKO approved technique subsequently throughout the rail section for specified pre-heating time.
- vii) After completion of pre-heating i.e. after removal of burner, pouring of molten metal shall be done and molten metal shall be allowed to cool and solidify with mould intake for the stipulated mould waiting time and then trimming of extra metal of weld should be done. For new rails, trimming should be done by weld trimmer of approved design only. In the eventuality of sudden failure of weld trimmer, manual chipping may be resorted to with specific approval of Engineer-in-charge. In case of welding of old rails, if it is not possible to use weld trimmer due to flow of metal at rail head, manual trimming may be resorted to with the specific approval of Engineer in charge.
- viii) After the excess metal is trimmed off, the grinding of the remaining metal on the rail table and the sides of the rails head (both faces) shall be carried out preferably with rail profile guided grinding trolley of approved design. Use of hand files should not be resorted to except in unavoidable circumstances. Rough grinding should be done immediately after the weld is executed.
- ix) It should be ensured by the Contractor that the work of filing and finishing of welding joints keep pace with the progress of welding. The Contractor shall be responsible for ensuring that the filing is within prescribed tolerances as per manual.
- x) All the finished joints shall be checked to ensure that joint geometry is within the tolerances as per "Manual for fusion welding of rails by SKV AluminoThermit process-1998 "with latest correction slips.
- xi) Shifting of sleepers for ease of welding & their re-shifting at original sleeper spacing after welding of joints and re-fixing the opened fittings & fastenings after removal of wedges used for aligning are included in scope of work and rates are inclusive of the same.

- xii) After completion of welding work and tightening of fitting & fastenings, 6 sleepers of joints should be thoroughly packed with correction of X-level, gauging, boxing, dressing of ballast on joint sleepers by the Contractor at his own cost, as the rates are inclusive of same.
- xiii) The details of geometry of each joint shall be jointly signed by the firm's and HRIDC's representative and kept as record. Any joint found not conforming to the prescribed tolerances as per "Manual for fusion welding of rails by SKV AluminoThermit process 1998 with latest correction slips, shall be treated as defective weld and shall be dealt with accordingly.

xiv) TRACEABILITY OF WELDS:

MARKING: - Each joint shall have a distinctive mark indicating month, year of welding, agency and welder/supervisor identification code number (as appearing on his competency certificate) at non-gauge face side of AT weld on head as given below:- Figure: Location of marking on non-gauge face of welds.

MM YY
 Month Last two digits of year

Identification code

A	A	B	B	B	C	C	C
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Where,

A	A
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00 for AT portion manufacturing firms

01 for departmental welders

02-99 for welders of welding Contractors. The codes shall be allotted for different contractual agencies undertaking AT welding of rails (other than portion manufacturers)

B	B	B
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Specific person number (from 001 to 999). The specific person number will be continuous for a Zonal Railway firm.

C- For welders/supervisors of Zonal Railways: First two/three initials of the Railway to which the supervisor or welder belongs or

For welders/supervisors of portion manufacturing firms and welding Contractors: Code allotted for the portion-manufacturing firms, for whom welders/supervisors of portion manufacturing firms and welding Contractors are approved.

Alphabetic codes allotted to the portion manufacturing firms are given below:

ITC=T, HTI=H, QTPL=O, STI=S, RMPL=R, IFA=F, TPP (NR)=N

In case of welders belonging to the welding Contractors, this code will signify the portion manufacturing firm for which the competency certificate of welder is valid.

The marking should be embossed on the non-gauge face side of AT weld by punching after finishing of the weld in letters/digits of 6mm height located as indicated in figure.

In addition to this, alphabetic code allotted to portion manufacturing firm as per a) above e.g. T.H.N etc. and year of manufacture (last two digits of the year) shall also be embossed on the mould to appear on web collar.

For example, 01001Eco would indicate a departmental welder/supervisor of East Coast Railway with specific person number 001. Similarly, 0000IT would indicate a welder/supervisor with specific person no. 001 of portion manufacturer whose code is “T” i.e. ITC, 02001H would indicate a welder, belonging to welding Contractor whose code is 02, having specific person number of 001 and having competency for welding with portion/technique of portion manufacturing firm with code “H”.

- xv) All welds shall be painted by the Contractor using paint to specification No. IS-9862-1981 or bituminous emulsion to IRS-P-30 Gr. I or equivalent as accepted by the HRIDC & specified in the procedure for painting of weld collars of Thermit welded joints as per relevant codes and specifications.
- xvi) Each completed weld joints shall be checked by HRIDC welding in-charge with Contractor or his representative jointly for visual examination and straightness, alignment and finishing, longitudinal leveling by using one meter long and 10cm long straight edge and feeler gauge. The permissible tolerances as per I.R. specifications shall be accepted, otherwise HRIDC reserve the right to reject the weld joint and same rejected welded joints will be cut and rewelded by the Contractor free of cost. Checking instruments/ gauges will be arranged by the Contractor at his own cost.
- xvii) USFD testing will be carried out by HRIDC with their own machine along with Contractors representative.
- xviii) A comprehensive register in the proforma prescribed in Annexure -5 of “Manual for Fusion Welding of Rails by the Alumino-Thermic Process-1988” shall be maintained by the HRIDC wherein the records of acceptance test including USFD tests as prescribed in the specifications shall be kept. The record shall be jointly signed by the Contractor and the HRIDC representative.
- xix) If mould box clamp space between joint sleepers is not available, joint sleepers should be shifted either side to create required space and required welding gap shall be obtained by pulling or cutting end of rails, opening of fitting & fastenings of rails.
- xx) All P. way fitting removed to facilitate welding are to be re-fixed by Contractor at his own cost. An HRIDC representative deputed at site will ensure that the fittings removed by you are put back in the same position again and for fittings not placed in position/ damaged recovery @ 1.5 times the cost of fitting including freight charges @ 7% will be made from the Contractor.
- xxi) Any scrap material generated by Contractor from his own material can be collected by Contractor like used polythene bags, packing case, cotton bags, used and un-used equipment, used and un-used rail files and scrap metal (chipping metal) but any rail pieces generated due to cropping of rail joints will be the property of HRIDC.

Regarding employment of civil/graduate engineers/ diploma holders by Contractors for HRIDC work: Agency has to provide welding supervisor at site duly approved by the RDSO.

11.63.3 Guarantee period for satisfactory performance

- i. Relevant clause of IRS T-19-1994 and “Manual for fusion welding of rails by SKV Alumino Thermit process – 1998” with latest amendments issued till the date of opening of tender pertaining to execution guarantee and acceptance test shall be strictly followed.
- ii. Rail joints welded by a firm shall be guarantee against failure for a period of two years from the date of welding the joints in track or from the date such welded joints made in case are inserted in the track. Any such welded joints which is found defective or fails within the guarantee period shall be re-welded free of cost by the contractor using their portion, labour, consumable and equipments.
- iii. In case of failure of sample test joint the period of guarantee for 100 joints represented by the sample joint shall be extended for a further period of one year. In case of failure of joints or joint exhibiting signs of failure by cracking within extended period of guarantee, the joints shall be re-welded free of cost by the contractor.
- iv. The welded joints with extended period of guarantee shall be marked ‘X’ by the contractor with Yellow paint on the outer side of web of the rail near joint **in addition to marking prescribed in guideline of manual for fusion welding of rails by the AT process – 1988**. Such marked joints shall be kept under careful observation.
- v. No payment shall be made for sample welds to the contractor. However, 2m long rail piece required for sample weld shall be given free of cost on every 1000 joints ordered. Transportation of the same to railway approved laboratory/ RDSO is to be arranged by contractor at his own cost. In case testing is done in railways laboratory, test rail pieces need not be returned to railway. However, in case the testing is done outside railway premises the scrap rails will be returned by the contractor otherwise recovery will be affected @ Rs.70.00 per Kg. If the sample weld fails to comply with the criteria as laid down in para-7 of welding manual -1998 (with latest correction slips), two more sample weld will be tested from the same batch and the both sample welds shall be passed otherwise all the 100 welds represented by the sample weld shall also stand rejected.
- vi. After the defect is noticed within the guarantee period, the railway shall promptly notify the contractor and upon receipt of such notice the contractor shall replace the defective weld with one / two new welds free of cost at the earliest. If the contractor having been notified fails to rectify the defect within a period of 15 days, the railway may proceed to recovery, for every joint failing during the guarantee period, 3 times the cost of welding as paid to contractor.
- vii. The maximum percentage of defective welds should not exceed **2% of total number** of joints welded. For on account payment, the defective percentage will be calculated for a group of 500 welds or part thereof. All the welds found to be defective as per acceptance test, as given in Para 6.4 of welding manual shall be cut and re-welded by the firm free of cost. Where one bad joint is required to be replaced by two new joints, the entire cost of both the new joints shall be born by the firm. All the re-welded joints should meet the acceptance test. In case the numbers of defective / failed- welded joints exceed 2%, they shall be re-welded by the contractor free of cost and a recovery shall be made from the contractor’s **bill @ Rs. 1000/-per joint** towards the cost of supervision and wastage of the rail. In case the number of welded joints failing during the guarantee period exceeds 2%, the railway administration will reserve the right to terminate/ suspend the contractor’s

- welder/s and to realize the cost of damage/ loss caused by such failures. In case the welder is suspended, the contractor shall be allowed to restart the work only after he gets his welding technique revalidated from RDSO–Lucknow. Till fresh certification is issued welder will not be allowed to do any work.
- viii. Rails required for elimination of defective welds will be supplied by railway free of cost in the same yard/ block section. However, this will have to be transported by contractor to the required site from Executive/HRIDC nominated store at his own cost.
 - ix. All cuts required for replacement of defective joints is to be made by contractor at his own cost.
 - x. On every day after completion of welding work, welding team will collect all released fish plates, fish bolts and cut rail pieces (Within 6.00mtr.) and lead from site to nearest Railway station by his own means and labour and handed over to site in charge or his representative with clear acknowledgement.
 - xi. After completion of welding work and tightening of fitting & fastenings, 6 sleepers of joints should be thoroughly packed with correction of X-level, gauging, boxing, dressing of ballast on joint sleepers at his own cost as the rates are inclusive of the same.
 - xii. If mould box clamp space between joint sleepers is not available, joint sleepers should be shifted either side to create required space and required welding gap shall be obtained by pulling or cutting end of rails, opening of fittings & fastenings of rails.
 - xiii. The contractor will be allowed to do the welding of defective weld by wider gap technology to reduce the wastage of rail and population of SKV welds at site.
 - xiv. Contractor will maintain batch wise & welder wise data of each weld at site, so that any deficiency in a particular batch or portion or welder can be identified and suitable action can be taken in consultation with RDSO. Numbering of SKV weld at site shall be done to correlate a particular weld with a particular batch of portion and welder.
 - xv. Rails required for elimination of defective welds will be supplied by railway free of cost in the same yard/block section. However, this will have to be transported by contractor to the required site at his own cost.

11.63.4 Payment schedule for welding work:

- a) 90% payment will be made after completion of welding, grinding, finishing of welding joints to the specified tolerances and marking it as per specifications.
- b) 5% payment will be made after weld numbering as per specifications and after successful USFD testing of the joint.
- c) 5% payment will be made after painting of joints as per special conditions.

11.64 NS Item No. 64: - Supplying and fixing Boards for LWR and curves, made of 16 gauge M.S. Sheet with ISA 40x40x5 MM frame and ISA 75x75x6 MM posts as per drawings duly painted and lettered with luminous paint and as per direction of HRIDC' s Engineer -in- charge at site to his entire satisfaction.

11.65 NS Item No. 65: - Fouling marks of size 1500x250x225 MM in M20 grade cement concrete including engraving the letters “FM”, white washing with two coats and painting the letters in black enamel paint indicating the numbers of vehicles duly fixed at site.

1. All posts shall be cast as per approved plan at a centralized place and transported to site to ensure the quality.
2. All posts/ marks shall be engraved/ painted with approved type of paint and concrete shall write the various details as per drawing or as directed by Engineer-in-charge.
3. The rates are inclusive of cost of all materials such as cement, steel, aggregate, water, paint etc. excavation for foundation concrete and back filling, transportation of posts to site and fixing in position etc. with contractor’s own tools and plants, equipments, consumables, labourers etc., inclusive of all lift & lead, taxes, royalties etc. complete.
4. Nothing extra will be payable over and above the accepted rates.
 - i. The scope of work is fabrication, supplying and fixing MS board for curves, LWR bridges, Gang beats, RAT, “D” class station name board etc.
 - ii. The MS sheet shall be of 16 SWG duly painted (with one coat of red oxide primer and two coats of synthetic enamel paint of approved colour) and lettering with approved colour of enamel paint.
 - iii. The board shall be fixed on MS angle iron post of suitable size and length with MS bolts/ welding as decided by engineer-in charge. iv) The post along with board are to be fixed in to ground/ on formation with concrete (1:2:4) of suitable size after excavation.
 - iv. The payment for angle iron frame, post, MS bolts will be made separately under relevant USSOR item. However, no extra payment will be made for welding.
 - v. The payment of excavation and concrete (1:2:4) will be made separately under relevant USSOR item. vii) Rate includes cost of MS sheets, paints, tools and plants, equipments, consumables, labourers etc., inclusive of all lift and lead, transportation arrangements, taxes etc. complete.

11.66 NS Item No. 66: - Supplying & fixing of M-25 grade RCC gradient post and km post as per standard type plan of Northern Railways (NR) at nominated places (i.e at every grade change point and every full kilometre location). All materials will be arranged by the contractor including fixing, painting, with all lead, lift, labour and T&P, ascent, descent for completing the job . The rates are inclusive of cost of all materials such as cement, Reinforcement steel, binding wire, shuttering, aggregate, water, paint, excavation for foundation concrete and back filling, transportation of posts to site and fixing in position inclusive of all lift & lead, taxes, royalties etc. complete. Reinforcement steel including cutting, straightening, hooking, bending, binding, placing and keeping and maintaining in position will be arranged by contractor at his own cost.

11.66.1 General

1. All posts shall be cast as per approved plan at a centralized place and transported to site to ensure the quality.
2. All posts/ marks shall be engraved/ painted with approved type of paint and concrete shall write the various details as per drawing or as directed by Engineer-in-charge.
3. The rates are inclusive of cost of all materials such as cement, steel, aggregate, water, paint etc. excavation for foundation concrete and back filling, transportation of posts to site and fixing in position etc. with contractor's own tools and plants, equipments, consumables, labourers etc., inclusive of all lift & lead, taxes, royalties etc. complete.
4. Nothing extra will be payable over and above the accepted rates

11.67 NS Item No. 67: - Shifting of P. Way materials such as rails, sleepers, points and crossings, fastenings etc. and stacking at the nominated place upto 250 m lead as directed by Engineer-in-Charge including all lift, labour, tools and machinery etc. complete

a) For lead upto 50m

b) Extra for lead for every 50 m or part thereof beyond initial 50 m lead

1. These items includes transportation of various new/ released P. way material including rail, Sleepers, fittings, fastenings, SEJs, Glued Insulated joints, switches, crossings and PSC sleepers(ordinary/special), loading, leading and unloading at the location as desired by the Engineer in charge or his authorized representative with contractors own labour, T & P, consumables and transport.
2. There may be sand dunes in some stretches of the site and some of the locations may be away from main road and may require construction of service road at contractor's own cost. Moreover vehicles with special arrangements including four wheel drive may be required for negotiating the sandy area, even then re-handling and further transportation through tractor/light vehicles/other arrangements are required to reach near the proposed track. Hence tenderers are advised to visit site and see availability of service roads before quoting up the rates and may decide construction of service roads and if there is need to provide such service roads then these shall be provided and maintained by contractor/ tenderer at his own cost and no extra payment/claim be entertained.
3. Contractor shall pay at his own expenses unless otherwise specified or provided all fees, toll, taxes, octroi etc. and other charges payable to the Government or the municipal committee or other local authorities in connection with the execution of the work. He shall also satisfy all claims arising out of the non compliance with any laws etc. Nothing extra shall be payable over & above quotes rates.
4. The sleeper shall transported by the contractor as per the allotment received from each sleeper factory without any delay. He shall engage sufficient number of trucks/trailers to transport the allotted quantity within the allotted time period.
5. Material led out at site is to be directly handed over to the site/depot in charge. The weighment will be done inside the depot /godown where such facility exists, otherwise quantity may be weighed outside or weight calculated based on specified weight.

6. The rate includes all elements of handling, re-handling crossing of nallahs, streams, channels, other obstructions all ascend and descend, including all other incidental charges.
7. No payment will be made for the haulage of empty truck; payment will be made on the basis of net quantity transported.
8. The contractor shall be responsible to see that loads carried on his motor vehicles do not infringe any local or other standard regulations.
9. In case any material is found short at destination, the contractor will be held responsible for the same and the cost including all departmental charges will be recovered as per extent rules.
10. Lead shall be paid as per shortest Rail/Road route available between starting and destination station whichever is less. WBM and black topped surface will be considered as road for this purpose.
11. The 90 UTS RAILS, SWITCHES, STOCK RAILS, TONGUE RAILS, GLUED JOINTS, SEJs etc. are required to be handled carefully to prevent damage „Manual of instruction for Handling of Rails „July- 2000 issued by RDSO/Lucknow is to be followed. Safety precautions as laid down in IRPWM with up to date correction slips and other safety precautions are required to be followed for safety of trains as well as for work force, while working in vicinity of Railway tracks/station yards.
12. Payment shall be released only after the material is stacked at the required location within a distance of 150Mtr from centre line of track. 83 No. of sleepers at every 50M distance (along the track) shall be required. It may please be noted that no part payment shall be made for the sleepers stacked at other than the prescribed place.
13. No claim for compensation will be entertained from the contractor, if at any time for any period the is HRIDC unable to offer sufficient material for the full utilization of his transport. Contractor should arrange transport according to actual requirement to be given by the Engineer from time to time.
14. Wherever road vehicle and/or machinery are required to work in close vicinity of Railway line the work shall be so carried out that there is no infringement to the Railway schedule of dimensions. Special care will be taken for turning/reversal of road vehicle/machinery without infringing running traffic/safety of running trains.
15. The supervisors/workmen should be counselled about safety measures. A competency certificate to contractor’s supervisors as per Performa annexed to Para 826 of IRPWM will be issued by in charge of the work at HRIDC, which will be valid only for the work for which it has been issued.
16. Unloaded P. Way materials after unloading along railway track should be kept clear off moving dimensions and stacked as per specified height and distances from running tracks.
17. Supplementary site-specific instructions wherever considered necessary issued by Engineer-in charge will be followed by contractor.
18. The HRIDC will not entertain any claim for any detentions at level crossings during transit and no extra payment will be made for crossing of track obstructions, Nallahs, descents, ascents, or any other incidental charges.
19. The contractor should arrange proper type of transport well in time for transporting the railway materials. It will be the responsibility of the contractor to maintain and bear all the cost in connection with the operation of the proper means of transport and other services required for the purpose of executing the contract.
20. No claim for compensation will be entertained from the contractor if at any time for any period the Railway is unable to offer-to-offer sufficient materials for the full

- utilization of his transport. He should arrange transport according to actual requirement to be given by the Engineer from time to time.
21. The contractor shall transport and carry the materials expeditiously when required by the Railway so that works of Railway and other contractors do not suffer.
 22. The contractor shall take such precautions as are necessary to ensure that the materials is firmly secured during transit, it will be on the contractor accounts. He will be required to compensate the Railway for damage or losses, if any.
 23. No claim of any kind whatsoever will be entertained if the execution of the work is held up or delayed on any account. The contractor should plan the execution of the various works in close co-ordination with Engineer or his authorized representative.
 24. The contractor shall be responsible to safeguard the railway material's unloaded from railway wagons, trucks/trailers till such time, it is handed over to the consignee at his depot or site as directed by the Engineer or his representative.
 25. Any shortage/damage of P. way material during handling/ transportation will be recovered from the contractor at actual cost or market value whichever is higher for any other materials plus 3% incidental charges and 12.5% supervision charges.
 26. Railway will not entertain any claim from the contractor on account of damage to his vehicles/cranes due to poor conditions of the roads and delay in unloading, leading of PRC sleepers at Railways stations goods platform /yards, Railway stores or any other connected place of work. Contractor shall have no claim for any delay due to no-entry restrictions at originating point, en-route or destination or any delay/detention at level crossings.
 27. The HRIDC Administration may recommend to the concerned authority to issue necessary transport permit for the works. The contractor shall however furnish full justifications for the facilities to enable the HRIDC Administration to address the Government or other Authorities in this connection. The contractor shall also maintain regular log book of receipt or any delivery of the material of Railway, which the contractor are asked to load/ unload, lead to work, if so required by the Civil Authority. No claim would however be entertained by the HRIDC in case of delay in issue of permit, non-issue of any priority permit or any interruption in supply. The contractor shall protect and support as the case may be or as directed by the Engineer, all buildings, fences, wells, tower, drains, road, paths, waterways, banks, Railway ground and Earthwork. Electric lights, telegraphs, telephone lines and water service main pipes, cabins wires, specified/other than those specified or directed to be removed or altered which may interfere with and which are likely to be affected, disturbed or engaged for execution, completion of the work. No payment shall be made by the HRIDC to the contractor for these works.
 28. The contractor shall be responsible for all structural and decorative damage to property or injury caused by works or his workmen to person, animal or things and shall indemnify the HRIDC in respect thereof and shall be held entirely responsible for all works carried out by him, until it is finally taken over by the HRIDC. He will be liable to carried upon to make good any damages or loss which may occur to the buildings and works by inclemency of weather, floods etc. or due to any other cause during the entire period until work is taken over.
 29. The HRIDC shall not be responsible for any loss or damage to contractor's men, materials, equipment, tools and plants etc. from any course whatsoever
 30. The material in carts or trucks for road transport will be entered in a challan to be prepared by a HRIDC official in five copies and will have to sign by the authorized agent of the contractor. These will be verified by the HRIDC representative at the destination. For any shortage en-route, the contractor will be responsible and will be

required to compensate the HRIDC for that. Only those agents, who are authorized by the transport contractor in writing, shall be empowered to sign on the challan in token of their acknowledgement and receipt of materials included in the challan.

31. Materials loaded in carts or trucks for road transport will be entered in a challan to be prepared by a HRIDC official in five copies and will have to be signed by the authorized agent of the contractor. These will be verified by the HRIDC representative at the destination. For any shortage en-route, contractor will be held responsible and will be required to compensate the HRIDC. Only agents who are authorized by the contractor in writing shall be empowered to sign on the challan in token of their acknowledgement and receipt of materials included in the challan. Accountal of material shall be as under :-New/SH P. Way materials will be transported and the challan prepared in numbers and weight. For preparing bills/ payment weight will be taken as per the following standards duly catering for wear tear in second hand materials.

All new P.Way material	:	Standard geometric weight of material unless specified otherwise	P.Way
PRC mono block sleepers, Level Crossings and Guard rail sleepers for Bridges	:	Nos.	
PRC for turnout, SEJ, trap	:	Per meter	
Rails second hand	:	Standard weight reduced by 4%	
Other ferrous/non ferrous material	:	Actual weight	

32. **Standard** weight of BG 60 Kg PRC sleeper is 286.5 Kg, for turn out, SEJ, L-xing, guard rail sleepers standard weight and length is as per RDSO standard drawings, which may vary within prescribed range. However for payment against relevant NS item, the length of PSC sleepers will be taken as under:-

(i)	Normal line sleeper	:	2.75 m.
(ii)	Level crossing sleeper	:	2.75 m.
(iii)	Bridge proper /approach sleepers	:	2.75 m.
(iv)	SEJ sleeper	:	2.75 m.
(v)	Sleepers for 1:85 fan shaped turnout	:	225.84 m/set
(vi)	Sleepers for 1:12 fan shaped turnout	:	326.29 m/set
(vii)	Sleepers for derailing switch	:	88.50 /set

33. No other materials shall be carried along with railway materials by the HRIDC in the same trucks/trailers/carriage.
34. The contractor shall not ply trucks/tractor/trailers on the new embankments to avoid any danger to running traffic.
35. Since the consignments to be unloaded and the materials to be lead/transported may/require use of crane/trucks/trolley block etc. hence the contractor will have to make suitable timely arrangement by his own efforts, cost and the HRIDC will not assist in making these arrangements. This will be purely contractor's responsibility.

36. The road vehicle in which material is loaded for leading should normally not be changed. If there is any break down and defect/damaged/out of order, the road vehicle required to be changed for transporting the Railway material to the destination, prior approval has to be obtained from the Engineer in charge for changing the transport vehicle.
37. The contractor has to unload the P. Way materials by mechanical/ manual means with special precautions so as not to damage the materials. The Rails, P. Way materials etc. should not be thrown with impact, but should be unloaded gently using the contractor's own road cranes or by other mechanical means by slowly sliding the rail panels, Rails & other P. Way materials etc. The handling of rails and P. Way material should be proper, as directed by Engineer-in charge. The unloading of rails, P. Way material etc. should be done without any infringement to track and standard moving dimensions.
38. Since the work is required to be done in the proposed alignment, contractor may have to cross the tracks at appropriate locations for taking his cranes/trucks to load/unload and stack the sleepers, as per direction of site in charge. The contractor is therefore required to follow the traffic, rules and to co-ordinate with the concerned HRIDC authorities for smooth execution of the work. The tenderer is advised to quote the rate accordingly keeping above factor in view.
39. In case the contractor at anytime fails to load/unload and lead the P. Way materials as and when asked for by the HRIDC and to maintain efficient services as required, it shall be lawful for the HRIDC to make alternative arrangements for the loading/unloading and carriage of the materials by any other means and to recover the expenses thus incurred by way of penalty that maybe due to this contractor and to determine the contract.
40. Contractor shall ensure all precautionary measures so as not to endanger the safety of running of trains, trolleys and protect all men and materials, which shall be the responsibility for the contractor. The contractor should make a special note of this clause as safety of train is of utmost importance. Nothing extra shall be payable on this account.
41. At some time, contractor maybe required to bring men/material etc. from the other side of the existing tracks, and as such the rates quoted by him will be inclusive and all protection measures has to be taken for men and materials as well as safety of trains.
42. In the event of any train accident during the work on the existing running line, arising on accounts of contractor or his men not observing necessary safety precautions for the various operations required for the execution of this work the contractor shall be fully responsible for all damages and also he will have to pay charges of the accident/relief train arranged if any, In addition, the contractor would be responsible for payment on actual compensation for loss of any life or property of Railway and Railway users.

11.68 NS Item No. 68: - Anticorrosive painting of 60 KG, rails. Painting to be done prior to installation on sleepers including touching of paints in areas damaged during fixing.

11.68.1 Painting of one coat of anti corrosive black bituminous paint of ERC new/old with approved quality of paint ,prior to applying the paint over ERC, proper cleaning of any dust /rust etc with wire brush/sand paper and brushing for good quality of work and washing of pandrol clips by K.OIL by keeping them dipped in k.oil for at least 12 hours ,drying them and then dipping for short period in bituminous pain of ISI

approved mark as per instructions of the Engineer-in-charge at HRIDC including cost of material ,labour and T& P as a complete job.

11.69 NS Item No. 69: - Painting of particulars of 1 in 16, 1 in 12 and 1 in 8 ½ turnouts and derailing switches including turn in curves on the inside web of outer rail with stencils of specified height in black enamel paint on surface of specified length painted with two coats of yellow enamel paint over a primer coat painted after cleaning the surface free from dust and dirt.

11.69.1 Confirming to IRS:P-30-1996 to dry film thickness of 350micron (each coat to minimum thickness of 175 micron) after applying one coat ready mix priming coat of red oxide zinc

11.69.2 Cromate primer to IS :2074 of approved quality as per IRPWM. The painting will done after removing the dust and rust and loosening the scales by brushing/scraping etc. All the application will be done in uniform brushing. The work shall be complete in all respects with all labour material misc. and incidental work related to the job as per direction of HRIDC'Engineer -in- charge at site to his entire satisfaction.

11.70 NS Item No. 70:- Loading, leading, unloading and stacking of PSC line sleepers 60Kg,and level X-ing/guard rail sleepers including all lead, lifts, etc as a complete job.

- a) Lead up to 1 km over 500 mtr free lead.
- b) Additional lead to item (a) above for every subsequent Km or part thereof over 1 Km and upto 5 km. (i.e 4 Km)
- c) Additional lead to item (a) & (b) above for every subsequent Km or part thereof over 5 Km and upto 10 km. (i.e 5 Km)
- d) Additional lead to item (a),(b) & (c) above for every subsequent Km or part thereof over 10 Km and upto 20 Km. (i.e 10 Km)
- e) Additional lead to item (a), (b), (c) & (d) above for every subsequent Km or part thereof over 20km and up to 50 Km. (i.e. 30 Km)
- f) Additional lead to item (a), (b), (c) & (d) & (e) above for every subsequent Km or part thereof over 50 Km (i.e. 50 Km).

11.70.1 The NS item includes Transportation including, loading & unloading P.Way fittings, welding portion & equipment and 60 Kg. PSC ordinary sleepers, Special PSC sleepers for SEJ, Level crossing, Bridges, points & crossings etc. from sleeper plant or any other places to entire section & stacking within Railway boundary along the track/new formation as per requirement & as directed by the engineer-in-Charge with contractor's own transportation, unloading, labour, tools, plants, equipments etc. inclusive all lift, ascent, descent, crossing of track/level crossing, nallahs, streams & fences or any other obstruction, handling, re-handling etc. with all safety precautions.

11.70.2 All tools plants, equipments, machinery, consumables etc. for successful execution of work will be arranged by contractor at his own costs & the rates are inclusive of all the activities. Sleepers will be transported mostly from Shambhupura/ Degana/ Marwar Chhapri/Khatu/Hanumangarh or from any other station to the required destinations. Sleepers may require to be transported from one place to another i.e. Maruti Suzuki plant, Manesar itself in order to meet the requirement. Also sleepers may have to be transported from other sleeper factories/locations also, in case of non-availability or lack of allotment from aforesaid factories. The exact sources of sleepers will be duly indicated by Engineer in charge from time to time.

11.70.3 In case of sleepers to be transported from any sleeper factory, the loading of PSC sleepers in contractor's vehicle shall be done by concrete sleeper plant. No payment will be made for loading of sleeper in sleeper plant.

11.70.4 The loading of P.Way fittings in contractor's vehicle shall be done by the contractor with his own arrangements, labour, tools & plants etc. where ever required as per instructions of Railways representative. Extra payment for loading will be made for loading in relevant NS item.

11.70.5 No item schedule can be given for the availability of P.Way fittings and sleepers in any particular concrete sleepers plant for transportation/unloading. This factor shall be taken into account while quoting the rates.

11.70.6 Sleepers will have to be carted to mid section along the track where there will not be pucca road and thus may require re-handling for which no extra payment will be made.

11.70.7 This may be kept in view while quoting the rates.

11.71 NS Item No. 71:- Supplying, fabricating and erecting in position dead ends, including two coats of painting as per approved drawing as directed by Engineer-in-charge with contractors own labour, consumable, plant, equipment and machinery. Rails and fishplates, bolts and nuts will be supplied by Railways free of cost. The rates shall be inclusive of carting of rails from and within respective station yard & fishplates, bolts and nuts from Executive/HRIDC depot.

11.71.1The fabrication and erection has to be done as per Railway's approved drawing and as per instructions of engineer in charge, with contractor's labour, material and T&P except rails and fishplates and released bolts etc.

11.71.2 The rails will be supplied at the respective station.

11.71.3 Fishplate & released bolts will be made available in Executive/HRIDC Depot and the same shall be transported free of cost by Contractor.

11.71.4 The rates are inclusive of two coats of painting with approved quality of paint.

(Chief Project Manager/HRIDC)
HRIDC, Plot no 143,5th floor,
Railtel Tower, Sector-44
Gurugram.

I/We am/are to abide by the terms and conditions mentioned on all pages of Tender Documents as well as the Indian Railways Standard General Conditions of Contract, April 2022, Standard, Northern Railway Unified Standard Schedule of Rates 2010 (Works & Materials) and Indian Railway Unified Standard Specifications (Works & Materials) Vol.1 & 2- 2010 to the extent the latter three books are applicable as corrected up to date.

Signature of the Tenderer(s)

Address

Packet-II: FINANCIAL BID (BOQ)

Name of work: T. No. HRIDC/GGN/MSIL/2022/01- Construction of Railway yard in Maruti Suzuki India Limited plant at Manesar (Haryana) including Earthwork in Formation, RCC Box Culverts, Track Linking, including supply of Track Ballast, Special Sleepers, Points & Crossings, P. Way Fittings, CC Paver block, platforms, retaining walls, building and other miscellaneous works.

SCHEDULE OF APPROXIMATE QUANTITIES AND RATES
(BILL OF QUANTITIES)

Bill No-1 Indian Railways USSOR-2010 Items except Cement and Steel						
Sr. No	USSOR Item No	Description of Item	Unit	Qty	Rate	Amount
Chapter -1 : Earthwork						
1	011010	Earth work in excavation as per approved drawings and dumping at embankment site or spoil heap, within railway land, including 50m lead and 1.5m lift, the lead to be measured from the centre of gravity of excavation to centre of gravity of spoil heap; the lift to be measured from natural ground level and paid for in layers of 1.5m each including incidental work, as per specifications.				
(i)	011011	All kinds of soil	Cum	1579.00	81.36	128467.44
(ii)	011012	Ordinary Rock (Not requiring blasting)	Cum	50.00	213.52	10676.00
(iii)	011014	Hard Rock (blasting prohibited)	Cum	50.00	510.62	25531.00
2	011030	Extra over items 011010 for spreading and finishing of fill material on embankment by manual means in accordance with specifications	Cum	1579.00	94.08	148552.32
3	011050	Extra for lead of earth work above initial lead of 50m, in all kind of soils and rocks:				
(i)	011051	for every 50 m or part thereof - lead over 50m and upto 150m	Cum	1421.00	10.74	15261.54
4	011070	Extra for every additional lift of 1.5m or part thereof, after the initial 1.5m, for earth work in all soils	Cum	462.00	8.01	3700.62

5	012050	Supplying and filling sand in plinth and under floors including watering, ramming, consolidating and dressing complete	cum	1863.00	725.00	1350675.00
6	013110	Earthwork in cutting (classified) in formation, trolley refuges, side drains, level crossing approaches, platforms, catch water drains, diversion of nallah & finishing to required dimension and slopes to obtain a neat appearance to standard profile inclusive of all labour, machine & materials and removing & leading all cut spoils either to make spoil dumps beyond 10m from cutting edge or for filling in embankment with all leads within the section limit, lifts, ascent, descent, loading, unloading, all taxes/ royalty, clearance of site and all incidental charges, bailing & pumping out water, if required, etc. complete as per directions of the Engineer-in-Charge. The work is to be executed as per latest / updated edition of "Guidelines for Earthwork in Railway Projects" issued by RDSO, Lucknow. Cut trees shall be property of Railways and to be deposited in the railway godown unless specified otherwise in the Special Conditions of Contract.				
(i)	013111	In all conditions and classifications of soil except rock.	Cum	10017	140.57	1408089.69
(ii)	013112	Soft rock not requiring blasting in all conditions	Cum	50.00	219.65	10982.50
(iii)	013114	In rock and very hard rock with hammer / chisel / pavement breaker etc. where blasting is not permitted due to special	Cum	50.00	448.96	22448.00

		circumstances and if specifically ordered in writing including drilling and all incidental work in all conditions.				
7	013130	Extra for mechanical compaction of earth/blanketing material filled in embankment with contractor's rollers of suitable capacity, type and size to achieve specified density as per specification, testing as per IS codes including cost of water, T&P, consumable material and all labour as a complete job. The work is to be executed as per Latest edition of "Guidelines for Earthwork in Railway Projects" issued by RDSO, Lucknow.	Cum	1579.00	11.43	18047.97
8	013140	Removal of excavated /slip earth/debris/ malba from the site of works to any other place outside Railway land/premises, including all excavations, handling, rehandling, loading, unloading and leading, etc. all labour and material as a complete job. Removal of Earth (All kinds of soils) ROCKS, BOULDERS including mud/slush, slipped earth in catch water drains, side drains, over berms in cutting, water way of bridges, over coping of toe/breast/retaining walls etc. including crossing of nallah, railway tracks, making /repairing approach roads if required, all lead, lift ascent, descents, or any other obstruction. Earth spoils to be dumped outside the cutting or railway embankments as per direction of Engineer in charge.	Cum	4046.00	95.82	387687.72
9	014030	Felling trees of girth (measured at a height of 1m above ground level) including lead and				

		stacking of material within 100m. Note : 1. When stumps are grubbed up in addition, the rates shall be doubled for trees cut and grubbed. 2. Payment for grubbing shall only be made where specially ordered. 3. Grubbing shall be ordered only where it is essential to remove the stumps, including the roots, as per specification. 4. Grubbing shall include removal of roots of trees and saplings to a depth of 60 cm below ground level or 30 cm below formation level or 15 cm below sub grade level, whichever is lower				
(i)	014031	Girth over 30 cm and upto 60 cm	Each	500.00	92.10	46050.00
(ii)	014032	Girth over 60 cm and upto 1.5m	Each	50.00	251.00	12550.00
(iii)	014033	Girth over 1.5m upto 3 m	Each	20.00	498.20	9964.00
(iv)	014034	Over 3m	Each	10.00	835.50	8355.00
10	014050	Turfing / planting, including all lead and lift, and watering as required until properly rooted, with. Note Initially payment of only 40% will be made. Balance 60% will be paid only after 3 months of maintenance period if the turfing is properly rooted.				
(i)	014053	Planting Sarkanda / sarpat or any other suitable species approved by the engineer.	100 sqm.	16000	3801.85	608296.00

11	014110	Providing and removing barricading with the help of portable fencing along the running track where the work is to be done in close vicinity of the track. Fencing shall consist of self supporting steel angles of size 50 x50x6mm, 1.5m long provided with hooks etc. and embedded in CC 1:2:4 block of size 0.23x0.23x0.23m placed at c/c distance of 2m along the track. 12mm dia rods in three horizontal layers tack welded with the angle posts including providing retro-reflective tapes in Horizontal & vertical direction. Note : Released material will be the property of the contractor after the completion of work. Cost of cement to be paid separately.	Meter	1000.00	382.62	382620.00
Basic Cost of Chapter-1 Rs.						45,97,954.80
Add % above for Estimate @						34.53%
Total Estimated value of Chapter-1 Rs.						61,85,628.59
Chapter -2 : Carriage of materials						
12	021090	Leading ballast, kankar, brickbats, stone-chips, shingle, stone boulders, block kankar, pitching stones , rubble stones, laterite, coal, surkhi, dry mortar, sand, moorum, earth, manure or sludge, ashes, lime, debris, muck, malba, etc.. for lead upto 25 km. Note : Lead under this item is payable when the same exceeds 500 M.	Cum	100.00	98.26	9826.00
13	021150	Leading miscellaneous materials such as iron work, rails, fittings & fastenings, pipes, wooden logs, stones over pitching stone size, RCC/PCC beams/slabs etc. and all similar articles (each individual article or bundle being not more than 3.5m long in the longest direction) including all loading, unloading and stacking, lead	MT	100.00	177.74	17774.00

		over 500m and upto 10 km. Note : Lead under this item is payable when the same exceeds 500m.				
14	021151	Additional lead for every subsequent km or part thereof, over 10 km and upto 100 km over item no. 021150	MT/K m	509.00	8.02	4082.18
Basic Cost of Chapter-2 Rs.						31,682.18
Add % above for Estimate @						28.35%
Total Estimated value of Chapter-2 Rs.						40,664.08
Chapter -3 : Plain Concrete (except item 033061 & 033062)						
15	031010	Providing and laying in position cement concrete of specified proportion excluding cost of cement, centering and shuttering - All works upto Plinth level :				
(i)	031011	1:3:6 (1 cement : 3 sand : 6 graded stone aggregate 20mm nominal size)	Cum	2965.00	1972.51	5848492.15
16	031050	Providing and laying in position M 20 Grade excluding the cost of cement and centering and shuttering as per direction of Engineer In charge				
(i)	031051	All works upto plinth level	Cum	617.00	2082.64	1284988.88
(ii)	031052	All works above plinth level in retaining walls, walls (of any thickness) including attached pilasters, columns, pillars, posts, struts, buttresses, anchor blocks, parapets, copings, bed blocks, string or lacing courses, window sills, fillets, kerbs, steps etc.	Cum	1234.00	2204.06	2719810.04
17	031060	Centering and shuttering including strutting, propping etc. and removal of form work for :				
(i)	031061	Foundations, footings, bases of columns	Sqm	1491.00	121.03	180455.73

(ii)	031062	Retaining walls, return walls, walls (any thickness) including attached plasters, buttresses, plinth and string courses fillets etc.	Sqm	2177.00	191.19	416220.63
18	032050	Providing and laying cement concrete 1:2:4 in damp-proof course (1 cement : 2 sand : 4 graded stone aggregate 12.5mm nominal size - excluding the cost of cement and including providing, fixing and removal of forms :.				
(i)	032053	50mm thick (20 mm coarse aggregate instead of 12.5mm)	Sqm	134.00	155.36	20818.24
Basic Cost of Chapter-3 (except item 033061 & 033062) Rs.						1,04,70,785.67
Add % above for Estimate @						87.16%
Total Estimated value of Chapter-3 (except item 033061 & 033062) Rs.						1,95,97,122.46
Chapter -4 : Reinforced cement concrete (except item no. 045016)						
19	041010	Providing and laying in position M-20 Grade concrete for reinforced concrete structural elements, but excluding cost of centering, shuttering, reinforcement and Admixtures in recommended proportion (as per IS:9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer in charge				
(i)	041011	All work upto plinth level, including raft foundation of washable aprons, HS tank, pile cap, footings of FOB, and Platform shelter etc.	Cum	952.00	2422.38	2306105.76
(ii)	041012	All work in buildings above plinth level upto floor two level.	Cum	1824.00	2645.23	4824899.52

20	042010	Centering and shuttering including strutting, propping etc. and removal of form for :				
(i)	042011	Foundations, footings, bases of columns, raft foundation of washable aprons, Pile caps, Footings of FOB etc.	Sqm	4194.00	120.60	505796.40
(ii)	042012	Walls (any thickness) including attached plasters, buttresses, plinth and string courses etc.	Sqm	21353.0 0	191.20	4082693.60
(iii)	042013	Suspended floors, roofs, landings, balconies, FOB slabs, walkway slabs and access platform	Sqm	847.00	185.57	157177.79
(iv)	042014	Lintels, beams, plinth beams, bed blocks, girders, bressumers and cantilevers	Sqm	190.00	163.2	31008.00
(v)	042015	Column, Pillars, posts and struts	Sqm	634.00	240.5	152477.00
(vi)	042016	Stairs (excluding landing) except spiral stair cases	Sqm	92.00	225.1	20709.20
(vii)	042029	Weather shade, Chajjas, corbels etc. including edges	Sqm	100.00	331.42	33142.00
21	042030	Extra for additional height in centering, shuttering wherever required with adequate bracing, propping etc. including cost of de-shuttering and de-centering at all levels, over a height of 3.5m for every additional height of 1 metre or part thereof in suspended floors, roofs, landing, beams and balconies (plan area to be measured)	Sqm	2260.00	74.40	168144.00
22	043010	Providing, hoisting and fixing in position upto floor two level M-20 Grade precast RCC work including setting in cement mortar 1:3 (1 cement : 3 coarse sand) and finishing smooth with 6mm thick cement plaster 1:3 (1 cement : 3 fine sand) on exposed surfaces complete including cost of centering, shuttering, finishing,				

		admixtures in recommended proportion (as per IS:9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability, excluding cost of cement and steel reinforcement, as per approved plan & direction of Engineer -in-charge				
(i)	043015	In slabs for drain covers, manhole covers, flue tops etc.	Cum	601.00	2870.14	1724954.14
23	048100	Keeping holes for holding down bolts in foundation blocks or bed blocks	Each	50.00	32.89	1644.50
24	048110	Grouting of holding down bolts with cement mortar in foundation blocks or bed blocks	Each	50.00	31.69	1584.50
Basic cost of Chapter-4 Rs.						1,40,10,336.41
Add % above for Estimate @						82.52%
Total Estimated value of Chapter-4 Rs.						2,55,71,666.02
Chapter -5 : Brick Work						
25	051010	Brick work with non-modular (FPS) bricks of class designation 7.5 in foundation and plinth in :				
(i)	051018	:Cement Mortar 1:6 (1cement : 6 coarse sand)	Cum	854.00	2218.87	1894914.98
26	051040	Extra over items 051010 & 051020 for brick work in superstructure beyond plinth level upto floor two level.	Cum	50.00	133.42	6671.00
27	055070	Brickwork with clay fly ash FPS bricks of class designation 7.5 in superstructure above plinth level upto floor two level in :				
(i)	055074	Cement mortar 1:6 (1 cement : 6 fine sand)	Cum	235.00	2122.48	498782.80
28	055080	Extra for exposed brickwork / clay fly ash brickwork in superstructure above floor two level for every floor or part thereof	Cum	120.00	264.82	31778.40

Basic cost of Chapter-5 Rs.						24,32,147.18
Add % above for Estimate @						70.02%
Total Estimated value of Chapter-5 Rs.						41,35,136.64
Chapter -7 : Wood Work						
29	071010	Providing wood work in frames of doors, windows, clerestory windows and other frames and trusses, wrought, framed and fixed in position :				
(i)	071022	Hollock wood or locally available comparable species of country wood - Kiln seasoned & chemically .	Cudm	50	41.37	2068.50
30	072010	Providing and fixing panelling/glazing or panelling & glazing in panelled/glazed or panelled & glazed shutters for doors, windows & clerestory windows (area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling/glazing for panelled/glazed or panelled & glazed shutters 25mm to 40mm thick				
(i)	072013	Kiln seasoned and chemically treated hollock wood, 35mm thick	Sqm	20	959.94	19198.80
31	072030	Providing and fixing paneling and/or glazing in panelled and/or glazed shutters for doors, windows and clerestory windows (area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling/glazing for panelled/ glazed or panelled and glazed shutters 25mm to 40mm thick :				
(i)	072037	Glazing with float glass panes 4mm thick (10kg/sqm)	Sqm	100.00	260.07	26007.00
32	074230	Providing and fixing M.S. grills of required pattern in frames of				

		windows etc. with M.S. flats, square or round bars etc. all complete				
(i)	074232	Fixed to opening / wooden frames with rawl plugs screws etc.	Kg	500.00	66.17	33085.00
33	074280	Providing 40mmx5mm flat iron hold fast 40cm long including fixing to frame with 10mm diameter bolts, nuts and wooden plugs and embeddings in cement concrete block 30cmx10cmx15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate-20mm nominal size)	Each	160.00	58.54	9366.40
34	076010	Providing and fixing ISI:12817 marked stainless steel butt hinges with stainless steel screws etc. complete of size :				
(i)	076012	100mmx58mmx1.9mm	Each	50.00	46.06	2303.00
(ii)	076013	75mmx47mmx1.8mm	Each	60.00	25.63	1537.80
35	077090	Providing and fixing bright finished brass 100mm mortice latch and lock with 6 levers and a pair of lever handles with necessary screws etc. complete (best make of approved quality)	Each	132.00	560.08	73930.56
36	077140	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws etc. complete	Each	25.00	69.75	1743.75
37	077180	Providing and fixing IS:3564 marked aluminium die cast body tubular type universal hydraulic door closer, hardwyn make (Classic Queen) or equivalent with necessary accessories and screws etc. complete	Each	25.00	669.45	16736.25
38	078020	Providing and fixing aluminium sliding door bolts ISI marked anodised (anodic coating not less than grade AC 10 as per				

		IS:1868) transparent or dyed to required colour or shade with nuts and screws etc. complete :				
(i)	078021	300mmx16mm	Each	25.00	178.83	4470.75
39	078030	Providing and fixing aluminium tower bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS:1868) transparent or dyed to required colour or shade with necessary screws etc. complete				
(i)	078033	200mmx10mm	Each	30.00	48.55	1456.50
(ii)	078035	100mmx10mm	Each	42.00	29.60	1243.20
40	078060	Providing and fixing aluminium handles ISI marked anodised (anodic coating not less than grade AC 10 as per IS:1868) transparent or dyed to required colour or shade with necessary screws etc. complete				
(i)	078061	125mm	Each	52.00	38.04	1978.08
(ii)	078062	100mm	Each	108.00	33.96	3667.68
(iii)	078063	75mm	Each	108.00	30.14	3255.12
(iii)	078160	Supplying, providing and fixing white colour sliding uPVC Window complete, consisting of uPVC frame of size 80mm x 52mm and uPVC shutter of size 54mm x 38mm with 1.2mm thick GI section reinforcement wherever required, produced by ISO 9001:2000 and ISO 14001:2004 certified company. Window shutter will consist either of 5mm thick float glass or galvanised wire gauge alongwith complete fittings, e.g. pulley/rollers, transmission gear and handle for operating window	Sqm	60.00	5406.78	324406.80
Basic cost of Chapter-7 Rs.						5,26,455.19
Add % above for Estimate @						38.46%
Total Estimated value of Chapter-7 Rs.						7,28,929.86

Chapter -8 : Steel and Aluminium Work						
41	081010	Structural steel work in single section including cutting, bending, straightening, drilling, rivetting, bolting, hoisting, fixing in position, including applying a priming coat of approved steel primer, complete - upto 6m height above GL				
(i)	081011	In RSJ, tees, angles and channels	Kg	500.00	50.84	25420.00
(ii)	081012	In flats, plates, round or square bars	Kg	500.00	50.63	25315.00
42	081030	Structural steel work welded in built up sections, trusses and framed work, girders, stagings, racks, etc. including cutting, bending, straightening, hoisting, fixing in position, including applying a priming coat of approved steel primer, complete - upto 6m height above GL :				
(i)	081031	In RSJ, tees, angles and channels	Kg	7004.00	75.92	531743.68
(ii)	081032	In flats, plates, round or square bars	Kg	4208.00	73.26	308278.08
43	081040	Extra for every subsequent 3m height or part thereof over 6m height above GL for erection and fixing of steel work :				
(i)	081041	Over item no. 081012	Kg	7004.00	2.32	16249.28
(ii)	081043	Over item no. 081032	Kg	4208.00	7.53	31686.24
(iii)	081140	Supplying and fixing lewis/holding down bolts of approved design with nuts and washers complete	Kg	1100.00	51.38	56518.00
44	081290	Steel work in built-up tubular trusses including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shaped washers etc. complete				
(i)	081291	Hot finished welded type tubes	Kg	500.00	100.32	50160.00

45	081420	Providing and fixing hand rail by welding etc. to steel ladders railing, balcony railing and staircase railing including applying a priming coat of approved steel primer				
(i)	081423	G.I. pipes 40mm nominal bore (class B)	Kg	720.00	107.57	77450.40
46	082010	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded built-up standard tubular and other sections of approved make conforming to IS:733 and IS:1285, anodised transparent or dyed to required shade according to IS:1868 (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle. Aluminium snap beading for glazing/panelling, C.P. brass/stainless steel screws, all complete as per architectural drawings and directions of Engineer-in-charge. (Glazing & panelling to be paid for separately)				
(i)	082011	for Fixed portion	Kg	100.00	305.87	30587.00
(ii)	082012	For openable/sliding portions and fixing hinges / pivots, PVC/neoprene gasket required and making provision for fixing of fittings. (Fittings shall be paid for separately)	Kg	200.00	317.67	63534.00
Basic cost of Chapter-8 Rs.						12,16,941.68

Add % above for Estimate @						39.94%
Total Estimated value of Chapter-8 Rs.						17,02,988.19
Chapter -9 : Flooring, Paving & Dado						
47	092010	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete :				
(i)	092012	40mm thick with 20mm nominal size stone aggregate	Sqm	200.00	120.99	24198.00
48	092020	Cement plaster skirting (upto 30cm height) with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement				
(i)	092022	18mm thick	Sqm	375.00	109.24	40965.00
49	092060	Providing and laying plain cement concrete flooring of specified thickness with mix design concrete over firm, well prepared and well compacted bed including provision of designed expansion joint & finishing manually or mechanical trowel ling & vacuum dewatering complete. Expansion joint to be paid for separately.				
A	092062	M-25	Cum	50.00	2601.25	130062.50
50	094070	Providing and fixing 10mm thick heavy duty acid and/or alkali resistant factory made tiles conforming to Group V-RD series of approved make and colour using acid and/or alkali resisting mortar bedding and joints filled with acid and/or alkali resisting cement as per IS:4457 complete including cost of acid/alkali resistant cement				

(i)	094071	In flooring on a bed of 10mm thick mortar 1:4 (1 appropriate cement : 4 coarse sand)	Sqm	25.00	1252.14	31303.50
51	095010	Providing and fixing Ist quality ceramic tiles conforming to Group B-III (Ceramic Wall Tiles) of IS:15622 of manufacturers approved by railway in all colours, shades, and design as approved by the Engineer-in-Charge in skirting, risers of steps and dado over 12mm thick bed of cement mortar 1:3 (1 cemen : 3 coarse sand) including pointing in white cement mixed with pigment of matching shade complete				
(i)	095011	200x200 mm	Sqm	30.00	498.16	14944.80
(ii)	095013	300x450 mm and above	Sqm	40.00	646.97	25878.80
52	095020	Providing and fixing ceramic tiles conforming to IS:15622 of manufacturers approved by railway in all colours, shades, design and abrasion resistance class as approved by the Engineer-in-Charge in floors and landings over 20mm thick bed of cement mortar 1:4 (1 cement : 3 coarse sand) including pointing in white cement mixed with pigment of matching shade complete				
(i)	095026	Of Group B-I-a of IS:15622 (Vitrified tiles) of size above 400mmx400mm upto 600mmx600mm	Sqm	20.00	932.87	18657.40
53	096070	40mm thick Kota stone slab flooring of size up to 60x60cm over 20mm (average) thick base of 1:4 cement mortar (1cement: 4coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete :				

(i)	096074	40mm thick	Sqm	405.00	1499.02	607103.10
54	096080	Kota stone slabs 25mm thick in risers of steps, skirting, dado and pillars laid on 12mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete :	Sqm	32.00	655.12	20963.84
Basic cost of Chapter-9 Rs.						9,14,076.94
Add % above for Estimate @						37.05%
Total Estimated value of Chapter-9 Rs.						12,52,742.45
Chapter -10: Roof and Ceilings						
55	104130	Providing gola 75x75mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate-10mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design in 75mmx75mm deep chase	Meter	600.00	54.98	32988.00
56	106100	Providing and fixing at all height false ceiling of 12.5mm thick tapered edge gypsum board conforming to IS:2095-Part I, including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised with zinc coating of grade 350 as per IS:277 and consisting of angle cleats of size 25mm x 1.6mm with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with stener 12.5mm dia x 40mm long with 6mm dia bolts to the angle hangers of 25mmx25mmx0.55mm of required length and other end of angle hanger being fixed with nut and bolts to G.I. channels 45mmx15mmx0.9mm running at the rate of 1200mm centre to centre to which the ceiling	Sqm	50.00	561.22	28061.00

		<p>section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm dia x 230mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the gypsum board with recommended filler, paper tapes, finisher and two coats of primer suitable for gypsum board as per manufacturers specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer-in-Charge but excluding the cost of painting.</p>				
57	108190	<p>Providing and fixing unplasticized -PVC pipe clips of approved design to unplasticized -PVC rain water pipes by means of 50mmx50mmx50mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete</p>				

(i)	108192	110mm	Each	5.00	164.34	821.70
58	108200	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15cm dia and weighing not less than 440 grams	Each	5.00	120.98	604.90
59	109280	Supplying and installation including lifting to all heights as required, of 0.5mm thick trapezoidal aluminum sheets having cover width of 975mm, 32mm crest height, pitch of 195mm made of Aluminum Manganese alloy 5754 grade in mill finish. Fixing shall be done with self tapping, self drilling screws of required TPI (24 or 14 or as thickness of purlin) and length, with neutral EPDM washer etc. complete	Sqm	1000.00	2529.81	2529810.00
60	109290	Providing and fixing of plain formed 0.5mm thick aluminum sheet flashing at ridges apex junctions of roofing and cladding, cover / corner / barge pieces etc. of required shape colour and profile as per site requirement				
(i)	109291	Upto 600mm width (girth)	Meter	100.00	2105.47	210547.00
61	109300	Extra over item no. 109280, if Stucco embossed finished aluminium sheets are used instead of mill-finish sheets	Sqm	1000.00	580.75	580750.00
Basic cost of Chapter-10Rs.						33,83,582.60
Add % above for Estimate @						38.02%
Total Estimated value of Chapter-10 Rs.						46,70,020.70
Chapter -11 : Finishing Masonary						
62	111040	12 mm cement plaster of mix -				
(i)	111042	1:6 (1 cement : 6 coarse sand)	Sqm	758.00	61.86	46889.88
63	111120	18mm cement plaster in two coats under layer 12mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and a top layer	Sqm	667.00	92.68	61817.56

		6mm thick cement plaster 1:3 (1 cement : 3 coarse sand) finished rough with sponge/rubber pad				
64	112040	Providing and applying plaster of Paris putty of 2mm average thickness over plastered surface to prepare the surface even and smooth complete	Sqm	1188.00	62.28	73988.64
65	115110	Finishing walls with water proofing cement paint of required shade two or more coats on new work applied @ 3.84 kg/10 sqm	Sqm	761.00	38.40	29222.40
Basic cost of Chapter-11 Rs.						2,11,918.48
Add % above for Estimate @						46.53%
Total Estimated value of Chapter-11 Rs.						3,10,524.15
Chapter -12 :Painting, Polishing & Varnishing						
66	121010	Applying Priming Coat :				
(i)	121011	With ready mixed pink or grey primer of approved brand and manufacture on woodwork (hard and soft wood)	Sqm	150.00	19.08	2862.00
(ii)	121013	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanized iron/steel works	Sqm	50.00	14.97	748.50
67	121050	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade				
(i)	121051	Two or more coats on new work	Sqm	556.00	40.81	22690.36
68	121150	Painting two coats (excluding priming coat) with chocolate, red, grey or buff ready mixed paint of approved quality on steel or wood work	Sqm	150.00	38.79	5818.50
Basic cost of Chapter-12 Rs.						32,119.36
Add % above for Estimate @						57.69%
Total Estimated value of Chapter-12 Rs.						50,649.02

Chapter -13 : Water Supply						
69	131150	Providing and fixing medium grade G.I Pipes complete G.I fittings including trenching and refilling etc External work				
(ii)	131153	25mm dia nominal bore	Meter	50.00	214.91	10745.50
(iii)	131156	50mm dia nominal bore	Meter	200.00	384.78	76956.00
(iv)	131157	65mm dia nominal bore	Meter	10.00	484.87	4848.70
(v)	131158	80mm dia. nominal bore	Meter	10.00	629.12	6291.20
70	131160	Making connection of medium grade G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete				
(i)	131161	Making connection G.I. of size 25 to 40 mm	Each	20.00	208.98	4179.60
(ii)	131162	Making connection G.I. of size 50 to 80 mm	Each	80.00	610.28	48822.40
71	132010	Providing & fixing brass bib cock of approved quality				
(i)	132011	Providing & fixing brass bib cock of approved quality 15 mm nominal bore	Each	15.00	154.55	2318.25
(ii)	132013	25mm nominal bore	Each	15.00	300.36	4505.40
72	132020	Providing and fixing brass stop cock of approved quality				
(i)	132021	Providing & fixing brass stop cock of approved quality 15 mm nominal bore	Each	25.00	151.88	3797.00
73	133050	Providing and laying S&S centrifugally cast (spun) iron pipes (Class LA) conforming to IS:1536 : upto 300mm dia.				
(i)	133054	150mm dia. Pipe	Meter	50.00	1764.42	88221.00
74	134090	Providing and fixing PTMT soap Dish Holder having length of 138mm breadth 102mm, height of 75mm with concealed fitting arrangements. Weighing not less than 106 gms	Each	5.00	995.13	4975.65

75	136040	Constructing masonry Chamber 120x120x100 cm, inside with 7.5 class designation brick work with FPS Bricks in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160mm bottom diameter and 180mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate-20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand :10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick finished with a floating coat of neat cement complete as per standard design.	Each	3.00	5887.89	17663.67
76	136150	Providing and placing on terrace/staging (at all heights) polyethylene water storage tank ISI:12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank	Liter	5000.00	6.43	32150.00
Basic cost of Chapter-13 Rs.						3,05,474.37
Add % above for Estimate @						25.52%
Total Estimated value of Chapter-13 Rs.						3,83,431.43
Chapter -14 : Drainage and sewerage						
77	142010	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes including bends etc with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete upto 800mm dia.				
(i)	142014	300mm dia. R.C.C. pipe	Meter	50.00	721.21	36060.50

78	142040	Providing and laying non-pressure NP3 class (medium duty) R.C.C. pipes including bends etc with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete above 800mm dia.				
(i)	142041	900mm dia. R.C.C. pipe	Meter	50.00	2641.08	132054.00
(ii)	142044	1200mm dia. R.C.C. pipe	Meter	300.00	5156.74	1547021.83
Basic cost of Chapter-14 Rs.						17,15,136.33
Add % above for Estimate @						78.93%
Total Estimated value of Chapter-14 Rs.						30,68,893.43
Chapter -15 : Sanitary Installations						
79	151010	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100mm sand cast iron 'P' or 'S' trap, 10 litres low level white P.V.C. flushing cistern with manually controlled device (handle lever) conforming to IS:7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required				
(i)	151011	White Vitreous China Orissa pattern W.C. pan of size 580mmx440mm with integral type foot rests	Each	3.00	3057.59	9172.77
80	151020	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litres low level white, P.V.C. flushing cistern with manually controlled device (handle lever) conforming to IS:7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required				
(i)	151021	W.C. pan with ISI marked white solid plastic seat and lid	Each	2.00	2856.65	5713.30

81	151050	Providing and fixing white, vitreous china flat back half stall urinal of 580mmx380mmx350mm with white P.V.C. automatic flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS:2556, C.I. trap with outlet grating and other coupling in C.P. brass including painting of fittings and cutting and making good the walls and floors, wherever required				
(i)	151051	Single half stall urinal with 5 litres P.V.C. automatic flushing cistern	Each	5.00	3798.11	18990.55
82	151070	Providing and fixing wash basin with C.I./M.S. brackets, 15mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls, wherever required :				
(i)	151071	White, vitreous china wash basin size 630mm x 450mm with a pair of 15mm C.P brass pillars.	Each	3.00	1942.55	5827.65
83	152020	Providing and fixing Stainless Steel AISI-304 (18/8) kitchen sink with drain board as per IS:13983 with C.I. brackets and stainless steel plug 40mm including painting of fittings and brackets, cutting and making good the walls, wherever required :				
(i)	152021	510mmx1040mm bowl depth 250mm	Each	1.00	2558.56	2558.56
84	152110	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	Each	3.00	706.70	2120.10

85	152120	Providing and fixing mirror of 5.5mm thickness of float Glass (of approved Quality) required shape and size with plastic moulded frame of approved make and shade with 6mm thick hard board backing				
(i)	152124	Rectangular shape 1500mm x450mm (outer dimension)	Each	2.00	1750.45	3500.90
86	153010	Providing and fixing soil, waste and vent pipes				
(i)	153012	100mm dia. centrifugally cast (spun) iron S&S pipe as per IS:3989	Meter	31.00	599.73	18591.63
87	153290	Providing and fixing PTMT Bottle Trap for Wash basin and sink :				
(i)	153292	Bottle trap 38mm single piece moulded with height of 270mm, effective length of tail pipe 265mm from the centre of the waste coupling 77mm breadth with 25mm minimum water seal, weighing not less than 270gms	Each	7.00	437.30	3061.10
88	153300	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 gms.	Nos.	7.00	185.84	1300.88
89	153320	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with C.P. brass screws with concealed fitting arrangement of approved quality colour and make :				
(i)	153390	Providing and fixing Shower rose (C.P.) brass with swivel joint having approx. weight 270 gm	Each	5.00	300.83	1504.15
(i)	153410	Providing and fixing Towel rail (C.P.) brass 15mm dia. x 600mm long having approx. weight 500 gm	Each	3.00	413.49	1240.47
90	153420	Providing and fixing C.P. brass Towel ring in trapezoidal shape having length of 215mm, width 200mm, minimum distance	Each	5.00	437.96	2189.80

		from wall 37mm with concealed fittings arrangements weighing approx. 90 gms				
91	153490	Providing and fixing PVC connector 15mm size with non-corrosive PTMT couplings in both ends				
(i)	153491	15mm dia. 300mm long	Each	10.00	48.20	482.00
(ii)	153492	15mm dia. 450mm long	Each	10.00	59.82	598.20
(iii)	153493	15mm dia. 600mm long	Each	10.00	77.24	772.40
92	153500	Providing and fixing Swan neck pillar tap (C.P. Brass) 15mm dia. with swinging spout having approx. weight 1000 gm	Each	5.00	430.15	2150.75
93	154010	Providing and fixing 110mm dia PVC soil, waste and vent pipes including jointing and cost of spun yarn and sand etc. complete	Meter	50.00	205.50	10275.00
94	154100	Providing and fixing 110mm PVC Plain bend of the required degree with access door inclusive of 3mm thick bitumastic felt washer, bolts and nuts, complete, including jointing and cost of spun yarn and sand etc. complete	Each	25.00	77.54	1938.50
95	154130	Providing and fixing 110mm PVC collar (loose socket) including jointing and cost of spun yarn and sand etc. complete	Each	25.00	73.17	1829.25
96	154140	Providing and fixing 75mm PVC soil, waste and vent pipes including jointing and cost of spun yarn and sand etc. complete	meter	25.00	128.17	3204.25
97	154150	Providing and fixing brackets comprising of aluminium painted steel clips and cast iron base for 75mm PVC pipes including cost of screws etc. and drilling of holes and making good the walls, including cost of sand etc. complete	Each	25.00	52.17	1304.25

98	155060	Supplying and fixing pipe as outlet or waste pipe to wash basins sink and bowl type urinals etc. complete including providing clamps to hold the pipe, making holes in masonry and making it good to original condition when not included in the item				
(i)	155063	PVC 50 mm bore 1.7mm thick	Meter	3.00	109.06	327.18
99	155070	Supplying and fixing granite stone superior quality black 20mm to 25mm thick in masonry or concrete as a Purdah to urinal range etc. stone to be machine cut & well polished on all faces and the edges to be moulded by semi-circular rounding and polishing. NOTE : The following percentage is to be added / deducted in case of granites other than superior quality black : i) For superior quality Red like "RBI" red add 15% extra; ii) For pink coloured granite deduct 25%; iii) For gray coloured granite deduct 18%.	Sqm	20.00	2449.89	48997.80
100	155200	Providing and fixing Flush valve (C.P.) 25mm with 25mm size control cock having approx. weight 2.75 kg conforming to IS:9758-1981	Each	6.00	1529.70	9178.20
101	155230	Supplying, fitting and fixing soap tray of size 150mmx150mm vitreous (concealed type) with all necessary fittings etc. completed as directed by the Engineer-in-charge	Each	5.00	306.35	1531.75
102	155240	Supplying and fixing approved quality chromium plated shirt hooks (One unit of 4 hooks) with all necessary fittings etc. complete and as directed by the Engineer-in-charge	Each	5.00	67.82	339.10
103	155250	P&F 127mm dia. C.P. steel Jali cockroach trap (CCTR-127) for gully floor or Nahani trap	Each	5.00	187.87	939.35

104	155260	Supplying and fixing 150mmx150mm HCI / CI Tee for septic tank as a complete job	Each	1.00	426.27	426.27
105	156010	Cutting chases in brick masonry walls for following diameter sand cast iron/centrifugally cast (spun) iron or any other types of pipes and making good the same with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 12.5mm nominal size) including necessary plaster and pointing in cement mortar 1:4 (1 cement : 4 coarse sand)				
(i)	156011	100mm dia.	Meter	50.00	129.28	6464.00
(ii)	156012	75mm dia.	Meter	50.00	92.25	4612.50
(iii)	156013	50mm dia.	Meter	50.00	58.94	2947.00
Basic cost of Chapter-15 Rs.						1,74,089.61
Add % above for Estimate @						22.47%
Total Estimated value of Chapter-15 Rs.						2,13,207.55
Chapter -17 : Misc. Building Works						
106	171100	Providing and fixing 16mm MS Fan clamps of standard shape and size in existing R.C.C. slab including cutting chase and making good with 1:2 C:S mortar and painting (two coats) exposed portion of the clamps complete	Each	20.00	123.05	2461.00
107	171690	Providing & applying Pre-Construction Anti-Termite treatment to proposed structure, with application of Imidacloprid 30.5% SC @ 0.075% concentration mixed with water in ratio of 1:475, as per detailed specifications given in Indian Railways Standard Specifications, so as to create a chemical barrier below and around the structure by an approved agency. (plinth area/ basement floor area shall be considered for payment)	Sqm	347.00	70.81	24571.07

Basic cost of Chapter-17 Rs.						27,032.07
Add % above for Estimate @						26.39%
Total Estimated value of Chapter-17 Rs.						34,165.83
Chapter -18 : Dismantling and Demolishing						
108	182010	Demolishing brick work including stacking of serviceable material and disposal of unserviceable material within 50m lead				
(i)	182013	In cement mortar	Cum	100.00	348.90	34890.00
109	182030	Demolishing stone rubble masonry including stacking of serviceable material and disposal of unserviceable material within 50m lead				
(i)	182033	In cement mortar	Cum	50.00	416.29	20814.50
110	182040	Dismantling dressed stone work, ashlar face stone work, marble work, including stacking of serviceable and disposal of unserviceable material within 50m lead				
(i)	182042	In cement mortar	Cum	50.00	486.91	24345.50
111	185010	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts in CC or masonry etc. complete and stacking within 50m lead	Each	20.00	84.12	1682.40
112	186010	Dismantling steel work in single sections including dismembering & stacking within 50m lead in				
(i)	186011	Dismantling steel work in single sections including dismembering & stacking within 50m lead in R.S. joists./ Rails	Kg	300.00	0.57	171.00
(ii)	186012	Channels, angles, tees and flats/ rounds or any other rolled shape	Kg	300.00	0.41	123.00
Basic cost of Chapter-18 Rs.						82,026.40
Add % above for Estimate @						43.10%
Total Estimated value of Chapter-18 Rs.						1,17,379.78

Chapter -19 : Bridge work Substructure						
113	195020	Providing and applying two coats of coal tar or bitumen conforming to IS:3117-1965 on the top and sides of RCC box/slabs @ 1.70 kg/sqm after cleaning the surface with all labour and materials complete job as directed by the Engineer	Sqm	210.00	108.60	22806.00
114	195030	Centering and shuttering including strutting, propping etc. and removal of form for :				
(i)	195038	In Bottom/top slab, side walls, toe wall and sumps haunch filling head walls or any other component	Sqm	766.00	191.20	146459.20
Basic cost of Chapter-19 Rs.						1,69,265.20
Add % above for Estimate @						76.43%
Total Estimated value of Chapter-19 Rs.						2,98,634.59
Chapter -22 : Bridge work Miscellaneous (Except item no. 222180)						
115	221060	Providing and laying pitching with stone boulders weighing not less than 35kg each with the voids filled with cement sand mortar 1:4 on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications (filter media to be paid separately under the relevant item)	Cum	155.00	1565.14	242596.70
116	222230	Painting the HFL and danger level marks, year of HFL on bridge abutments and piers with ready mixed paint as per standard in two coats over one coat of primer with all materials, labour, tools, scaffolding, all lead and lift etc. including writing complete	Each Mark	2.00	95.69	191.38

117	222240	Providing cast in situ bridge number plaques as per Railway drawing in cement concrete 1:2:4 mix using 20mm hard stone aggregate embedded in 30mm notch in Bridge parapet coping duly engraving the letter and figures and an arrow indicating the direction of flow and finishing the top exposed surface with cement mortar 1:3, painting letters and figures with two coats of black enamel paint on two coats of white background with all labour, tools, cement, paint etc. with all leads and lifts	Each	2.00	405.36	810.72
118	222260	Providing & laying non pressure NP-4 Class RCC pipe with collars, jointing with 1:2 cement and ordinary sand mortar including testing of joints, but excluding earthwork with all labour and material as a complete job. Cement for mortar will be paid separately.				
(i)	222261	600mm Dia	Meter	150.00	1302.56	195384.00
119	222290	Providing Boulder Backing behind wing wall, return wall, retaining wall with hand packed boulders & cobbles with smaller size boulders toward the back including all lead, lift, labour & other incidental charges as complete work in all respect. Payment for boulder/cobbles will be done extra.	Cum	4420.00	133.62	590600.40
Basic cost of Chapter-22 Rs.						10,29,583.20
Add % above for Estimate @						24.92%
Total Estimated value of Chapter-22 (Except item no. 222180) Rs.						12,86,155.33
Chapter -22 : Bridge work Miscellaneous Only item 222180						
120	222180	Providing and laying of filter media consisting of granular materials of GW, GP, SW groups as per IS:1498-1970 in required profile behind boulder filling of abutments, wing walls / return walls etc. above bed	Cum	10672.0 0	1492.93	15932548.96

		level with all labour and material complete job as per drawing and technical specification of RDSO Guidelines				
Basic cost of Chapter-22 (Only item 222180) Rs.						1,59,32,548.96
Add % above for Estimate @						46.79%
Total Estimated value of Chapter-22 (Only item 222180) Rs.						2,33,87,388.62
Chapter -23 : Road and Platform work						
121	231010	Preparation of subgrade by excavating earth upto 22.5cm depth, dressing to camber and consolidating with power road roller of 8 to 12 tonne capacity including making good the undulations etc. and disposal of surplus earth with lead upto 50m	Sqm	2990.00	36.75	109882.50
122	231020	Consolidation of subgrade with power road roller of 8 to 12 tonne capacity including making good the undulations etc with earth or quarry spoils etc. and re-rolling the subgrade .	Sqm	3530.00	1.19	4200.70
123	231040	Providing and laying water bound macadam with specified stone aggregate, stone screening and binding material including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc. complete				
(i)	231042	Base course with 63mm to 45mm size including stone screening 13.2mm size	Cum	24862.20	1297.96	32270141.11
124	233010	Providing and applying tack coat using bitumen emulsion (Rapid setting) complying with IS:8887-1995, spraying the bitumen emulsion with mechanically operated spray unit, cleaning and preparing the existing road surface as per specification				
(i)	233011	On W.B.M. @ 0.4kg/sqm	Sqm	3280.00	20.72	67961.60

125	235010	Providing and laying seal coat of premixed fine aggregate (passing 2.36mm and retained on 180micron sieve) with bitumen using 128 kg of bitumen of grade 80/100 bitumen and 0.60cum of fine aggregate per 100sqm of road surface including rolling and finishing with road roller all complete. Note - This should not be operated along with Hot mix carpeting	Sqm	3250.00	86.58	281385.00
126	238012	75mm average compacted thickness with bitumen of 60/70 grade @ 3.5% by weight of total mix	Sqm	3280.00	505.31	1657416.80
127	237050	Supplying and laying precast Kerb Stone of concrete M-25 Grade 30cmx20cm (in section / including chamfering as per design if any) including fixing in 1:6 cement sand mortar and pointing with 1:2 cement mortar (1 cement : 2 sand ordinary) including all excavation/refilling, ramming and other incidental works as required.	Meter	200.00	385.34	77068.00
128	238050	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and in accordance with applicable specifications	Sqm	81.00	500.35	40528.35
Basic cost of Chapter-23 Rs.						3,45,08,584.06

Add % above for Estimate @	28.72%
Total Estimated value of Chapter-23 Rs.	4,44,19,449.40
Total Estimated Value of Bill No.-1 Rs.	13,74,54,778.11

Bill No-2 : Indian Railways USSOR-2010 Items for Steel						
Chapter -4 : Reinforced cement concrete only item no. 045016						
S.No	USSOR Item No	Description of Item	Unit	Qty	USSOR Rate	Amount
1	045010	Supplying Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.				
(i)	045016	TMT deformed bars	Kg	781328.00	47.58	37175586.24
Basic cost of Chapter-4 (only item no. 045016) Rs.						37175586.24
Add % above for Estimate @						58.16%
Total Estimated value of Chapter-4 (only item no. 045016) Rs.						5,87,96,907.20

Bill No-3: Indian Railways USSOR-2010 Items for Cement						
Chapter -3 : Plain Concrete only item 033061, 033062, 033063 & 033064						
S.No	USSOR Item No	Description of Item	Unit	Qty	Rate	Amount
1	033060	Supply and using cement at worksite				
(i)	033061	OPC 43 grade	MT	1639.0 0	5474.0 0	8971886.00
Basic cost of Chapter-3 (only item no. 033061) Rs.						8971886.00
Add % above for Estimate @						56.03%
Total Estimated value of Chapter-3 (only item no. 033061) Rs.						1,39,98,833.7 3

Bill No-4: Indian Railways USSOR-2010 Items for Cement						
Sr. No	USSOR Item No	Description of Item	Unit	Qty	Rate	Amount
Chapter -9 : Flooring, Paving & Dado (only item 098022)						
1	098020	Supplying and laying interlocking pre-cast CC block pavers of approved design factory manufactured of specified grade cement concrete on passenger platform, foot paths, circulating area etc. including setting in position over 25mm thick bedding layer of filling the joints with fine sand, levelling including compaction as per IS 15658				
	098022	80 mm thick blocks of M-35 grade for light traffic	Sqm	120781.00	606.21	73218650.01
Basic cost of Chapter-9 (only item 098022) Rs.						73218650.01
Add % above for Estimate @ Rs.						37.05%
Total Estimated value of Chapter-9 (only item 098022) Rs.						10,03,46,159.84

Bill No-5 – NON-SCHEDULED ITEMS (Civil work)					
S.No	Description of Item	Qty	Unit	Rate	Amount
NS-1	Excavation in all kinds of soil (excluding rocks) in foundation & floor, wing walls, toe walls, return walls, drop walls & curtain walls of bridges and retaining walls including site clearance, to a given profile including levelling and dressing to neat dimensions, upto the required depth in all conditions, backfilling and disposal of the surplus excavated earth/debris/muck outside ROW including all lead, lift, ascends, descends, loading, unloading handling, re-handling, crossing of stream, nallahs, railway track, level crossing, etc., bailing/pumping out sub-soil water/seepage water/ rain water, sheet piling if required to ensure safety of running trains on adjacent tracks of IR, with all labour, material, tools, plants, machinery and equipment, taxes, cess, etc. as a complete job in accordance with the Specification and the approved drawings.	18684.00	Cum	258.32	48,26,450.88
NS-2	Providing and fixing Weep Holes in Abutments, Wing walls and Return walls etc., of new bridges with 110mm dia UPVC pipe Type A conforming to IS:13592 with all contractor's men, material, transportation, all taxes as per specifications and as directed by Engineer.	2826.00	Meter	267.21	7,55,135.46
NS-3	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding,	200.00	Kg	612.25	1,22,450.00

	buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, including fixing the railing with necessary accessories & stainless steel dash fasteners, stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)				
NS-4	<p>Casting, supplying and installing pre-cast concrete blocks of size 25X25X20 cm for protective works at bridges and slope of embankment using M-15 grade of concrete with 20mm aggregate size including shuttering, compaction & curing of concrete, leading to site from casting depot, including dressing and levelling of surface, laying & jointing blocks with cement mortar 1:3 with all material including cement, labour, lead & lift as directed by the Engineer.</p> <p>Note: i. Cost of cement is included in the above item.</p>	159.00	Cum	4303.00	6,84,177.00
NS-5	Construction of granular sub-base by providing Material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with Rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per technical clause 401 of MORT&H technical specifications	24156.00	Cum	1225.00	2,95,91,100.00

NS-6	<p>Providing and laying CC of specified grade as per approved plan and M-35 mix design, coarse sand and stone aggregate of 20mm nominal size for all heights and depths in pavements/ roads/ wearing coat etc Cost of supplying & fixing form work (centering & shuttering) is included in this item.</p> <p>Note:</p> <p>i. Cost of cement is included in the above item.</p> <p>ii) Cost of Reinforcement steel is not included in the above item and will be paid separately under item no. 1(i) of Bill No.2 (USSOR item No. 045016.</p>	22.00	Cum	7020.27	1,54,445.94
NS-7	<p>Hiring of 2 No. AC vehicle i.e. One No. Innova Crysta and one No. Scorpio on monthly basis for the use of HRIDC officers at Manesar, Gurugram for 3000Km. per month.</p> <p>The rates are inclusive all cost of maintenance, major/minor repairs, cost of lubricants, fuel, drivers, GST and other taxes etc. for a complete job. Toll Tax, Parking charge shall be paid extra on certification of officer using vehicle.</p>	30.00	Month	72166.67	21,65,000.10
i)	Extra charge beyond Km. 3000 per month per vehicle	6000	Per Km.	12.00	72,000.00
NS-8	Two coats of Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour and as per satisfaction of Engineer-in-charge	1188.00	Sqm	121.55	1,44,401.40

NS-9	Providing & Applying (2 coats of base coat + 2 coats of top coat) and 1 coat of textured paint (Asian Paint Apex Ultima protek + Finetex or equivalent) as per specification mentioned: Specification including cleaning surface with wire brush, remove loose dirt, flaking paint algae, fungus mortar dropping etc. thereafter wash and rinse the surface with clean water including MS tubular scaffolding (H Frame) up to 3 floor height, all materials, labours, tools and tackles, loading and unloading, transportation complete as per direction of EiC	800.00	Sqm	433.02	3,46,416.00
NS-10	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.				
a)	20 mm nominal dia Pipes	50.00	Meter	513.75	25,687.50
b)	25 mm nominal dia Pipes	50.00	Meter	626.05	31,302.50
c)	32 mm nominal dia Pipes	50.00	Meter	712.75	35,637.50
NS-11	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white	2.00	Each	13036.65	26,073.30

	vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete.				
NS-12	Providing and laying in position ready mixed or site batched design mix cement concrete of M-25 grade for plain cement concrete work ; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering and finishing as per direction of the engineer-in-charge.				
a)	All works upto plinth level	122.00	Cum	8599.50	10,49,139.00
NS-13	Providing and laying in position ready mixed or site batched design mix cement concrete of M-25 grade for reinforced cement concrete work ; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of				

	centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge Note: i. Cost of cement is included in the above item. ii. Cost of Reinforcement steel is not included in the above item and will be paid separately under item no. 1(i) of Bill No.2 (USSOR item No. 045016) iii. Cost of supplying & fixing form work (centering & shuttering) is not included in the above item and will be paid separately under relevant itemof Bill No.1 (USSOR Chapter-19)				
a)	All works upto plinth level	13.00	Cum	7997.30	1,03,964.90
b)	All works above plinth level upto floor V level	488.00	Cum	10080.15	49,19,113.20
NS-14	Providing and fixing Granite stone slab colour black, Cherry/Ruby red 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels and as per direction of the engineer-in-charge.	30.00	Sqm	4425.35	1,32,760.50
NS-15	Providing temporary steel barricading 2.0mtr. High and making arrangement for traffic diversion such as traffic plan during construction	553.00	Meter	820.65	4,53,819.45

	<p>period at site for day and night as per requirement and as per HRIDC type drawing . This item will be payable only once during the entire construction period till completion of work. The arrangement of barricading and traffic diversion has to be kept continuously . This shall include repositioning and repainting of barricading and provision of suitable reflectors and red lamps at night. The dimensions of barricades as given in drawing with all labour and material as a complete job. Nothing extra will be paid for fixing and other arrangements.(The released barricades will be the property of the contractor). Work will be executed as per specifications.</p>				
NS-16	<p>Providing and fixing glazing in door, window, ventilator shutters and partitions etc. with EPDM rubber/neoprene gasket etc. complete as per the architectural drawing and the direction of Engineer-in-charge.(cost of Aluminium snape beading shall be paid in the basic item.</p>				
a	<p>With toughened glass panes of 6mm thickness.</p>	60.00	Sqm	1365.00	81,900.00
b	<p>With toughened glass panes of 8mm thickness.</p>	15.00	Sqm	1595.00	23,925.00
c	<p>With toughened glass panes of 12mm thickness.</p>	15.00	Sqm	2300.00	34,500.00
NS-17	<p>Fixing of aluminium section including all necessary screws/dash fasteners including filling of gaps with required neoprene gasket /EPDM etc. and the direction of Engineer-in-charge. Aluminium section will be paid relevant USSOR item-2010 separately.</p>	200.00	Kg	88.70	17,740.00

a	Extra for providing frosted glass (Toughened glass cost to be paid in NS-16(a) or(b) or (c) as per use.	50.00	Sqm	529.00	26,450.00
NS-18	Providing and fixing maple wood band with melamine finish.				
a	100mm wide	20.00	Meter	273.22	5,464.40
b	58mm wide	100.00	Meter	182.92	18,292.00
NS-19	Providing and fixing in position laminated panels consisting of 9mm commercial ply & 1.5mm laminate with 12mm groves between adjacent panels. Inside of grooves to be filled with aluminum U channel, top ledge to be finished in maple wood ,as per detail complete in all respect	50.00	Sqm	3441.26	1,72,063.00
NS-20	Providing and fixing door frames in first class maple wood of section 100x38mm with rebate and holdfasts ,to be finished in melamine polish all complete.	110.00	Meter	817.55	89,930.50
NS-21	Providing and fixing door frames in first class maple wood of section 125x62mm with rebate and holdfasts ,to be finished in melamine polish all complete.	30.00	Meter	1107.88	33,236.40
NS-22	Providing and fixing door frames in first class maple wood of section 150x62mm with rebate and holdfasts ,to be finished in melamine polish all complete.	30.00	Meter	1207.88	36,236.40
NS-23	Waterproofing : Providing and applying one coat of primer (anti-efflorescence primer product DURA SHORASEAL as per manufacturer's specification dilute with water) over the surface. This should cover 7-8 sqm/kg, allow it to be dry for 5-6 hours. Apply three coats oa Acrylic based Microfiber Reinforced (40gsm),heavy duty waterproofing cum insulation	350.00	Sqm	500.00	1,75,000.00

	coating DURA KOTEKOOL over the entire area at the rate of 1.5-2 sqm/lit for each coat. Allow it to dry before taking up second and third coat ,the rate of application being the same. Total thickness will be 1.5mm.Top Coat must be white/grey mineral. The polyester fibre mesh(40gsm) will be sandwiched between the first and second coats and cost is included.				
NS-24	Providing and fixing of roof tiles of 10mm thick mat finish vitrified tile of Orient bell(Cool roof tiles SRI-103) ,water absorption (avg=<0.5%), as per approved shade laid in required pattern with 3mm groove as per company recommended spacer on base of adhesive of Latecrite make including the preparation of sub base roof if required . Tiles joints /grooves to be filled with water proof epoxy grouted of Latecrite make. Make: Orient bell type :cool roof vitrified tile,thickness-10mm SRI-103,Water absorption< 0.5%, Reflectance-0.82,Emissivity-0.87,Modulus of rupture>38N/mm2,Breaking strength> 1800 N,Size:300x300mm	350.00	Sqm	1499.87	5,24,954.50
NS-25	Providing and fixing G.I. gratings/stainers made of MS flat with hot dip galvanised coating 80-100 micron.	1000.00	Kg	141.98	1,41,980.00
NS-26	Providing and fixing of Hollow metal Steel door at all levels from ISO 9001-2000 certified Manufacturer. Fully flush type of 46 mm thick Pressed Galvanized steel conforming to IS 277,Single / Double leaf to any size & shape, of SHAKTI MET-DOR make	34.00	Sqm	14884.45	5,06,071.30

	<p>which consists of frame, shutter, infill and finish as detailed below Door frame shall be single rebate profile of size 100 x 57 mm with bending radius of 1.2 mm having 1.20 mm thick galvanized steel sheet (18 gauge). Steel door shutter of 46 mm thick, fully flush, double skin door shall be manufactured from 0.80 mm thick galvanized steel sheet (22 gauge). The stile edges to be lock seamed with no weld marks. The infill material shall be resin bonded honey comb Krah paper with thermal insulation. Door frames and shutter shall be finished with Epoxy (35 microns OFT) of approved colour. Rate shall include for supply and fix 3 mm thick base plates, all joints of frames with provision for anchor bolt fixing to wall I RC surface, reinforcement pad for fixing of door closers, factory finish, pre-punched cut outs to receive hardwares and iron mongery, 3 mm thick hinge plates predrilled to receive hinges for screw mounted fixing.</p>				
NS-27	<p>Providing & Fixing of Armstrong Mineral Fibre Acoustical Suspended Ceiling System with Classic Max (Bevelled Tegular) Edge Tiles With Armstrong 15mm Exposed GRID. The tiles should have Humidity Resistance (RH) of 99%, NRC 0.7, Light Reflectance 87%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Colour White Fire Performance UK Class 0 I Class 1 (BS 476 pt - 6 & 7) in module size of 600 x 600 x</p>	188.00	Sqm	1358.35	2,55,369.80

<p>17mm suitable for Green Building application with Recycled content of 60% .The tile shall be laid on Armstrong Silhouette profile grid system with 15mm white flanges incorporating a 6mm central reveal in white/black colour and with a web height of 45mm and a load carrying capacity of minimum 15.68 Kgs/M2 & minimum pull out strength of 100 kgs.. Silhouette, Main Runners & Cross Tees to have mitred ends & "birdsmouth" notches to provide mitred cruciform junctions. The T Sections have a Galvanizing of 90 grams per M2 and need to be installed with suspension system of Armstrong make. The Tile & Grid system used together should carry a 30 year warranty.</p> <p>INSTALLATION: To comprise main runner spaced at 1200mm centres securely fixed to the structural soffit using Armstrong suspension system (specifications below) at 1200mm maximum centre. The First/Last Armstrong suspension system at the end of each main runner should not be greater than 450mm from the adjacent wall.</p> <p>Flush fitting 1200mm long cross tees to be interlocked between main runners at 600mm centre to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm module to be formed by fitting 600mm long flush fitting cross tees centrally between the 1200 mm cross tees. Perimeter trim to be Armstrong wall angles of</p>				
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	size 3000x19x19mm, secured to walls at 450 mm maximum centres. ARMSTRONG SUSPENSION SYSTEM accessories manufactured and supplied by Armstrong World Industries consisting of MG Anchor Fasteners with Vertical Hangers made of Galvanised steel of size 26 x 26 x 25 x 1.2mm with a Galvanised Thickness of 80gsm, A pre Straightened Hanger wire of dia - 2.5 mm of 1.8 m length, thickness of 80gsm and a tensile strength of 344- 413 MPa, along with Adjustable hook clips of 0.8mm thick, galvanised spring steel for 2.68 mm with a minimum pull strength of 110 kg. The adjustable clip also consists of a 3.5 mm aquiline wire to be used with the main runner.				
NS-28	Manufacturing, supplying & fixing of pre-fabricated RCC coping stone of size 530mm x 1125mm x 100mm thick as per top face designed and approved by site Engineer with M-30 grade RCC with 8 mm dia. tor steel at 150mm c/c both ways and manufactured by vibro compaction process using jointless FRP/GRP steel moulds of required size, shape & design. The item includes cost of cement, reinforcement, transportation etc. (Note : Under layer of cement mortar to be laid as per site conditions & should be paid for separately)	582.00	Each	1311.28	7,63,164.96
Total of Bill No-5 Rs.					4,85,45,352.89

Bill No-6 – NON-SCHEDULED ITEMS (Civil work)					
S.No	Description of Item	Qty	Unit	Rate	Amount
NS-29	<p>Supplying and laying in position M-35 RCC in Pile Caps, RCC Box/Sub way, Piers, Abutments, Pier Cap, Abutment Cap, Pedestals, Retaining wall, wing walls, Return walls, drop walls, curtain walls & toe walls of all heights as per approved design mix with admixtures and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all lifts & leads, having continuous agitated mixer, pumping concrete from transit mixer to site of laying, compacting, finishing & curing, with all labour, material, tools, plants, machinery and equipment, taxes, cess etc., as a complete job including cement in accordance with the Specification and the Drawings, but excluding supplying & fixing form work (centering & shuttering) and excluding Reinforcement steel.</p> <p>Note:</p> <p>i. Cost of cement is included in the above item.</p> <p>ii. Cost of Reinforcement steel is not included in the above item and will be paid separately under item no. 1(i) of Bill No.2 (USSOR item No.045016).</p> <p>iii. Cost of supplying & fixing form work (centering & shuttering) is not included in the above item and will be paid separately under relevant item of USSOR</p>	1484.00	Cum	7648.14	1,13,49,839.76

NS-30	<p>Providing and laying , including transportation, launching and fixing in position specified grade RCC (M-35) precast Retaining wall as per approved plan and mix design with coarse sand and stone aggregate of 20mm and down gauge in various structure for all heights and depths including compaction of concrete by electric/mechanical vibrator, providing and using admixture in recommended proportion as per IS 456 & IS9103, IRS concrete bridge code and bridge sub structure code applicable & as per approved mix design complying with minimum cement content maximum water cement ratio and slump as specified, produced by automatic RMC plant transporting concrete by transit mixture and placed using concrete pump, tremie pipe and crane etc. including designing of concrete mix, finishing the exposed surface of concrete, curing of concrete as required in IRS –Concrete Bridge Code and bridge sub structure code/OS Codes as applicable, including all lead by transit mixer , lift, pumping, ascend descend, loading unloading, handling, wastages if any, cost of all safety works and safety precautions with all labour, arrangements for cold weather and hot weather concrete as applicable, taxes and royalty etc, as a complete job as per specification and as per directions of Engineer in charge. Nothing extra will be paid on any account. The rate will also include cost of OPC cement ,including shuttering and admixture (Plasticizer, super plasticizer, or retarder</p>	2939.00	Cum	8246.41	2,42,36,198.99
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	<p>etc) as per approved mix design. Joint will be made good all above work will be done as per Engineer-In-Charge satisfaction.</p> <p>Note: 1. Reinforcement steel including cutting, straightening, hooking, bending, binding, placing and keeping and maintaining in position will be arranged by contractor and payment of reinforcement steel will be made separately under relevant items of USSOR:2010.</p> <p>2 Shuttering for execution for this work is included in this item.</p> <p>3.Providing and laying , including transportation, launching and fixing in position of Retaining wall in blocks. Rates are included in this item.</p> <p>4. Binding wire for maintaining reinforcement in position will be Provided by the contractor free of cost and no separate payment will made for binding wire.</p> <p>5.Weep hole will be paid separately under relevant items of USSOR: 2010.</p> <p>Mode of Payment :</p> <p>(a) 60% payment against this item will be made after Casting.</p> <p>(b) 30% payment against this item will be made after erecting/launching in position.</p> <p>(c) Balance 10% payment against this item will be made after filling joints good and finishing with all respect as per specification of Engineer -in - charge.</p>				
Total of Bill No-6 Rs.					3,55,86,038.75

Bill No-7 – NON-SCHEDULED ITEMS (Civil work)					
S.No	Description of Item	Qty	Unit	Rate	Amount
NS-31	<p>Earthwork in embankment for 32.5 T axle load as per RDSO specification No. RDSO/2020/GE:004 September 2020 “Comprehensive Guidelines and Specification for Railway Formation” with contractor’s own earth from borrow areas including all lead, lift, ascent, descent, royalty, taxes, cess, compensation, crossing of nallahs /stream and other obstructions including mechanical compaction in layers with watering, handling, re-handling, dressing of banks to the final profile with all labour, material, tools, plant, machinery and equipment, taxes, cess etc. as a complete job in accordance with the Specification and the Drawings. This item also includes dressing of existing ground surface after removal of all vegetation and making up the surface (average excavation or filling upto 15 cm) in all kinds of soil upto 1m extra on either side of the proposed toe and as per satisfaction of Engineer-In-charge.</p> <p>Note: 10% of payment shall be withheld till the slopes are dressed to the required profile and compacted mechanically with vibratory rollers as per RDSO guidelines</p>	373327.00	Cum	342.00	12,76,77,834.00

NS-32	<p>Supplying and laying blanketing material produced through mechanical means using crushers and pug mill for 32.5T axle load as per RDSO specification No.RDSO/2020/GE:004 September 2020 “Comprehensive Guidelines and Specification for Railway Formation” over the top of subgrade including all lead, lift, ascent, descent, royalty, taxes, cess, crossing of nallahs /stream and other obstructions including mechanical compaction in layers not exceeding 300 mm thick with vibratory rollers, watering, handling, re-handling and dressing of formation to the final profile with all labour, material, tools, plants, machinery and equipment, taxes, cess etc. as a complete job in accordance with the Specification and the Drawings and as per satisfaction of Engineer-In-charge.</p> <p>Note: 10% of payment shall be withheld till the slopes are dressed to the required profile and compacted mechanically with vibratory rollers as per RDSO guidelines</p>	8264.00	Cum	2254.19	1,86,28,626.16
Total of Bill No-7 Rs.					14,63,06,460.16

Bill No-8: - Supply of Fittings for P-Way

S.No	Description of Item	Unit	Qty	Rate	Amount
NS-33	Supply of 60 kg 1 in 8.5, 6400mm Overriding Curved Switch conforming to RDSO Drg. No. T-4965/T-4966 with latest alteration, if any	Set	16.00	150009.00	2400144.00

	complete with all parts as listed in the drawing with check rails (excluding fish plates, Fish bolts & nuts, GRSPs, Liners and ERCs) and as per satisfaction of Engineer-in-charge. Note: Rails will be issued free of cost by the employer.				
NS-34	Supply of 60 kg CMS Crossing for 1 in 8 ½ PSC Layout conforming to RDSO Drg No. T-4967 with latest alterations complete with all parts as listed in the drawing (excluding fish plates, fish bolts & nuts, GRSPs, Liners and ERCs) and as per satisfaction of Engineer-in-charge	Set	16.00	344911.00	5518576.00
NS-35	Supply of GFN Liners (60 Kg) to RDSO Drg. No. T-6938 and T-6939 for wider sleepers and as per satisfaction of Engineer-in-charge.	Set	22232.00	52.00	1156064.00
NS-36	Supply of Metal Liners for use with ERC MK-V on 25 T concrete sleepers to RDSO Drg. No. T-8616 and T-8617 and as per satisfaction of Engineer-in-charge.	Set	559.00	124.00	69316.00
NS-37	Supply of 10 MM thick Composite Grooved Rubber Sole Plate (CGRSP) to RDSO Drg. No. T-8528 for wider sleepers and as per satisfaction of Engineer-in-charge.	Each	22793.00	107.00	2438851.00
NS-38	Supply of Grooved Rubber Sole Plates for Turnout 1 in 8 1/2 for layout drawing no. T-4865 with latest alterations if any, complete set for the turnout as per IRS specifications for Grooved Rubber Sole Plates (6mm thick) for placing beneath rails Sl.no. T-47-2006 with up to date corrigendum, if any and as per satisfaction of	Set	16.00	57310.00	916960.00

	Engineer-in-charge. Note: Details of GRSP are contained in three drawings of Layout assembly, Switch and Crossing- RDSO Drg. No. T-4865, T-4966 & T-4967 respectively				
NS-39	Supply of ERC MK -V to RDSO Drg. No.T-5919 and as per satisfaction of Engineer-in-charge.	Each	45586.00	132.00	6017352.00
NS-40	Fabricating & supplying of 60 Kg improved SEJ with 80mm max. gap as per Drawing No. RDSO/T-6902 with latest alteration including all fixtures and fastenings etc. complete as directed by Engineer-in-charge. Rails will be supplied free of cost by the Employer.	Set	16.00	212881.00	3406096.00
NS-41	Supply of 60 Kg Fish Plate and as per satisfaction of Engineer-in-charge.	Each	300.00	1918.15	575445.00
NS-42	Supply of fish bolts with nuts for 60 KG rails as per RDSO Drawing No.T-1899 and as per satisfaction of Engineer-in-charge.	Each	1460.00	108.00	157680.00
NS-43	Supply of 60 KG, 1 m long Fish plates as per RDSO Drawing No. T -5916 and as per satisfaction of Engineer-in-charge.	Each	374.00	2788.00	1042712.00
NS-44	Supply of screw clamps for fish plates as per RDSO Drg No. T-5856 and as per satisfaction of Engineer-in-charge.	Each	674.00	1552.40	1046317.60
NS-45	Supply of joggled fish plates (2 Nos. per set) with 4 pair clamps, 4 Nos. Bolts & Nuts and 8 Nos. special washers for 60 KG rail as per RDSO Drawing No. T-5849 and as per satisfaction of Engineer-in-charge.	set	25.00	6321.00	158025.00

NS-46	Supplying at site of work including leading, loading, unloading and stacking PSC turnout sleepers and approach sleepers for fanshaped layout of 60 Kg 1 in 8.5 turnout for B.G 60 Kg. (UIC) rail to RDSO Drg. No. T-4865 (for general layout) and drawings thereof with latest alterations if any , complete set with contractor's labour, materials, tools & Plant, equipment and machinery, transport etc complete and as per satisfaction of Engineer-in-charge.	Set	16.00	470110.00	7521760.00
NS-47	Supply of Wider PSC sleepers for level crossings as per RDSO Drawing No. T-8671 for 60 KG rail and as per satisfaction of Engineer-in-charge.	Each	1083.00	4469.99	4840999.17
NS-48	Supplying at site of work including leading, loading, unloading and stacking PSC sleepers for SEJ as per RDSO Drawing No. T-4149 for 60 kg rail and as per satisfaction of Engineer-in-charge.	Set	16.00	32913.00	526608.00
NS-49	Maintenance of track after commissioning at normal sectional speed till track is handed over to the Railway by deploying 1 gang of 25 suitable persons headed by qualified P. Way supervisor. Attention to track to be done as per requirement to keep the track parameters within prescribed limits as per IRPWM for the sectional speed and as per satisfaction of Engineer-in-charge. Note: In case additional/less gang deployment is done as per direction of the engineer, the payment shall be appropriated proportionately	Week	52.00	150789.00	7841028.00
Total (in Rs.)					4,56,33,933.77

Bill No-9 :- Linking of P-way Work					
S.No	Description of Item	Unit	Qty	Rate	Amount
NS-50	<p>Supply of machine-crushed stone ballast on cess as per RDSO specifications for track ballast: IRS-GE-1 of June, 2016 from outside railway limits stacked in specified quantities alongside the proposed alignment on either side of track, in yards and at locations as per site requirement as directed by the Engineer.</p> <p>Note:- 1. Payment will be made on actual stack measurement for gross quantities without any deduction for voids in following stages: (i) 95% on receipt at site, acceptance, measurement, account, proper storage and protection against loss, damage or deterioration; and (ii) balance 5% after training out. 2)The rate also includes levelling, dressing of ground for stacking of ballast.</p>	Cum	16293.00	1656.42	2,69,88,051.06
NS-51	<p>Installation of BG track with wider 60 kg PSC sleepers as per drawing no. RT-8527 and UIC 60 Kg (Grade 880), Industrial Use Rails as per methodology specified in Subclause of the Technical Specifications of Tender Documents or any other methodology approved by the Employer in all locations e.g. straight, curves, bridges, level crossings, yards etc. including installation of SEJ and glued joints, initial packing, two rounds of through packing and picking-up of slacks as detailed in note ii below, pairing of new</p>	TRM	7100.00	709.00	5033900.00

	<p>rail panels.</p> <p>Note:</p> <p>i. 50% of the rate shall be paid after placement of the sleepers, fastening, initial squaring, initial alignment (generally corrected by eye sight) and correcting sleepers spacing and kutchu packing.</p> <p>ii. Next 20% of the rate shall be paid after initial and 1st manual/off-track tamper packing, lifting, levelling, aligning of the track and making fit for movement of moped trolley/motor trolley/material trolley/ ballast lorry.</p> <p>iii. Next 10% of the rate shall be paid after 2nd manual packing including picking up of slacks between 1st and 2nd packing and bringing the parameters within the prescribed tolerance limits to make track fit for 45 Km/h for working of track machines/material trains/wiring trains etc., and is certified so by the Engineer.</p> <p>iv. Next 10% of the rate shall be paid after through rail renewal with new rail panel/free rail.</p> <p>v. Balance 10% of the rate shall be paid after picking up of slacks etc for making the fit for CRS inspection.</p>				
NS-52	<p>Installation of PSC fan shape turnouts, derailing switches 60 KG / 52 KG including lead rails as per RDSO layout drawings including katchu packing with bars or off track tampers for 20 KMPH speed. Activities of rail cutting, drilling of holes, welding of joints and transportation are not included in this item and shall be paid separately under relevant items.</p>				

a	Turnouts 1 in 8-1/2	Each	16.00	74427.00	1190832.00
NS-53	Fabrication of Check rails of 60 KG rail sections for level crossings, curves, etc. on PSC sleepers including all fittings as per RDSO drawing. Rails will be issued free of cost by the employer.	Meter	1407.00	1186.81	1669841.67
NS-54	<p>Leading of ballast stacked on the formation or on the cess upto 50m lead and putting it in track/formation, from measured stacks by contractor's own mechanical means such as JCB/Dozer or by manual means uniformly in following phases: (i) Laying of first layer to form level bed for sleepers with top surface dressed including mechanical compaction; (ii) Filling ballast in cribs and making up shoulders; and (iii) Recouping shortages after each packing and finally making profile as per IRPWM.</p> <p>Note:</p> <ol style="list-style-type: none"> 1. Payment shall be by pre stack measurements. 2. The complete ballast from the measured stacks, ordered by Engineer for dumping in track, is to be put into track. The left over ballast after lifting by mechanical means shall be lifted manually and put in the track. If any quantity of ballast is not lifted after Engineer's directions, then the Engineer shall assess the quantity left over on the ground and recover the cost of supply of that much quantity of ballast and also deduct such quantity from the stack measurements for payment under the item. The decision of Engineer regarding quantity of left over ballast shall be final and binding on the contractor. 3. The rates for item includes 	Cum	15153.00	160.00	2424480.00

	<p>the cost of re-handling of ballast if any, required.</p>				
<p>NS-55</p>	<p>Leading of ballast from measured stacks by means of contractor's own road lorry or/and rail wheel lorry that can run on BG track including loading, leading and unloading either by mechanical means or manually by contractor at required site and putting the same into track/formation in following phases: (i) Laying of first layer to form level bed for sleepers with top surface dressed including mechanical compaction; (ii) Filling ballast in cribs and making up shoulders; and (iii) Recouping shortages after each packing and finally making profile as per IRPWM (All labour, lorry, fuel, consumables etc. by contractor).</p> <p>Note:</p> <ol style="list-style-type: none"> 1. Payment by pre stack measurements. 2. The complete ballast from the measured stacks, ordered by the Engineer for dumping in track, is to be put into track. The left over ballast after lifting by mechanical means shall be lifted manually and put in the track. If any quantity of ballast is not lifted after Engineer's directions, then the Engineer shall assess the quantity left over on the ground and recover the cost of supply of that much quantity of ballast and also deduct such quantity from the stack measurements for payment under the item. The decision of Engineer regarding quantity of left over ballast shall be final and binding on the contractor. 3. The rates for item includes 				

	the cost of re-handling of ballast if any, required.				
a)	(i) Total Lead exceeding 50 m but up to 5km	Cum	5000.00	315.00	1575000.00
NS-56	<p>Fabricating of in situ Glued Insulated Rail Joints G3 (L) type as per RDSO drawing no. T-2572 for broad gauge 60 Kg rail section as per MANUAL FOR GLUED INSULATED RAIL JOINTS (Revised 1998) with latest amendments including contractor's labour, materials, loading, unloading and transportation, rail cutting, cleaning of ends, drilling of holes in rails, hole chamfering etc. complete. The work will be executed in running lines during block period as per directions of Engineer incharge at site.</p> <p>Note: (1) 90% payment shall be made on fabrication of joint and its passing of dimensional and insulation resistance tests. Balance 10% payment shall be released after passing of Pull Out test for the lot. (2) The contractor shall get the above work executed through agencies/vendors approved by RDSO for manufacture and supply of glued insulated rail joints. (3) The input materials shall be procured from RDSO approved suppliers only. (4) Dimensional accuracy and insulation resistance of each of the fabricated in situ glued joint shall be tested in order to ensure that it is conforming to the Manual. (5) Pull Out test for at least one glued joint from every 50 nos. of glued joints shall be carried out in lab as detailed in manual of glued joint. No payment shall be</p>	Each	10.00	27396.00	273960.00

	made for transportation from site of work to lab, testing of joint and bringing back the rails after dismantling of tested joint. (6) The defect liability period for the glued joint shall be 90 days from date of in situ fabrication and the contractor has to attend/repair the glued joint in case any defect arises during the defect liability period.				
NS-57	Cutting of 60 KG rails with contractor's Abrasive Disc Cutter complete including men, material, fuel etc. true to square.	Each	400.00	511.00	204400.00
NS-58	Drilling 26.5 MM, 32 MM diameter holes with Rail Drilling Machine in web of 60 KG, 52 KG, 90 R rails in track or on cess at correct locations including chamfering.	Each	1460.00	123.00	179580.00
NS-59	First and second manual through packing of points and crossing including gauging, fittings recouplement, elimination of sag and to the required alignment as per provisions of Indian Railways Permanent Way Manual for raising the speed from 20 kmph to 45 kmph. NOTE: The rate includes 1st through packing on 2nd day after relaying on Day 1 (laying of turnout will be paid separately under relevant item of BOQ), 2nd through packing on 3rd day and Picking up of slacks, as required, from 4th to 9th day.				
a)	1 in 8-1/2 Points & Crossing	Each	16.00	19252.00	308032.00
NS-60	De-stressing of LWR/CWR track with 60 KG rails at appropriate rail temperature as per LWR manual and as per directions of the engineer including adjustment of gap at SEJ, squaring & correct spacing of sleepers disturbed during the work, including greasing of ERC as per IRPWM. Payment for cutting of rails shall be made separately under relevant item.	TKM	7.10	30395.00	215804.50

NS-61	<p>Flash butt welding of 60 KG rails and panels, as per manual for flash butt welding of rails 1996, in track or outside track, in depot or in mid section for making panels including removing and refixing the fittings, creating required gap by pulling the rails, handling of rails. Ultrasonic testing of welded joints shall be paid separately.</p> <p>Note: The payment for the item shall be made in the following stages: i) 70% payment on completion of welding of joint ii) 20% payment on completing of grinding of joint iii) 10% payment on completion of USFD test</p>	Each	1092.00	5494.00	5999448.00
NS-62	USFD testing of 60 KG rail welds (Flash Butt / SKV) as per RDSO Manuals and submitting reports on proforma as directed by the Engineer.	Each	1092.00	213.00	232596.00
NS-63	Alumino thermit welding of 60kg rail joints or combination joints of 60kg/52kg rail by pre-heat (SKV) welding technique using compressed air petrol/LPG for preheating, three piece pre-fabricated moulds (Zircon washed) single shot crucible fitted with automatic tapping thimbles with all labour, materials including supply of portion, tools and plants, aligning of rails, placing & fixing of mould, preheating, welding, mechanised trimming, grinding with profile grinder (including riser), testing, marking, painting with one coat of high build epoxy paint (two pack conforming to RDSO specification no. M&C/PCN-111/88) on the welded area up to 10 cm on either side. The work is to be completed in all respects as per IRS: T-19-2012 with				

	<p>latest updates and in accordance with “RDSO Manual for Fusion Welding of Rails by Alumino Thermic Process with up to date correction Slips in free rails or 3/10/20 rail panels. The work to be done under supervision of trained welding supervisor and carried out by trained welder having valid competency certificate from RDSO/TPP, Lucknow. Ultrasonic testing of welded joints shall be paid separately under relevant items.</p> <p>Note:</p> <p>1) In case only portion is supplied by the contractor but welding is not done, the rate shall be payable @ 60% of the item rate.</p> <p>2) In case welding portion is supplied free of cost by the Employer, the rate shall be payable @ 40% of the item rate.</p> <p>3) The above provision in note (1) & (2) shall be operated with the specific approval of CPM/HRIDC.</p>				
(i)	For 60kg,UTS rails	Each	400.00	12256.00	4902400.00
NS-64	Supplying and fixing Boards for LWR and curves , made of 16 gauge M.S. Sheet with ISA 40x40x5 MM frame and ISA 75x75x6 MM posts as per drawings duly painted and lettered with luminous paint.	Each	23.00	3728.00	85744.00
NS-65	Fouling marks of size 1500x250x225 MM in M20 grade cement concrete including engraving the letters “FM”, white washing with two coats and painting the letters in black enamel paint indicating the numbers of vehicles duly fixed at site.	Each	8.00	838.00	6704.00
NS-66	Supplying & fixing of M-25 grade RCC gradient post and km post as per standard type plan of Northern Railways (NR) at nominated places (i.e at every grade change point and every full kilometre location). All	Nos.	10.00	2500.00	25000

	materials will be arranged by the contractor including fixing, painting, with all lead, lift, labour and T&P, ascent, descent for completing the job . The rates are inclusive of cost of all materials such as cement, Reinforcement steel, binding wire, shuttering, aggregate, water, paint, excavation for foundation concrete and back filling, transportation of posts to site and fixing in position inclusive of all lift & lead, taxes, royalties etc. complete. Reinforcement steel including cutting, straightening, hooking, bending, binding, placing and keeping and maintaining in position will be arranged by contractor at his own cost.				
NS-67	Shifting of P. Way materials such as rails, sleepers, points and crossings, fastenings etc. and stacking at the nominated place upto 250 m lead as directed by Engineer-in-Charge including all lift, labour, tools and machinery etc. complete				
a)	For lead upto 50 m	MT	5594.00	170.00	950980.00
b)	Extra for lead for every 50 m or part thereof beyond initial 50 m lead	MT	5594.00	25.00	139850.00
NS-68	Anticorrosive painting of 60 KG, rails. Painting to be done prior to installation on sleepers including touching of paints in areas damaged during fixing.	TRM	8507.00	81.00	689067.00
NS-69	Painting of particulars of 1 in 16, 1 in 12 and 1 in 8 ½ turnouts and derailing switches including turn in curves on the inside web of outer rail with stencils of specified height in black enamel paint on surface of specified length painted with two coats of yellow enamel paint over a primer coat painted after cleaning the surface free from dust and dirt.	Turnout	14.00	1363.00	19082.00

NS-70	Loading, leading, unloading and stacking of PSC line sleepers 60Kg, and level X-ing/guard rail sleepers including all lead, lifts, etc as a complete job				
a)	Lead up to 1 km over 500 mtr free lead.	MT per Km	2590.00	112.15	290468.50
b)	Additional lead to item (a) above for every subsequent Km or part thereof over 1 Km and upto 5 km. (i.e 4 Km)	MT per Km	10360.00	5.11	52939.6
c)	Additional lead to item (a) & (b) above for every subsequent Km or part thereof over 5 Km and upto 10 km. (i.e 5 Km)	MT Per Km	12950.00	4.64	60088.00
d)	Additional lead to item (a),(b) & (c) above for every subsequent Km or part thereof over 10 Km and upto 20 Km. (i.e 10 Km)	MT per km	25900.00	1.15	29785.00
e)	Additional lead to item (a), (b), (c) & (d) above for every subsequent Km or part thereof over 20km and up to 50 Km. (i.e. 30 Km)	MT Per Km	77700.00	2.21	171717.00
f)	Additional lead to item (a), (b), (c) & (d) & (e) above for every subsequent Km or part thereof over 50 Km (i.e. 50 Km)	MT Per Km	129500.00	1.96	253820.00
NS-71	Supplying, fabricating and erecting in position dead ends, including two coats of painting as per approved drawing and as directed bY Engineer- in-charge with contractors own labour, plant, equipment and machinery. Rails and fishplates, bolts and nuts will be supplied by Railways free of cost. The rates shall be inclusive of carting of rails from and within respective station yard & fishplates, bolts and nuts from Executive/HRIDC store depot.	MT	4.00	6393.41	25573.64
Total (in Rs.)					5,39,99,143.97

Note:

1. **Only one single percentage above/below/at par the on total estimated value for the tender shall be quoted by the tenderer and any tenderer quoting rates other than single percentage shall be summarily rejected.**
2. The quantity shown in above schedule are estimated and for guidance only. Quantity shall be varied during execution of work and HRIDC reserve the rights to increase / decrease the quantities.
3. Any deviation from the above note (1) quoted by the tenderer (s) shall be summarily rejected.
4. In case of discrepancy between rate quoted in figures and words, the rate quoted in words shall be taken into account.
5. Bill of quantity no. 1 to Bill of quantity no.4 are of USSOR-2010 items and Bill of quantity no . 5 to Bill of quantity no. 9 are NS items.
6. The rate should be quoted including the payment of GST.
7. I/We clearly understand that I/We am/are not entitled to any other payment whatsoever except at the tendered rate quoted against each item for fully completed works as per conditions of contract.

Signature of Tenderer(s).....

Address.....

<u>SUMMARY OF COSTS</u>	
Name of work:	Construction of Railway yard in Maruti Suzuki India Limited plant at Manesar (Haryana) including Earthwork in formation, RCC Box culverts, supply of ballast, special PSC sleepers, points & crossings, and P-way fittings, track linking, CC paver block platforms, retaining walls, building and other misc. works.

Schedule BOQ-1 (USSOR items) (Except Supplying cement & Reinforcement item)				
S.N	Name of Chapter	Basic cost as per USSOR-2010	Add %age Above for NIT	Estimated Amount
1	Chapter -1 : Earthwork	4597954.80	34.53%	6185628.59
2	Chapter -2 : Carriage of materials	31682.18	28.35%	40664.08
3	Chapter -3 : Plain Concrete (Except item no. 033061 & 033062)	10470785.67	87.16%	19597122.46
4	Chapter -4 : Reinforced cement concrete (Except item no. 045016)	14010336.41	82.52%	25571666.02
5	Chapter -5 : Brick Work	2432147.18	70.02%	4135136.64
6	Chapter -7 : Wood Work	526455.19	38.46%	728929.86
7	Chapter -8 : Steel and Aluminium Work	1216941.68	39.94%	1702988.19
8	Chapter -9 : Flooring, Paving & Dado	914076.94	37.05%	1252742.45
9	Chapter -10 : Roof and Ceilings	3383582.60	38.02%	4670020.70
10	Chapter -11 : Finishing Masonry	211918.48	46.53%	310524.15
11	Chapter -12 :Painting, Polishing & Varnishing	32119.36	57.69%	50649.02
12	Chapter -13 : Water Supply	305474.37	25.52%	383431.43
13	Chapter -14 : Drainage and sewerage	1715136.33	78.93%	3068893.43
14	Chapter -15 : Sanitary Installations	174089.61	22.47%	213207.55

15	Chapter -17 : Misc Building Works	27032.07	26.39%	34165.83
16	Chapter -18 : Dismantling and Demolishing	82026.40	43.10%	117379.78
17	Chapter -19 : Bridge work Substructure	169265.20	76.43%	298634.59
18	Chapter -22 : Bridge work Miscellaneous except item no 222180	1029583.20	24.92%	1286155.33
19	Chapter -22 : Bridge work Miscellaneous Only Item 222180 of USSOR 2010	15932548.96	46.79%	23387388.62
20	Chapter -23 : Road and Platform work	34508584.06	28.72%	44419449.40
Total of Schedule BOQ-1(USSOR)				13,74,54,778.11
Total of Schedule BOQ-2 Reinforcement				5,87,96,907.20
Total of Schedule BOQ-3 Cement				1,39,98,833.73
Total of Schedule BOQ-4 Pavers flooring				10,03,46,159.84
(A) Total Estimated Value of BOQ(USSOR Items)				31,05,96,678.88
Total of Schedule BOQ-5 (NS Items) Civil Work				4,85,45,352.89
Total of Schedule BOQ-6 (NS Items) Civil Work				3,55,86,038.75
Total of Schedule BOQ-7(NS Items) Civil Work				14,63,06,460.16
Total of Schedule BOQ-8(NS Items)Fitting for P. way				4,56,33,933.77
Total of Schedule BOQ-9 (NS Items)Linking of P. way work				5,39,99,143.97
(B) Total Estimated Value of BOQ(NS Items)				33,00,70,929.54
Total Estimated Value of BOQ Schedule (A+B)				64,06,67,608.42

Note:- All above rates are inclusive GST and all other taxes.