डेडीकेटेड फ्रेट कोरीडोर

Tender No.: AII/EN/WC/ROB/LC-108(2020-21)

Name of Work: Construction of balance works of Two Lane ROB (including approaches) in lieu of Level crossings No.108 at Km.565/0-1 at Banas Yard of Madar-Palanpur Section of Ajmer Division of North Western Railway.

TENDER DOCUMENT

(NOT TRANSFERABLE)

March -2021

Employer:
DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)
Under
MINISTRY OF RAILWAYS

INDEX

Instructions to bidders for online bidding

PART-I

Instructions to bidders for online bidding

General:- Submission of Online Bids is mandatory for this Notice Inviting Tender. E - Tendering is new methodology for conducting Public Procurement in a transparent and secured manner. Supplier/ Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, DFCCIL has decided to use the portal (ireps.gov.in), a Government of India Undertaking. Benefits to Suppliers/ service providers are outlined on the Home page of the portal.

Instructions:-

1. **Bidding Methodology:** Online Bid System

2. **Broad outline of activities from Bidders perspective:-**

a. Procure a Digital Signing Certificate(DSC)
b. Register on Electronic Tendering System(ETS)
c. Create Users and assign roles on ETS
d. View Notice Inviting Tender (NIT) on(ETS)
e. Download Official copy of Tender Documents from ETS.
f. Clarification to Tender Documents on ETS - Query to DFCCIL (Optional) - view response to queries posted by DFCCIL through addenda.
g. Bid Submission on ETS: Prepare & arrange all documents/ papers for submission of bid online & EMD deposit through E-Payment gateway. (if applicable)
h. Attend Public Online Tender Opening Event (TOE) on ETS.
i. Post TOE clarification on ETS (Optional). Respond to DFCCIL's post – TOE queries.

For participating in this tender online, the following instructions are to be read carefully. These instructions are supplemented with more detailed guidelines on the relevant screens of the ETS.

3. **Digital Certificate:**

For integrity of data and its authenticity/ non repudiation of electronic records and to be compliant with IT Act 2000, it is necessary for each user to have a Digital Certificate (DC) also referred to as Digital Signature Certificate (DSC) of class III issued by a Certifying Authority (CA) licensed by Controller of Certifying Authority (CCA) (refer http://www.cca.gov.in).

4. The Tender documents can be downloaded from the website: ireps.gov.in and to be submitted in the e - format.

5. Physical copy of the tender documents would not be sold/accepted.

6. List of Contact persons for this tender & Bank Account Details of DFCCIL

DFCCIL Contact- 1	**Sh. S.P.Singh**
Telephone/Mobile No.	**9001895246**
E-mail ID	**spsingh1@dfcc.co.in**
DFCCIL Contact- 2	**Sh. Vipin Parihar**
Telephone/Mobile No.	**8003899316**
E-mail ID	**vparihar@dfcc.co.in**

DFCCIL Contact- 3	**Sh. Ram Murti Meena**
Telephone/Mobile No.	**9680485111**
E-mail ID	**rmmeena@dfcc.co.in**

Details of DFCCIL bank account for making payment by RTGS are as under:

Name	CPM DFCCIL Ajmer
Bank account number	309801010900234
IFSC code	UBIN0546836
Bank Name	Union Bank of India
Bank Branch	UBI Moti Bagh, New Delhi-110066

7. Modification / Withdrawal of bids:

(i) The Bidder may modify/ withdraw its e- bid after submission prior to the Bid Due Date & time. No Bid shall be modified / withdrawn by the Applicant on or after the Bid Due Date & time.

(ii) Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid Due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.

(iii) For modification of e-bid, applicant has to detach its old bid from e-tendering portal and upload / resubmit digitally signed modified bid.

(iv) For withdrawal of bid, applicant has to click on withdrawal icon at e-tendering portal and can withdraw its e-bid.

8. DFCCIL may issue addendum(s) / corrigendum(s) to the tender documents. In such cases the addendum(s)/corrigendum(s) shall be placed on ireps.gov.in and www.dfccil.gov.in. The tenderer who have downloaded the tender documents from the website before issue of addendum(s)/ corrigendum(s) must visit the website and ensure that such addendum(s) / corrigendum (s) (if any) is also downloaded by them. Such addendum(s) / corrigendum (s) (if any) shall also be submitted duly stamped and signed along with the submission of tenders. Any tender submitted without addendum(s) / corrigendum(s) (if any) shall be summarily rejected.

9. Other instructions

a) It is recommended that the Tenderer/vendor should visit the portal (ireps.gov.in), peruse the information provided under the relevant links and login to it and upload documents of bid.

b) DFCCIL reserves right to cancel the tender before submission / opening of tender, postpone the tender submission / opening date and to accept / reject any or all tenders without assigning any reason thereof. DFCCIL's assessment of suitability as per eligibility criteria shall be final and binding.

c) Information as required as per various Forms/Annexures to tender document should be submitted by the tenderers without fail strictly as per formats.

GENERAL INFORMATION / DATA SHEET

PART - II

GENERAL INFORMATION/DATA SHEET

Tender Notice No.	AII/EN/WC/ROB/LC-108(2020-21)
Name of the work	Construction of balance works of Two Lane ROB (including approaches) in lieu of Level crossings No.108 at Km.565/0-1 at Banas Yard of Madar-Palanpur Section of Ajmer Division of North Western Railway.
(a) Tender Value	Rs. **30,21,28,696/-** (Thirty Crore Twenty One Lakh Twenty Eight Thousand Six Hundred Ninety Six Rupees only)
(b) Completion Period	**06 months**
(c) Earnest Money	Nil
(d) Tender Fees	Nil
(e) Last Date and Time of Downloading of Tender from websiteireps.gov.in and www.dfccil.gov.in	05.04.2021 up to 15:00 hrs.
(f) Last date and Time of online submission of Tender on websiteireps.gov.in	05.04.2021 up to 15:00hrs
(g) Date and Time of Opening of Tender	05.04.2021 at 15:30hrs
(h) Validity of offer	45 days

NOTE: Tenderer should bear the fact in mind while quoting the rates that GST will be paid by Contractor as per prevailing rate as applicable. Documentary evidence of deposition of GST will be produced by contractor.

GENERAL INSTRUCTION TO TENDERERS

PART-III
GENERAL INSTRUCTIONS

1.0	For the purpose of this tender in DFCCIL, stipulations and conditions as specified in Indian Railways Standard General Conditions of Contract (will be referred as GCC- 2020 in the document) as amended/corrected up to latest correction will be applicable upto date of inviting tender or as otherwise specified in the tender documents, copies of which can be seen in the office of CGM-DFCCIL, Ajmer.
1.1	**DEFINITIONS AND INTERPRETATION** **(A) Definition: -**In these General conditions of Contract, the following terms shall have the meaning assigned hereunder except where the context otherwise requires:- a. "Railway" shall mean the President of the Republic of India or the Administrative Officers of the DFCCIL or of the Successor DFCCIL authorized to deal with any matters which these presents are concerned on his behalf. b. "General Manager of Railway " shall mean the officer - in-charge of the General Superintendence and Control of the Railway and shall mean and include their successors, of the successor Railway; c. "Chief Engineer" shall mean the officer - in-charge of the Engineering Department of Railway and shall also include Chief Engineer (Construction), Chief Signal and Telecommunication Engineer, Chief Signal and Telecommunication Engineer (Construction), Chief Electrical Engineer, Chief Electrical Engineer (Construction) and shall also include GGM/CGM/GM/CPM of DFCCIL. d. "Divisional Railway Manager" shall mean the Officer in-charge of a Division of the Railway and shall also mean any officer nominated by Managing Director / DFCCIL and shall mean and include their successors of the successor Railway. e. "Engineer" and Employer's Engineer shall mean the GGM/CO or Chief General Manager/Ajmer of DFCCIL / PMC appointed by DFCCIL. f. "Engineer's Representative" shall mean the Assistant Engineer, Assistant Signal and Telecommunication Engineer and Assistant Electrical Engineer, APM / Dy.PM/ PM / Dy. CPM / Add. CPM of DFCCIL in direct charge of the work and shall include any Sr. Sec. / Sec / Jr. Engineer / Executive / Sr. Executive, APM/DPM/PM/Dy.CPM of DFCCIL of Civil Engineering / Signal & Telecommunication Engineering / Electrical Engineering Department appointed by the Railway/ DFCCIL and shall mean and include the Engineer's Representative of the successor Railway /DFCCIL. g. "Contractor" shall mean the person / Firm / Company whether incorporated or not who enters into the contract with the DFCCIL and shall include their executors, administrators, and successors and permitted assigns. h. "Contract" shall mean and include the Agreement of Work Order, the accepted schedule of rates of the Schedule or Rates of Railway/DFCCIL modified by the tender percentage for items of work quantified, or not quantified, General Conditions of Contract, Special Conditions of Contracts, if any, Drawings, Specifications, Additional / Special Specifications, if any and tender forms, if any, and all other documents included as part of contract. i. "Works" shall mean the works to be executed in accordance with the contract. j. "Specifications" shall mean the Specifications for materials and works referred / mentioned in tender documents. k. "Schedule of rates of Railway" shall mean the schedule of rates issued under the authority of the Chief Engineer from time to time and shall also include Rates specified in tender document. l. "Drawing" shall mean the maps, drawings, plans and tracings or prints there of annexed to the contract and shall include any modifications of such drawings and further drawings as may be issued by the Engineer from time to time. m. "Constructional Plan" shall mean all appliances or things of whatsoever nature required for the execution, completion or maintenance of the works or temporary works (as hereinafter

	defined) but does not include materials or other things intended to form or forming part of the permanent work. n. "Temporary Works" shall mean all temporary works of every kind required for the execution completion and/or maintenance of the works. o. "Site" shall mean the lands and other places on, under, in or through which the works are to be carried out and any other lands or places provided by the Railway for the purpose of the contract. p. "Period of Maintenance" shall mean the defect liability period from the date of completion of the works as certified by the Engineer. r. "Contractor's authorized Engineer" shall mean a graduate engineer or equivalent, having more than 3 years experience in the relevant field of construction work involved in the contract, duly approved by the Engineer. **(B) Singular and Plural**:- Words importing the singular number shall also include the plural and vice versa where the context requires. **(C) Headings & marginal headings:-**The headings and marginal headings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or the contract.
1.2	RUIDP SOR-2013 as amended / corrected up to latest correction slips, RUIDP/MORTH specifications/Guidelines updated with correction slips, relevant BIS codes updated with correction slips. General Conditions of Contract-2020 and Standard Specifications as laid down for construction of ROBs in the contract as amended/corrected up to date will be applicable, copies of which can be seen in the office of CGM, DFCCIL, Ajmer.
1.3	All general and detailed drawings pertaining to this work which will be issued by the Engineer or his representatives (from time to time) with all changes and modifications.
2.0	**Drawings for the Work:** The Drawing for the work can be seen in the office of CGM, DFCCIL-Ajmer, at any time during the office hours. The drawings are only for the guidance of Tenderer(s). Detailed working drawings (if required) based generally on the drawing mentioned above, will be given by the Engineer or his representative from time to time. **As per Clause No. 2 of tender form 2nd sheet Annex.I Part-I of GCC-2020,**
3.0	**Tender Form** embodies the contents of the contract documents either directly or by reference, e-Tender Forms shall be issued free of cost to all tenderers. **As per Clause No.3 of Part-I of GCC-2020 , with up to date correction slip**
3.1	Date of inviting tender shall be the date of publishing tender notice on IREPS website if tender is published on website or the date of publication in newspaper in case tender is not published on website. **As per Clause No. 1.2 (n) of Part-I of GCC-2020 , with up to date correction slip**
3.2	The Tenderer(s) shall quote his / their rates as a percentage above or below the Schedule of Rates of DFCCIL except where he/they are required to quote item rates and must tender for all the items shown in the Schedule of approximate quantities attached. The quantities shown in the attached Schedule are given as a guide and are approximate only and are subject to variation according to the needs of the DFCCIL. The DFCCIL does not guarantee work under each item of the Schedule. The tenderer(s) shall quote rates / rebates only at specified place in Tender Form supplied by DFCCIL. Any revision of rates / rebates submitted (quoted) through a separate letter whether enclosed with the bid (Tender Form) or submitted separately or mentioned elsewhere in the document other than specified place shall be summarily ignored and will not be considered. **As per Clause No. 3 of tender form2ndsheet Annex. I Part-I of GCC-2020, with up to date correction slip.**
4.0	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. **As per Clause No. 4 of tender form 2ndsheet Annex. I Part-I of GCC-2020 , with up to date**

	correction slip.
5.0	**EARNEST MONEY**
5.1	For the subject tender, the Earnest Money deposit shall be Rs **NIL** and shall be governed by Para 5.1.1/ 5.1.2 below.
5.1.1	In case the Earnest Money Deposit for the tender is NIL, following conditions shall be fulfilled These instructions shall be followed for all works & service tenders on DFCCIL, published on or after 18:00 hrs of 16.01.2021 and shall be valid for all the tenders issued till 31.12.2021 (including 31.12.2021) (i) Tender shall submit the Bid Security declaration duly signed by the tenderer as per the proforma at Annexure-XXXV. (ii) In case, the tenderer withdraw the bid within bid validity period or if awarded the tender and on being called upon to submit the Performance Guarantee/ Performance Security fail to submit the same within the stipulated time period mentioned in tender documents or on being called upon to sign the contract agreement fail to sign the same within stipulated period mentioned in tender documents, the bidder shall be banned from submission of bids in any Works/ Service Tender issued by DFCCIL for a period of 12 months from the date of such banning done on e-platform IREPS. (iii) The banning shall be as per the decision of Competent Authority and banning shall be effective w.e.f. date and time when same is done on IREPS by 'department Admin'. (iv) The defaulting bidder shall be banned as per the provision made in IREPS in case partnership firm/JV is banned, all members of partnership firm including firm/ all constituents of JV including JV shall be banned from submission of bids and details of all shall be uploaded on IREPS. (v) It is responsibility of Tender Committee or Direct Acceptance Authority (in case of direct acceptance), for the tenders invited on IREPS or otherwise, to check up on IREPS, whether the bidder is banned or not from bidding on the date of closing of tender. (vi) Whenever a bidder is banned or banning is revoked, a system generated SMS as well as e-mail shall be sent to bidder. Full details related to banning will also be available to IREPS registered firms through their IREPS account. (vii) If the bidder is banned for submission of bids on the date of closing of tender, such bid, even if received, shall be treated as invalid while evaluating the bids. (viii) If a bidder is banned for submission of bids on the request of bidder in writing to tender calling authority, ban can be revoked by the Authority who had banned the bidder earlier, on submission to DFCCIL by bidder (including Start-ups, 100% Govt. owned PSUs & Labour Co-operatives), an amount equivalent to FULL Earnest Money Deposit that would have been worked out by DFCCIL for that tender as per existing instructions on the date of inviting tenders if Earnest Money Deposit would have been taken in place of Bid Security Declaration while inviting tenders. (ix) On receipt of request from bidder for revocation of ban on submission of bids, the Authority who had banned the bidder from submission of bids, shall intimate in writing to bidder the amount the bidder has to deposit with DFCCIL. Bidder in turn shall deposit the required amount in DFCCIL earnings and submit the receipt for the same. (x) Revocation shall be automatic on expiry of banned period. However, in case revocation is done before expiry of banned period, the banning shall stand revoked w.e.f. date & time when the same is done on IREPS by Department Admin. **Railway Board Letter no 2020/CE-I/CT/3E/GCC/Policy dated 30.12.20**

<table>
<tr><td>5.1.2</td><td>In case the Earnest Money Deposit for the tender is applicable, the below instructions shall be applicable. The copy of letter of approval of competent authority for the EMD has been uploaded.
(a) The tenderer shall be required to deposit earnest money with the tender for the due performance with the stipulation to keep the offer open till such date as specified in the tender, under the conditions of tender. The earnest money shall be as under : Value of the Work Earnest Money Deposit (EMD)
<table>
<tr><td>For works estimated to cost up to Rs. 1 Crore</td><td>2% of the estimated cost of the work</td></tr>
<tr><td>For works estimated to cost more than Rs. 1 crore</td><td>Rs. 2 lakh plus ½% (half percent) of the excess of the estimated cost of work beyond Rs. 1 crore subject to a maximum of Rs. 1 crore</td></tr>
</table>
Note :
(i) The earnest money shall be rounded off to the nearest Rs. 100. This earnest money shall be applicable for all modes of tendering.
(ii) Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as ‘Startups’ shall be exempted from payment of earnest money deposit detailed above.
(iii)100% Govt. owned PSUs shall be exempted from payment of earnest money deposit detailed above.
(iv)Labour Cooperative Societies shall deposit only 50% of above earnest money deposit detailed above.
(b) It shall be understood that the tender documents have been issued to the tenderer and the tenderer is permitted to tender in consideration of stipulation on his part, that after submitting his tender he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to the Engineer. Should the tenderer fail to observe or comply with the said stipulation, the aforesaid amount shall be liable to be forfeited to the DFCCIL.
(c) If his tender is accepted this earnest money mentioned in sub clause (a) above will be retained as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract. The Earnest Money of other Tenderers shall, save as herein before provided, be returned to them, but the DFCCIL shall not be responsible for any loss or depreciation that may happen thereto while in their possession, nor be liable to pay interest thereon.
As per Clause No. 5 – 1 (a) of Part-I of GCC-2020, with up to date correction</td></tr>
<tr><td>5.2</td><td>The Earnest Money shall be deposited through e-payment gateway (if applicable) or as mentioned in tender documents.
As per Clause No. 5 – 2 of Part-I of GCC-2020, with up to date correction slip</td></tr>
<tr><td>5.3</td><td>(ii) (a)The tender must be accompanied by a sum of ₹ **NIL/-** as Earnest Money deposited through e-payment gateway or as mentioned in tender documents, failing which the tender shall not be considered. Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as ‘Startups’ (on submission of Registration Certificate issued by appropriate authority) and 100% Govt. owned PSUs shall be exempted from payment of Earnest Money. Labour Cooperative Societies shall deposit only 50% of the earnest money.
(b) The Tenderer(s) shall keep the offer open for a minimum period of 45 days (in case of two packet system of tendering 60 days) from the date of opening of the Tender. It is understood that the tender documents have been issued to the Tenderer(s) and the Tenderer(s), is / are permitted to tender in consideration of the stipulation on his / their part that after submitting his / their tender subject to the period being extended further, if required by mutual agreement from time to time, he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to the CGM, DFCCIL, Should the tenderer fail to observe or comply with the foregoing stipulation, the amount deposited as Earnest Money for the due performance of the above stipulation, shall be forfeited to the DFCCIL.</td></tr>
</table>

	(c) If his tender is accepted the earnest money (If Applicable) mentioned in sub clause (a) above will be retained as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract. The Earnest Money of other Tenderers shall, save as herein before provided, be returned to them, but the DFCCIL shall not be responsible for any loss or depreciation to the Earnest Money that may happen thereto while in their possession, nor be liable to pay interest thereon. (d) In case Contractor submits the Term Deposit Receipt/Bank Guarantee Bond towards full Security Deposit, the DFCCIL shall return the Earnest Money so retained to the Contractor. **As per Clause No. 6 of Tender Form (second sheet) Annex.I of Part-I of GCC 2020, with up to date correction slip**
6.0	**Rights of the DFCCIL to deal with Tender:** The authority for the acceptance of the tender will rest with the DFCCIL. It shall not be obligatory on the said authority to accept the lowest tender or any other tender, and tenderer(s) shall neither demand any explanation for the cause of rejection of his/ their tender nor the DFCCIL to assign reasons for declining to consider or reject any particular tender or tenders. **As per Clause No. 7 of Tender Form (second sheet)Annex.I of Part-I of GCC 2020,with up to date correction slip**
6.1	If the tenderer(s) deliberately gives / give wrong information in his / their tender or creates / create circumstances for the acceptance of his / their tender, the DFCCIL reserves the right to reject such tender at any stage. **As per Clause No. 8 of Tender Form (second sheet) Annex. I of Part-I of GCC 2020, with up to date correction slip**
6.2	If the tenderer(s) expire(s) after the submission of his / their tender or after the acceptance of his / their offer, the DFCCIL shall deem such tender cancelled. If a partner of a firm expires after the submission of their tender or after the acceptance of their tender, the DFCCIL shall deem such tender as cancelled, unless the firm retains its character. **As per Clause No. 9 of Tender Form (second sheet) Annex. I of Part-I of GCC 2020 , with up to date correction slip**
7.0	**SYSTEM OF TENDERING**
7.1	**Single Packet Tender-:** In case of tenders costing less than Rs. 10 Crore single packet tender system will be followed and technical & financial offer of the tenderer/s shall be opened and evaluated at the same time. **Double Packet Tender-:** In case of tenders costing more than Rs. 10 Crore double packet tender system will be followed and technical & financial offer of the tenderer/s shall be opened and evaluated accordingly.
7.2	Tenderer should submit the offer with due diligence after going through the tender documents.
7.3	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. **As per Clause No. 7B of Part-I of GCC 2020, with up to date correction slip**
8.0	**Execution of Contract Document:** The tenderer whose tender is accepted shall be required to appear in person at the office of CGM-DFCCIL, Ajmer, as the case may be, or if tenderer is a firm or corporation, a duly authorized representative shall appear and execute the contract agreement within seven days of notice from DFCCIL that the Contract Agreement is ready. The Contract Agreement shall be entered into by DFCCIL only after submission of valid Performance Guarantee by the Contractor. Failure to do so shall constitute a breach of the agreement affected by the acceptance of the tender. In such cases the DFCCIL may determine that such tenderer has abandoned the contract and there upon his tender and acceptance thereof shall be treated as cancelled and the DFCCIL shall be entitled to forfeit the full amount of the Earnest Money and other dues payable to the Contractor under this contract. The failed Contractor shall be debarred from participating in the re-tender for that work. **As per clause No. 8 of Part-I of GCC-2020 , with up to date correction slip**

8.1	In case, the particular work is charged to EBR (IF), than the Indian Railway Finance Corporation (IRFC) shall also be the party in the contract agreement. After submission of valid performance guarantee, the contract agreement shall be entered into between Indian Railways (IR), Indian Railways Finance Corporation (IRFC) and the tenderer, whose tender is accepted. The Contract Agreement shall be signed as per Annexure XXVIII of the STD. The format at Annexure IV of GCC 2020 shall not be applicable for Contract Agreement of EBR (IF) funded contracts. **As per Railway Board's letters no 2018/AC-II/1/57(pt.) dated 20.03.20 for EBR(IF) funded contracts**
9.0	**Documents to be Submitted Along with Tender** (i)The tenderer shall clearly specify whether the tender is submitted on his own (Proprietary Firm) or on behalf of a Partnership Firm / HUF/Company / Joint Venture (JV) / Registered Society / Registered Trust / LLP etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern, authorized signatory and copy of PAN Card along with their tender as per proforma given in Annexure I (mandatory). Tender shall be submitted and 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. (ii)The various documents to be submitted by the tenderer are as per clause 14 (ii) of the GCC 2020, the tenderer shall ensure submission of mandatory document as listed in para 16 below along with the offer. (iii)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 having been submitted by the individual who has signed the tender. (iv)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 not submitted. Further, no suomoto cognizance of any document available in public domain (i.e., on internet etc.) or in Railway/DFCCIL's record/office files etc. will be taken for consideration of the tender, if no such mention is available in tender offer submitted. (v) A tender from JV / Partnership firm etc. shall be considered only where permissible as per the tender conditions. (vi)The DFCCIL will not be bound by any change in the composition of the firm made subsequent to the submission of tender. DFCCIL may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor. **As per Clause No. 14 of Tender Form (second sheet) Annex. I of Part-I of GCC-2020, with up to date correction slip**
10.0	The tenderer whether sole proprietor/ HUF/ Company or a partnership firm / LLP / joint venture (JV) / registered society / registered trust 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. **As per Clause No. 15 of Tender Form (second sheet) Annex. I of Part-I of GCC-2020, with up to date correction slip**

11.0	**Employment/Partnership etc. of Retired Railway/DFCCIL 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 any of the Railways/DFCCIL owned and administered by the President of India for the time being, OR ii) being partnership firm / joint venture (JV) / 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, OR iii) being an incorporated company have any such retired Engineer of the gazetted rank or any other gazetted officer working before his retirement 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 or any officer, 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 any of the Railways/DFCCIL owned and administered by the President of India 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 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 on the list of approved Contractors, have a relative(s) or in the case of proprietorship firm/ partnership firm/ company / joint venture (JV) / registered society / registered trust/ LLP/ HUF 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 one or more of his shareholder(s) or a relative(s) of the shareholder(s) employed in gazetted capacity in the Engineering or any other department of the Railways/DFCCIL, the authority inviting tenders shall be informed of the fact at the time of submission of tender, failing which the tender may be disqualified/rejected or if such fact subsequently comes to light, the contract may be rescinded in accordance with provision in clause 62 of standard general conditions of contract. Note:-If information as required as per 11 (a), (b), (c) above has not been furnished, contract is liable to be dealt in accordance with provision of clause 62 of Standard General Condition of Contract. **As per Clause No. 16, of Tender Form (second sheet) Annex. I of GCC-2020, with up to date correction slip**

12.0	**Omissions & Discrepancies:** Should a tenderer find discrepancies in or omissions from the drawings or any of the Tender Forms or should he be in doubt as to their meaning, he should at once notify the authority inviting tenders. The tender inviting authority may, if deemed necessary, clarify the same to all tenderers. It shall be understood that every endeavor has been made to avoid any error which can materially affect the basis of tender and successful tenderer shall take upon himself and provide for the risk of any error which may subsequently be discovered and shall make no subsequent claim on account thereof. **As per Clause No. 4 of Part-I of GCC-2020, with up to date correction slip**
13.1(A)	(i) 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 in accordance with the provisions of Clause-37 of the General Conditions of Contract for the completion of works to the entire satisfaction of the Engineer. (As per Clause No. 6 (a)(i) of G.C.C. 2020 Part-I with up to date correction slip) (ii) 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. (As per Clause No. 6 (a) (ii) of G.C.C. 2020 Part-I with up to date correction slip) (iii)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 DFCCIL immediately after the award of 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. (As per Clause No. 6 (a) (iii)of G.C.C. 2020 Part-I with up to date correction slip) (iv)In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/SGST Act, the DFCCIL shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concerned authority. **As per Clause No. 6(a)(iv) of Part-I of GCC-2020, with up to date correction slip.**
13.1(B)	When work is tendered for by a firm or company, the tender shall be digitally signed by the individual legally authorized to enter into commitments on their behalf. **As per Clause No. 6(b) of Part-I of GGC-2020, with up to date correction slip**
13.1(C)	In case of E-tender, all submissions of documents are to be uploaded on web-site. There may be last minute hiccups and delay in uploading the Documents and payment of Earnest Money etc. Tenderers/Prospective bidders are advised to upload their offer well in time. DFCCIL will not be responsible for any delay/non submission of offer due to any reason whatsoever.
13.1(D)	The DFCCIL 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. **As per Clause No. 6 (c) of Part-I of GCC-2020, with up to date correction slip.**
13.2	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 the certificate to be submitted by the bidder is enclosed as **Annexure-II.** Non submission of the certificate by the bidder 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. **As per Clause No. 6.1 of Part-I of GCC-2020, with up to date correction slip.**
14	**RIGHT OF DFCCIL TO DEAL WITH TENDERS**

14.1	If, the DFCCIL decides to negotiate, in view to bring down the rates, the tenderer, who is called for negotiation, shall furnish the following form of declaration before commencement of the negotiation: I/we ……. do declare that in the event of failure of the contemplated negotiations relating to Tender No. …….…….dated…..…….. Opened on …..……. my original tender shall remain open for acceptance on its original terms and conditions up to the date specified in the tender or the date extended by mutual agreement from time to time.
14.2	**The tenderer/s are required to quote his/their rates as % (percentage) Above/Below /At Par in figures while submitting his/their offer.**
15.0	**ELIGIBLITY CRITERIA**
15.1	**Technical Eligibility Criteria** The tenderer must have successfully completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited: Three similar works, each costing not less than the amount equal to30% of advertised value of the tender, or Two similar works, each costing not less than the amount equal to 40% of advertised value of the tender, or One similar work, each costing not less than the amount equal to 60%of advertised value of the tender. Note:- The similar nature of work defined is **"construction of Bridge/ROB/ Viaduct of Railway / Metro Railway / Road with minimum one span of composite /open web/plate girder".**
15.1.2	**Technical Eligibility Criteria for JV** ('a' or 'b' mentioned hereunder)**:** (a) For Works without composite components The technical eligibility for the work as per para 10.1 of **GCC2020**, 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 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. (b) For works with composite components (i) The technical eligibility for each component of work as per para 10.1 of **GCC2020**, shall be satisfied by either the 'JV in its own name & style' or 'any member of JV having min 26% share'. Each **other** member of JV shall have technical capacity of minimum 10% of the cost of any component 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 cost of any component of work. **OR** (ii) The technical eligibility for major component of work as per para 10.1 of **GCC2020**, shall be satisfied by either the 'JV in its own name & style' or 'any member of JV having min 26% share' and technical eligibility for other components of work as per para 10.1 above, shall be satisfied by either the 'JV in its own name & style' or 'any member of the JV'. Each **other** member of JV shall have technical capacity of minimum 10% of the cost of any component 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 cost of any component of work. *Note for Clause 17.15.1:* *(a) The Major component of the work for this purpose shall be the component of work having highest value. In cases where value of two or more component of work is same, any one work can be classified as Major component of work.*

	(b) *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.*
15.2	**Financial Eligibility Criteria:** The tenderer must have received contractual payments in the previous three financial years and the current financial year up to the date of inviting of tender, at least 150% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department / client and/or Audited Balance Sheet duly certified by the Chartered Accountant /Certificate from Chartered Accountant duly supported by Audited Balance Sheet. Note: Client certificate from other than Govt. Organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India. **As per Clause No. 10.2 of Tender Form (second Sheet) of Annex. I of Part-I of GCC2020, with up to date correction slip.**
15.2.1	**Financial Eligibility for JV**- The JV shall satisfy the requirement of "Financial Eligibility" mentioned at para 10.2 of **GCC2020**. The "financial capacity" of the lead partner of JV shall not be less than 51% of the financial eligibility criteria mentioned at para 10.2 of **GCC2020**. The arithmetic sum of individual "financial capacity" of all the members shall be taken as JV's "financial capacity" to satisfy this requirement. Note: 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
15.3	**Bid Capacity:** The tender/technical bid will be evaluated based on bid capacity formula detailed as **Annexure VI of GCC. As per Clause No. 10.3 of Tender Form (second Sheet) of Annex.I of Part-I of GCC-2020, with up to date correction slip.**
15.3.1	**Bid Capacity for JV-** The JV shall satisfy the requirement of "Bid Capacity" requirement mentioned and The tender/technical bid will be evaluated based on bid capacity formula detailed as Annexure-VI of GCC The arithmetic sum of individual "Bid capacity" of all the members shall be taken as JV's "Bid capacity" to satisfy this requirement.
15.4	No Technical and Financial credentials are required for tenders having value up to Rs 50 lakh.
15.5	1. The NIT cost of the tender is Rs. **30,21,28,696/-.** For the Technical Eligibility Criteria the similar nature of work defined is **"construction of Bridge/ROB/ Viaduct of Railway / Metro Railway / Road with minimum one span of composite /open web/plate girder"** **2. Secondary Components-The relevant documents as specified in IR GCC-2020 required to be submitted by JV/partnership firms.**

15.6	Note to Para 15 Certificate issued by Chartered Accountants based on the audited balance sheets will also be accepted.(as per Annexure-VIII) The criteria for completed works shall be as under :- (a) Entire work has to be completed in all respects as per contract agreement. Part completed work shall not be considered. (iii) Completion certificate from following organizations shall only be considered:- (a) The work(s) should have been directly awarded to the tenderer by Govt. Organization/ Semi Govt. Organization/ Public Sector Undertaking / Autonomous bodies/ Municipal Bodies/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 The credentials of a wholly owned subsidiary of a parent company will also be considered in respect of works mentioned above if tender is submitted by the parent company. (b) Completion certificate should be as per proforma given in Annexure- IV-A or IV-B or IVC, as applicable or in the format containing all information required as per the Annexure- IV-A or IV-B or IV-C. (c)Work experience certificate issued by Public listed company shall be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates. In case tenderer submits work experience certificate issued by public listed company, the tenderer shall also submit along with work experience certificate the relevant copy of work order, bill of quantities bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received an copy of final/last bill paid by company in support of above work experience certificate. Details of works physically completed should be submitted in the proforma as per 'Annexure-III'. (iv) 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 deduction 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 deduction is to be considered. 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. (v) The amount given at Sr. No. 11 in proforma vide Annexure-IV for the completion certificate will be the value of completed work, if nomenclature of work as given in completion certificate matches with similar nature work. (vi) The amount mentioned at Sr. No. 12 in 'Annexure-IV' for the completion certificate shall be the value of completed work if the nomenclature of completed work includes additional components of work which are not matching with similar nature of works. (vii) Certificate from private individuals for whom such works are executed shall not be considered for eligibility. (viii) Conditional tenders are liable to be rejected straight away. DFCCIL reserves the right to reject such tenders summarily without assigning any reasons whatsoever**.**
15.7	Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under: The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for the relevant date. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same 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.
15.8	Explanation for clause 15 (clause 15.1 to 15.6) - Eligibility Criteria: 1. In case a work is started prior to 07 (seven) years, ending last day of month previous to the one in which tender is invited, but completed in last 07 (seven) years, ending last day of month previous to the one in which tender is invited, the completed work shall be considered for fulfillment of credentials. 2. If a work is physically completed and completion certificate to this extent is issued by the concerned organization but final bill is pending, such work shall be considered for fulfillment of credentials. 3. If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials. 4. In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost of that work including PVC amount if any shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility. 5. The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work. 6. In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of 0.3*0.2*value of the work done in the previous entity. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No. (s) in case of dissolution of partnership firm(s) etc. 7. In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm (e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc. 8. In case of existing partnership firm if any other partner(s) joins the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc. 9. Any partner in a partnership firm cannot use or claim his credentials in any other firm without leaving the partnership firm i.e., In a partnership firm of A&B partners, A or B partner cannot use credentials of partnership firm of A & B partners in any other partnership firm or propriety firm without leaving partnership firm of A & B partners. 10. In case a partner in a partnership firm is replaced due to succession as per succession law, the proportion of credentials of the previous partner will be passed on to the successor.

	11. If percentage share among partners of a partnership firm is changed, but the partners remain the same, the credentials of the firm before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, in case a partner of partnership firm retires without taking away any credentials from the firm, the credentials of partnership firm shall remain the same as it is without any change in their value. 12. In a partnership firm "AB" of A&B partners, in case A also works as propriety firm "P" or partner in some other partnership firm "AX", credentials of A in propriety firm "P" or in other partnership firm "AX" earned after the date of becoming a partner of the firm AB shall not be added in partnership firm AB. 13. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm. 14. In case company A is merged with company B, then company B would get the credentials of company A also.
16.0	**The list of documents to be uploaded by the tenderer(s) for this tender.**
16.1	Following documents are common for all types of firm i.e. Sole proprietorship, Partnership, Limited Liability Partnership Firm, Registered Society/ Trust, Limited Company or JV.
(a)	Firm details as per proforma given in **Annexure-I (Mandatory).**
(b)	A Copy of the Certificate as per proforma given in **Annexure-II (Mandatory).**
(c)	List of similar nature of works physically completed in all respects during last 7 years, ending last day of month previous to one in which tender is invited, shall be submitted as per Performa given in **Annexure-III–Mandatory for works** (i) directly awarded by Govt./Semi Govt./Public sector undertaking/Autonomous bodies /Municipal bodies/ Railway Siding owners (ii)Concessionaire (to whom the work is awarded by Indian Railways/ DFCCIL/NHAI/ PWD/State Road Development Corporation on PPP/DBFOT or any other mode) (iii) 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 **Note**- Works under item (ii) are to be submitted only for tenders costing Rs.50.00 Cr. and above
(d)	Attested copy of Completion Certificate of works mentioned in para (c) above from the Organizations with whom they worked as per proforma given in **Annexure-IV-A or IV-B or IV-C** as applicable**. (Mandatory)**
(e)	**Secondary Components-(Not Applicable in this Tender)**
(f)	List of works on hand, existing commitments and balance amount of ongoing works as per format given in **'Annexure-V duly verified by Chartered Accountant to evaluate bid capacity of the tenderer (Mandatory for tender value more than Rs. 20 crores)**
(g)	A statement showing construction works executed and payment received during the previous three financial years and the current financial year (up to date of inviting tender), taking into account the completed as well as work in progress as per **Annexure-XIX** on the letter head of Chartered Accountant, to evaluate bid capacity of the tenderer (**Mandatory for tender value more than Rs. 20 Crores)**
(h)	List of plants & Machinery available on hand (own) and proposed to be inducted (own and hired to be given separately) for the subject work in **Annexure–VI**.
(i)	List of Personnel, Organization available on hand and proposed to be engaged for the subject work in **Annexure –VII**.

(j)	In case Earnest money for the tender is NIL as per para 5.1.1 above, Tenderer shall submit the Bid Security Declaration as per the Performa given in Annexure-XXXV **(Mandatory only in case Earnest Money is defined as NIL).** In case submission of Earnest Money is mentioned in Para 5.1.2 above Earnest Money in proper form Earnest money should be submitted by the tenderer only through net banking or payment CPM DFCCIL, Ajmer**(Mandatory only in case earnest money is prescribed for the tender). In case the tenderer is** (i)Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as 'Startups' – shall be exempted from payment of Earnest Money deposit and shall submit certified copy of the registration/ Valid document issued by DIPP (mandatory if applicable) (ii)100% Govt. owned PSUs- shall be exempted from payment of Earnest Money deposit and shall submit certified copy of the registration/ Valid document issued by the relevant Ministry (mandatory if applicable). (iii) Labour Cooperative Societies – shall deposit only 50% of the Earnest Money Deposit and shall submit certified copy of the registration/ Valid document issued by the relevant Ministry/ Labour commission (mandatory if applicable).
(k)	Contractual Receipts for the last three years and current financial year with supporting documents required as per **Annex. VIII(Mandatory.)**
(l)	Self-attested copy of Permanent Account Number (PAN) issued by Income Tax Department.
(m)	The tenderers are required to submit the test report of the stone ballast conforming to Railways specifications as given in the Para 7.0 of Important Codal Provision of Tender Document. (Applicable only for the tenders of supply of ballast). The test report is **Not required for this tender**. (**Mandatory if marked as required) *.**
(n)	The tenderers are required to submit the information and particulars regarding retired Railway/DFCCIL Engineer(s)/Officer(s) of the Gazetted rank and regarding Relative(s) employed in Gazetted capacity on DFCCIL as per proforma given in Annexure **XXIII. (Mandatory).**
16.2	In addition to Para 16.1 above certain more documents are to be submitted by tenderers as per status of their firms and are **mandatory.** These documents are listed below
16.2.1	**For Sole Proprietorship firm** a) Affidavit as per proforma given of **Annexure –IX (**duly executed on stamp paper and notarized**).** b) Special power of Attorney to be submitted by sole proprietor firm as per proforma given in **Annexure XIV** (duly registered with the Registrar or notarized). (Not required if tender documents are submitted by proprietor himself as per (a) above)
16.2.2	**For HUF (Hindu Undivided Family)** *(a)* Affidavit as per proforma given of **Annexure –XXIX (**duly executed on stamp paper and notarized**).** *(b)* Special power of Attorney to be submitted by the HUF as per proforma given in **Annexure XXX** (duly registered with the Registrar or notarized). (Not required if tender documents are submitted by Karta of the HUF, himself as per (a) above)

16.2.3	**<u>For Partnership firm</u>** (a) A copy of Partnership Deed (Notarized or duly registered with the Registrar prior to date of tender opening as per the Indian Partnership Act) (b) Special Power of attorney to be submitted by Partnership firm in favour of the individual to sign the tender on behalf of the firm and create liability against the firm as per proforma given in **Annexure-XIII** (duly registered with the Registrar or notarized). (Required even if one or more partners are authorized in Partnership deed itself to sign on behalf of the firm as given in (a) above. (c) Declaration by the newly formed partnership firm as per proforma given in **Annexure-XXXI.** (mandatory if tenderer is newly formed partnership firm) (d) Declaration by the existing partnership firm as per proforma given in **Annexure-XXXII.** (mandatory if tenderer is an existing partnership firm) (e) With respect to the declaration above, in case of Newly formed partnership firm has/ have as one or more partner(s) from previous propriety firm(s) or dissolved previous partnership firm(s) or LLP firm or split previous partnership firm(s) or LLP firm, Existing partnership firm **(a)**joining of new one or more partner(s) in the existing partnership firm, **(b)** quitting of new one or more partner(s) from the existing partnership firm – Following additional documents are required to be furnished(mandatory as applicable) (1) Details of previous Propriety firm / Partnership Firm/ LLP firm as per annexure I (2) A copy of previous partnership Firm (Notarized or duly registered with the Registrar) (3) Affidavit as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized). (4) Copy of previous LLP agreement and certificate of incorporation. (5) Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of dissolution of previous partnership firm/ LLP firm) (6) Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm, (7) LLP firm or propriety firm) (8) Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such partner(s) joining the new/ existing partnership firm, as per para 16.1 (c), (d), (f),(g), (k) above. **As per Clause No. 14(ii)(c), 15, 18 & explanation to Clause 10.1 to 10.5 of Annex. I Part-I of GCC-2020, with up to date correction slip)**
16.2.4	**<u>For Company registered under Companies Act 2013</u>** a) Copy of Memorandum of association/ Articles of Association of Company. b) Copy of Certificate of Incorporation (c) Copy of resolution passed by Board of Directors authorizing its Director/Employee to deal with tender on behalf of company (d)Special Power of Attorney/ Authorization issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender, sign the MOU/ JV agreement on behalf of the company and create liability against the Company, as per proforma given in **Annexure-XV** (duly registered with the Registrar or notarized)**.** (Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per (c) above) (e)Declaration regarding constitution of the Company, for merging of another company, details required for the entire period for last seven years as per proforma given in **Annexure-XXXIII**. (mandatory) (f) Following additional documents are required to be furnished (mandatory in case of merger with another company) (1)Details of company getting merged as per annexure I (2)Copy of Memorandum of Association/ Articles of Association of the Company getting merged

	(3)Copy of certificate of incorporation of previous company getting Merged (4)Resolution by the Board of Directors for the Merger of the company(s) with the tenderer (5)Proof of surrender of previous PAN no (6)Document for the technical, financial criteria, bid capacity as claimed w.r.t. such Company(s) joining the new/Existing Company as per para 16.1 ©, (d), (f), (g), (k) above. **As per Clause No. 14 (ii)(e), 15 & explanation to Clause 10.1 to 10.5 of Annex. I Part-I of GCC-2020, with up to date correction slip**
16.2.5	**<u>For LLP Firm Registered under LLP Act 2008</u>** (a) A copy of LLP Agreement. (b) A copy of certificate of Incorporation and (c) A copy of resolution passed by partner of LLP firm for submitting tender by LLP firm and to deal with tender on behalf of the firm as per proforma given in **Annexure-XXI.** (d) Special Power of Attorney/ Authorization issued by LLP firm in favour of the individual to sign the tender on behalf of the LLP firm and create liabilities against the LLP as per proforma given in **Annexure-XXV** (duly registered with the Registrar or notarized)**.** (Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per (c) above) (e) Declaration by the newly formed LLP firm as per proforma given in **Annexure-XXXI.** (mandatory if tenderer is newly formed partnership firm) (e) Declaration by the existing LLP firm as per proforma given in **Annexure-XXXII.** (mandatory if tenderer is an existing partnership firm) (f) With respect to the declaration above, in case of 1 Newly formed LLP firm has/ have as one or more partner(s) from previous propriety firm(s) or dissolved previous partnership firm(s) or LLP firm or split previous partnership firm(s) or LLP firm, Existing LLP firm **(a)**joining of new one or more partner(s)in the existing LLP firm, 2 quitting of new one or more partner(s)from the existing LLP firm –Following additional documents are required to be furnished (mandatory as applicable) (1) Details of previous Propriety firm / Partnership Firm/ LLP firm as per annexure I (2) A copy of previous partnership Firm (Notarized or duly registered with the Registrar) (3) Affidavit as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized). (4) (4)Copy of previous LLP agreement and certificate of incorporation. (5) Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of dissolution of previous partnership firm/ LLP firm) (6) Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm, LLP firm or propriety firm) (7) Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such partner(s) joining the new/ existing partnership firm, as per para 16.1 (c), (d), (f),(g), (k) above. **As per Clause No. 14(f), 15 & explanation to Clause 10.1 to 10.5 of Annex. I Part-I of GCC2020, with up to date correction slip**

16.2.6	**For Registered Society & Registered Trust** (a) A copy of the certificate of registration. (b) A copy of Deed of Formation. (c) A copy of Special Power of Attorney/ Authorization in favour of the individual to sign the tender and create liabilities against the Registered Society/ Trust as per proforma given in **Annexure-XXII** (duly registered with the Registrar or notarized)**.** (Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per (a), (b) above) **As per Clause No. 14(g), 15 Annex. I Part-I of GCC-2020, with up to date correction slip**
16.2.7	**For JV firm** Following documents are mandatorily to be submitted by constituents of the JV firm depending upon their status **As per clause no. 14(d), 17.0 Annex.I Part-I, GCC-2020, with up to date correction slip**
	a) Memorandum of Understanding of JV as per pro forma given in **Annex. X(**duly executed on stamp paper and notarized)
16.2.7.1	**Documents mandatory for Sole Proprietorship firm participating as member of JV** (a) Affidavit as per proforma given of **Annexure –IX (**duly executed on stamp paper and notarized)**.** (b) Special Power of Attorney to be submitted by Sole Proprietor participating as member of JV firm as per proforma given in **Annexure-XII**(duly registered with the Registrar or notarized) (Not Required if MOU/JV agreement is signed by the sole Proprietor himself as per (a) above). **As per Clause No.15 Annex.I of Part-I GCC-2020, with up to date correction slip**
16.2.7.2	**Documents mandatory for HUF (Hindu Undivided Family) participating asmember of JV**(a) Affidavit as per proforma given of **Annexure –XXIX (**duly executed on stamp paper and notarized)**.** (b) Special Power of Attorney to be submitted by HUF participating as member of JV firm as per proforma given in **Annexure-XII**(duly registered with the Registrar or notarized) (Not required if MOU/JV agreement is signed by the Karta of HUF himself as per (a) above). **As per Clause No. 17.14.2, 15 Annex. I of Part-I GCC-2020, with up to date correction slip**
16.2.7.3	**Documents mandatory for partnership firm participating as member of JV** (a)Copy of Partnership Deed (duly registered with the Registrar or notarized prior to date of tender opening as per the Indian Partnership Act.). (b) Copy of letter of consent of all the Partners or individual authorized by partnership firm to enter into JV Agreement as per proforma given in **Annex-XI(**duly executed on stamp paper)**.** (c)Special Power of attorney to be submitted by Partnership firm in favour of the individual to sign the tender, to sign the MOU/JV agreement on behalf of the Partnership Firm and to create liability against the firm as per proforma given in **Annexure-XVIII** (duly registered with the Registrar or notarized). (Required even if MOU/JV agreement is signed by one or more partners authorized in Partnership deed, letter of consent to sign on behalf of the firm is given in (a), (b) above) **As per Clause 17.14.1, 15 & 18.2 of Annex.I Part-I GCC-2020, with up to date correction slip**
16.2.7.4	**Documents mandatory for Company participating as member of JV** a) A Copy of Memorandum of Association/ Articles of Association of Company. b) A Copy of certificate of Incorporation c) A Copy of resolutions passed by Board of Directors of the Company permitting the Company to enter into a JV agreement, to be submitted as per **Annexure-XVII.** d) Special Power of Attorney/ Authorization issued by the Company (backed by the Resolution of Board of Directors) in favour of the individual to sign the tender, to sign the MOU/JV agreement on behalf of the company and create liability against the Company, as per proforma

	given in **Annexure-XII** (duly registered with the Registrar or notarized)**.** (Required even if MOU/JV agreement is signed by the authorized/ power of attorney holder himself as per (c) above) **As per Clause No. 17.14.3, 15 of Annex.I Part-I GCC-2020, with up to date correction slip**
16.2.7.5	**Documents mandatory for LLP Firm participating as member ofJV** (a) A copy of LLP agreement. (b) A copy of Certificate of incorporation (c) A copy of Resolution passed by the partners of LLP firm permitting the firm to enter into a JV agreement to be submitted as per proforma given in **Annexure-XXIV** (d) Special Power of Attorney/ Authorization issued by LLP firm (backed by resolution of partners) in favour of the individual to sign the tender, sign the MOU/ JV agreement on behalf of the LLP firm and create liabilities against the LLP firm as per proforma given in **Annexure XX**(duly registered with the Registrar or notarized)**.**(Required even if MOU/JV agreement is signed by the authorized/ power of attorney holder himself as per (c) above)
16.2.7.6	**Documents mandatory for Registered Society and Trust participating as a Memberof JV** (a) A copy of Deed of Formation (b) A copy of certificate of Registration. (c) A copy of Resolution passed by the executive members of Registered Society/Trust permitting the registered society/Trust to enter into a JV agreement as per proforma given in **Annexure XXVI.** (d)Special Power of Attorney/ Authorization issued by the registered society/ trust (backed by resolution of partners) in favour of the individual to sign the tender, to sign the MOU/ JV agreement and create liabilities against the Registered Society/ Trust as per proforma given in **Annexure-XXVII**(duly registered with the Registrar or notarized)**.** (Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per (c) above)
	Note to Para 16 1. The tenderers shall submit a certificate stating that they are not liable to be disqualified and all their statements/documents submitted along with bid are true and factual. Standard format of the certificate to be submitted by the bidder is enclosed as Annexure-II as mentioned in clause No. 16.1(b). Non submission of a certificate by the bidder shall result in summarily rejection of his/their bid. And 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. It will not be obligatory on the part of Tender Committee to scrutinize beyond the submitted document of tenderer as far as his qualification for the tender is concerned. 3. The DFCCIL reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the DFCCIL, make available all such information, evidence and documents as may be necessary for such verification. 4. Any such verification or lack of such verification by the DFCCIL shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the DFCCIL there under. 4.1 In case of any wrong information submitted by tenderer, the contract shall be terminated, Earnest Money Deposit (EMD), Performance Guarantee (PG) and Security Deposit (SD) of contract forfeited and agency barred for doing business on entire DFCCIL for 5(five) years. 4.2 In case of any information submitted by tenderer is found to be false forged or incorrect after the award of contract, the contract shall be terminated. Earnest Money Deposit (EMD),

	Performance Guarantee and Security Deposit available with the DFCCIL shall be forfeited. In addition, other dues of the contractor, if any, under this contract shall be forfeited and agency shall be banned for doing business for a period of up to five years. 5. No post tender submission of documents shall be permitted in respect of tender. However, only clarification can be called for by DFCCIL in respect of any part / document submitted by the tenderer which shall be responded to by the tenderer within 10 working days of the date of issue of such letter for clarifications, failing which the offer shall be dealt with as per available documents. **6. The documents mentioned 'mandatory' in clause No. 16 above are required to be uploaded by the contractor with tender document. If any of these documents is not uploaded along with the tender, the offer shall be summarily rejected.** 7. In addition to above Tenderer have to certify that neither I /We (name of the sole Proprietor firm/ Partnership Firm/Limited Company/ LLP/Registered Society/Trust / JV firm) nor any of the partner or partnership firm/ LLP /Member of Registered Society/ Trust / Constituent of JV firm including partner of partnership firm in JV has/ have been black listed or debarred by DFCCIL or any other Ministry /Department/ Public Sector Undertaking of the Government of India/ any State from participation in tenders/contract on the date of opening of bids either in our individual capacity or in any firm in which we are partners. **As per Clause No. 11(v),11(vi) Annexure 1 part I of GCC-2020, with up to date correction slip**
17.0	**Participation of Partnership Firms in works tenders** **The partnership firm shall be governed as per Clause No. 18.1 to 18.12 of Tender Form (second Sheet) Annex. I Part-I of GCC-2020, with up to date correction slip.**
18.0	**Participation of Joint Venture (JV) in Works Tender shall be governed as per Clause No. 17 of Tender Form (second Sheet) Annex. I Part-I of GCC-2020, with up to date correction slip on the date of opening of tender.**
19.	The tenderer shall submit the original copies of the documents as per Annexure II, IX, X, XI, XII, XIII, XIV, XV, XVII, XVIII ,XX, XXI, XXII, XXIII, XXIV,XXV , XXVI and XXVII as applicable for Sole Proprietor/Partnership firm/LLP/Registered Society & Trust/Limited Company/JV Firms as and when required by the DFCCIL for the verification. If the required documents are not submitted by the tenderer or any discrepancy between the scanned uploaded documents and original documents then the offer of the tenderer will be summary rejected and the action will be taken as per the various provisions of Affidavit to be submitted by the tenderer as per Annexure-II.
20.0	**Security Deposit:**

20.1	The Earnest Money deposited by the Contractor with his tender will be retained by the DFCCIL as part of security for the due and faithful fulfillment of the contract by the Contractor. The Security Deposit shall be 5% of the contract value. Security Deposit may be deposited by the Contractor before release of first on account bill in cash or Term Deposit Receipt issued from Scheduled Bank, 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 DFCCIL 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. Further, in case of contracts having value equal to or more than Rs. 50 crore (Rs Fifty crore) the Security Deposit may be deposited as Bank Guarantee Bond also, issued by a scheduled bank after execution of contract documents, but before payment of 1st on account bill. Provided further that the validity of Bank Guarantee Bond shall be extended from time to time, depending upon extension of contract granted in terms of Clause 17 of the Standard General Conditions of Contract. Further, in case Security Deposit has been submitted as Term Deposit Receipt/Bank Guarantee Bond in full amount, the Earnest Money deposited by the Contractor with his tender will be returned by the DFCCIL. Note: After the work is physically completed as certified by competent authority, Security Deposit recovered from the running bills of a Contractor can be returned to him, if he so desires, in lieu of Term Deposit Receipt/irrevocable Bank Guarantee for equivalent amount from Scheduled Bank, to be submitted by him. **As per Clause No. 16.(1) Part-II of GCC-2020 , with up to date correction slip**
20.2	**Refund of Security Deposit:** Security Deposit mentioned in sub clause (1) above shall be returned to the Contractor along with or after the following: a) Final Payment of the Contract as per clause 51.(1) **and** b) Execution of Final Supplementary Agreement or Certification by Engineer that DFCCIL has No Claim on Contractor and c) Maintenance Certificate issued, on expiry of the maintenance period as per clause 50 (1), in case applicable. **As per Clause No. 51.(1) and 16.2(i) Part-II of GCC-2020, with up to date correction slip**
20.3	**Forfeiture of Security Deposit**: Whenever the contract is rescinded as a whole under clause 62 (1) of GCC, the Security Deposit already with DFCCIL under the contract shall be forfeited. However, in case the contract is rescinded in part or parts under clause 62 (1) of GCC, the Security Deposit shall not be forfeited. **As per Clause No. 16.2(ii) Part-II of GCC-2020, with up to date correction slip**
21.0	No interest shall be payable upon the Earnest Money and Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited in terms of Sub Clause 16.(4)(b) of GCC2020with up to date correction slip will be payable with interest accrued thereon. **As per Clause No. 16.3, Part-II of GCC-2020, with up to date correction slip**

22.0	**Performance Guarantee** The procedure for obtaining Performance Guarantee is outlined below: (a) The successful bidder 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 up to 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 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 the DFCCIL, submission of PG can be accepted on the next working day. 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 DFCCIL shall be entitled to forfeit Earnest Money Deposit and other dues payable against that contract. In case a tenderer has not submitted Earnest Money Deposit 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 bidder shall submit the Performance Guarantee (PG) in any of the following forms, amounting to 3% of the contract value (for all tenders issued till 31.12.2021). The reduced percentage of Performance Security shall continue for the entire duration of the contract and there shall be no subsequent increase of Performance Security even beyond 31.12.2021.
	(i) A deposit of Cash; (ii) Irrevocable Bank Guarantee; (iii) Government Securities including State Loan Bonds at 5% below the market value; (iv) Deposit Receipts, Pay Orders, Demand Drafts and Guarantee Bonds. These forms of Performance Guarantee could be either of the State Bank of India or of any of the Nationalized Banks; (v) Guarantee Bonds executed or Deposits Receipts tendered by all Scheduled Banks; (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 favourof CPM, DFCCIL, Ajmer (free from any encumbrance) may be accepted. (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 up to the stipulated date of completion plus 60 days beyond that. In case, the time for completion of work gets extended, the Contractor shall get the validity of P.G. extended to cover such extended time for completion of work plus 60 days. (d) The value of PG to be submitted by the Contractor will not change for variation up to 25% (either increase or decrease). In case during the course of execution, value of the contract increases by more than 25% of the original contract value, an additional

	Performance Guarantee amounting to 3% (Three percent) for the excess value over the original contract value shall be deposited by the Contractor. On the other hand, if the value of contract decreases by more than 25% of the original contract value, Performance Guarantee amounting to 3% (Three percent) of the decrease in the contract value shall be returned to the Contractor. The PG amount in excess of required PG for decreased contract value, available with DFCCIL, shall be returned to Contractor as per his request duly safeguarding the interest of DFCCIL**.** (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. (f) Whenever the contract is rescinded, the Performance Guarantee already submitted for the contract shall be encashed in addition to forfeiture of Security Deposit available with DFCCIL. (g) The Engineer shall not make 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 agreement) in the event of: (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. (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. The Contract being determined or rescinded under clause 62 of the GCC **As per Clause No.16.(4), Part-II of GCC-2020, with up to date correction slip**
23	**MEASUREMENTS OF CONTRACTOR WORKS.**
23.1	The tenderer whether sole proprietor, a **company** or a partnership firm / **joint venture (JV) / registered society /registered trust 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. **As per Clause No. 15 of Annexure I part 1 of GCC-2020, with up to date correction slip**
23.2	**Measurement of works by DFCCIL :** The contractor shall be paid for the works at the rates in the accepted Schedule or Rates and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Engineer or the Engineer's representative in accordance with the rules prescribed for the purpose by the DFCCIL. The quantities for items the unit of which in the accepted Schedule of Rates is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one, for items the unit of which in the accepted Schedule of Rates is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Engineer shall be proper having regard to the progress of works. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the contractor who shall be present at the site and shall sign the results of the measurements (which shall also be signed by the Engineer or the Engineer's representative) recorded in the official measurements book as an acknowledgement of his acceptance of the

	accuracy of the measurements. Failing the contractor's attendance, the work may be measured up in his absence and such measurements shall notwithstanding such absence, be binding upon the contractor whether or not he shall have signed the measurement books provided always that any objection made by him to measurement shall be duly investigated and considered in the manner set out below : a) It shall be open to the contractor to take specific objection to any recorded measurements or Classification on any ground within seven days of the date of such measurements. Any re-measurement taken by the Engineer or the Engineer's representative in the presence of the Contractor or in his absence after due notice has been given to him in consequence of objection made by the Contractor shall be final and binding on the Contractor and no claim whatsoever shall thereafter be entertained regarding the accuracy and classification of the measurements. b) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements. **(As per Clause No. 45 (i), Part-II of GCC-2020, with up to date correction slip)**
23.2.1	**Measurement of Works by Contractor's Authorized Representative** (In case the contract provides for the same): (a) The contractor shall be paid for the works at the rates in the accepted Schedule of Rates and for extra works at rates determined under Clause 39 part II of GCC-2020, with up to date correction slip on of these conditions on the measurements taken by the contractor's authorized engineer in accordance with the rules prescribed for the purpose by the DFCCIL. The quantities for items the unit of which in the accepted schedule of Rates is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted Schedule of Rates is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Engineer. The date and time of test checks shall be communicated to the contractor who shall be present at the site and shall witness the test checks, failing the contractor's attendance the test checks may be conducted in his absence and such test checks shall not withstanding such absence be binding upon contractor provided always that any objection made by contractor to test check shall be duly investigated and considered in the manner set out below : i) It shall be open to the contractor to take specific objection to test checks of any
	recorded measurement within 7 days of date of such test checks. Any re-test check done by the concerned DFCCIL's authority in the presence of the Contractor or in his absence after due notice given to him in consequent of objection made by the contractor shall be final and binding on the Contractor and no claim whatsoever shall thereafter be entertained regarding the accuracy and classification of the measurements. ii) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements. **(b)Incorrect measurement, actions to be taken :** If in case during test check or otherwise, it is detected by the Engineer that agency has claimed any exaggerated measurement or has claimed any false measurement for the works which have not been executed; amounting to variation of 5% or more of claimed gross bill amount, action shall be taken as following: (i) On first occasion of noticing exaggerated/false measurement, engineer shall recover liquidated damages equal to 10% of claimed gross bill value. (ii) On any next occasion of noticing any exaggerated/false measurement, DFCCIL shall recover liquidated damages equal to 15% of claimed gross bill value. In addition the facility of recording of measurements by contractor as well as release of provisional payment shall be withdrawn. Once withdrawn, measurements shall be done by DFCCIL as per clause 45(i) of

	GCC-2020. The detailed procedure for recording of measurements, provisional payment, test check, final payment etc. shall be as per para 1316 A of the Indian Railway Code for Engineering Department. **As per Clause No. 45 (ii), Part-II of GCC-2020, with up to date correction slip**
Note:	'Contractor's authorized engineer' shall mean a graduate engineer or equivalent, having more than 3 year experience in the relevant field of construction work involved in the contract, duly approved by APM/DPM/PM/Dy. CPM. **As per Clause No. 1(1)(q), Part-II of GCC-2020, with up to date correction slip** **(Measurement of works by authorized representative) shall be applicable only for those contracts where specifically mentioned in additional special conditions of contract.**
24	**PAYMENT OF COTRACTUAL WORKS**
24.1	**"On-Account" Payments**: The contractor shall be entitled to be paid from time to time by way of "On-Account" payment only for such works as in the opinion of the Engineer he has executed in terms of the contract. All payments due on the Engineer's/Engineer's Representative's certificates of measurements or Engineer's certified "Contractor's authorized engineer's measurements" shall be subject to any deductions which may be made under these presents and shall further be subject to, unless otherwise required by Clause 16 of these Conditions, a retention of ten percent by way of Security Deposits, until the amount of Security Deposit by way of retained earnest money and such retentions shall amount to 6% of the total value of the contract provided always that the Engineer may be any certificate make any correction or modification in any previous certificate which shall have been issued by him and that the Engineer may withhold any certificate, if the works or any part thereof are not being carried out to his satisfaction.
24.2	**Rounding off Amounts:** - The total amount due on each certificate shall be rounded off to the nearest rupee, i.e. sum less than 50 paisa shall be omitted and sums of 50 paisa and more up to₹1 will be reckoned as ₹ 1.
24.3	**On account Payments Not Prejudicial To Final Settlement** "On-Account" payments made to the Contractor shall be without prejudice to the final making up of the accounts (except where measurements are specifically noted in the Measurement Book as "Final Measurements" and as such have been signed by the Contractor and Engineer's/ Engineer's Representative) and shall in no respect be considered or used as evidence of any facts stated in or to be inferred from such accounts nor of any particular quantity of work having been executed nor of the manner of its execution being satisfactory.
24.4	be made and the balance of account based on the Engineer or the Engineer's representative's certified measurements or Engineer's certified "contractor's authorized engineer's measurements" of the total quantity of work executed by the Contractor up to the date of completion and on the accepted schedule of rates and for extra works on rates determined under Clause 39 of these Conditions shall be paid to the Contractor subject always to any deduction which may be made under these presents and further subject to the Contractor having signed delivered to

	the Engineer enclosing either a full account in detail of all claims he may have on the DFCCIL in respect of the works or having delivered No Claim Certificate and the Engineer having after the receipt of such account given a certificate in writing that such claims are not covered under excepted matter i.e. Clauses 7(j), 8, 18, 22(5), 39, 43(2), 45(a), 55, 55-A(5), 57, 57A, 61(1), 61(2) and 62(1)(i) to xv (B) of Standard General Conditions of Contract or in any Clause(stated as excepted matter) of the Special Conditions of the Contract, that the whole of the works to be done under the provisions of the Contracts have been completed, that they have been inspected by him since their completion and found to be in good and substantial order, that all properties, works and things, removed, disturbed or injured in consequence of the works have been properly replaced and made good and all expenses and demands incurred by or made upon the DFCCIL for or in the respect of damage or loss by from or in consequence of the works, have been satisfied agreeably and in conformity with the contract.
25.0	**INSTRUCTIONS OF MODE OF PAYMENT IN WORKS TENDERS OR SERVICE TENDER THROUGH LETTER OF CREDIT (LC)**
25.1.1	For all the tenders having advertised cost of Rs. 10 lakh or above, the contractor shall have the option to take payment from DFCCIL through a letter of credit (LC) arrangement.
25.1.2	This option of taking payment through LC arrangement has to be exercised in IREPS (Indian Railways Electronic procurement System - the e-application on which tenders are called by DFCCIL) by the tenderer at the time of bidding itself, and the tenderer shall affirm having read over and agreed to the terms and conditions of the LC option.
25.1.3	The option so exercised, shall be an integral part of the bidder's offer.
25.1.4	The above option of taking payment through LC arrangement, once exercised by tenderer at the time of biding, shall be final and no change shall be permitted, thereafter, during execution of contract. In case tenderer opts for payment through LC following shall be the procedure to deal release of payment through LC: (a) The LC shall be a sight LC, (b) The contractor shall select his Advising/Negotiating bank for LC. The incidental cost towards issue of LC and its operation thereof shall be borne by the contractor. (c) SBI, New Delhi, Main Branch will be the nodal branch for issue of LCs based on online requests received from DFCCIL Accounts Units for tenders opened in financial year 2019-20. SBI branches where the respective DFCCIL Accounts Office has its Account (local SBI branch) will be the issuance/ reimbursing branch for LC issued under this arrangement. The Bank shall remain same for this tender till completion of contract. The incidental cost @ 0.15% per annum of LC value, towards issue of LC and operation thereof shall be borne by the contractor and shall be recovered from his bills. (d) The LC shall be opened initially for duration of 180 to 365 days in consultation with contractor. The LC shall be extended time to time as per the progress of the contract, on the request of the contractor. The value of LC to be opened initially as well as extended thereafter shall be finalized by the engineer in consultation with the contractor on the basis of expected progress of work. e) The LC terms and conditions shall inter-alia indemnify and save harmless the DFCCIL from and against all losses, claims and demands of every nature and description brought or recovered against the DFCCIL by reason of any act or omission of the contractor, his agents or employees, in relation to the Letter of Credit (LC). All sums payable/borne by DFCCIL on this account shall be considered as reasonable compensation and paid by contractor. (f) The LC terms and conditions shall inter-alia provide that DFCCIL will issue a Document of Authorization (format enclosed as ***Annexure-'B'***) after passing the bill for completed work, to enable contractor to claim the authorized amount from their bank. (g) The acceptable, agreed upon document for payments to be released under the LC shall be the Document of Authorization.

(h) The Document of Authorization shall be issued by DFCCIL Accounts Office against each bill passed by DFCCIL.
(i) On issuance of Document of Authorization, a copy of Document of Authorization shall be posted on IREPS for download by the contractor. A digitally signed copy of Document of Authorization shall also be sent by DFCCIL Accounts Office to DFCCIL's bank (Local SBI Branch).
(j) The contractor shall take print out of the Document of Authorization available on IREPS and present his claim to his bank (advising Bank) for necessary payments as per LC terms and conditions. The claim shall comprise of copy of Document of Authorization, Bill of Exchange and Bill.
(k) The payment against LC shall be subject to verification from DFCCIL's Bank (Local SBI Branch).
(l) The contractor's bank (advising bank) shall submit the documents to the DFCCIL's Bank (Local SBI Branch).
(m) The DFCCIL's bank (issuing bank) shall, after verifying the claim so received with reference to the digitally signed Document of Authorization received from DFCCIL
Accounts Office, release the payment to contractor's bank (advising bank) for crediting the same to contractor's account.
(n) Any number of bills can be dealt within one LC, provided the sum total of payments to contractor is within the amount for which LC has been opened.
(o) The LC shall be closed after the release of final payment including PVC amount, if any to the contractor.
(p) The release of performance guarantee or security deposit shall be dealt directly by DFCCIL with the contractor i.e., not through LC.
For opening of LC, executive department shall make a request letter to concerned Accounts Department on a format, placed as ***Annexure-'A'.***

Annexure-'A'

(Clause No. 24.2 of General Instructions to Tenderers)

Request letter from Executive branch to Accounts Office for opening of LC

Office of DFCCIL

No…… Dated…….

The Dy. CPM/Finance
Ajmer

Sub:- Opening of LC
Ref:-Supply Order / Contract Agreement No.

****

It is requested to open a sight LC against the above referred order/Agreement in favour of …….. The details of beneficiary are as under:

i) Name of Contractor/Supplier ii) Vendor code iii) Address iv) Tender No.
v) Contract Agreement No.
vi) Description of Goods/Service
vii) Value of Contract viii) Stages of payment
xi) Expected payment within 6 months (LC Amount) xii) Beneficiary bank details;

a. Bank name
b. Address

	c. Account No. d. IFSC Code It is certified that the supplier/contractor has exercised the option of taking payment due against the tender, through LC arrangement in IREPS portal at the time of bidding itself and the option has been flagged in the IREPS. This has the approval of …… xiii) Validity/period for which LC is to be opened. (Signature) Name…… Designation…….. (Official Seal)

Annexure-'B'

(Clause No. 24.1.5(f) of General Instructions to Tenderer)

LCDA No. (18 DIGIT IPAS GENERATED NO.)

Dated: ----------

DOCUMENT OF AUTHORIZATION

Reference: (i) Works Contract/ Supply Contract No……. dated……..
(ii) Inland Letter of Credit No…… Dated……..

This document is issued against contract No…… (FROM IREPS) …… DATED…….. FOR WORK OF …….. (DESCRIPTION OF WORK FROM IREPS)……

The beneficiary of the aforementioned Letter of Credit M/s……. (NAME AND VENDOR CODE)…… (Vendor Code…….. as per IREPS……..) Is entitled to receive payment aggregating INR …….SSS ……. (FROM ABSTRACT OF BILL PASSED)... Out of total LC amount of INR …… (FROM MASTER TABLE OF LC OPENED) …….. Against the first/second* commercial Invoice No. (FROM IPAS) …….. Dated…… FROM IPAS…… for INR (FROM IPAS) …… raised against the above contract from State Bank of India…….. (Branch FROM LC MASTER TABLE) ….. On the strength of this Certificate.

The details of payment already made to the beneficiary under this Letter of Credit are as follows:

S.No.	Invoice No.	Invoice date	Invoice Amount (INR)	LCDA No.	LCDA date	Amount paid (INR)

Total Paid

THIS PAYMENT: …… sass…….

LC balance after this payment: ……..

(Signature of authorized DFCCIL authority)

Name

Designation

Official Seal

26.0	**GUIDELINES FOR ELECTRONIC REVERSE AUCTION FOR WORKS, SERVICE CONTRACTS (For tenders valued more than Rs. 50 Cr. in each case):Not Applicable**

SPECIAL CONDITIONS OF CONTRACT
(GENERAL)

PART-IV
SPECIAL CONDITIONS OF CONTRACT (GENERAL)

1.0	These special conditions and the work schedule shall govern the works to be executed under this contract in addition to and/or in part supersession of the General Conditions of Contract-2020 and Standard Specifications as laid down in the RUIDP SOR-2013 as amended / corrected up to latest correction slips, RUIDP/MORTH specifications/Guidelines updated with correction slips, relevant BIS codes updated with correction slips. General Conditions of Contract-2020 and Standard Specifications as laid down for construction of ROBs in the contract as amended/corrected up to date will be applicable, copies of which can be seen in the office of CGM, DFCCIL on or before the opening of tender.
2.0	**Order of Precedence of Documents:** In a tender/contract, in case of any difference, contradiction, discrepancy, with regard to Conditions of tender/contract, Specifications, Drawings, Bill of quantities etc., forming part of the tender/contract, the following shall be the order of precedence: i.Letter of Award ii.Schedule of Items, Rates & Quantities iii.Special Conditions of Contract iv. Technical Specifications as given in tender documents v. Drawings vi. Indian Railways Standard General Conditions of Contract vii. Standard Specifications as laid down for construction of ROBs in the contract, as amended/ updated by correction Slips on or before the opening of tender. viii.RUIDP/MORTH specifications/Guidelines ix. Relevant B.I.S. Codes
3.0	Any special condition stated by the tenderer(s) in the covering letter submitted along with the tender shall be deemed as part of contract to such extent only as have explicitly been accepted by the DFCCIL.
4.0 4.1 4.2	**USE OF DFCCIL LAND** Use of DFCCIL land required by the contractor(s) for constructing temporary offices, quarters, hutments etc. for the staff and for storing materials etc. would be permitted to him/them free of charge by DFCCIL, if available. The location of these offices, hutments, stores etc., will be subject to the approval of the engineer or his authorized representative. The land will be restored to DFCCIL by the contractor(s) in the same condition as when taken over or in vacant condition as desired by the engineer, after completion of the work or at any earlier day, as specified by the Engineer. The failure to do so will make the contractor(s) liable to pay the cost incurred by the DFCCIL for getting possession of land. The tenderer(s) shall also acquaint himself /themselves with the availability of land, working space for his/their works etc. The DFCCIL will not acquire any land for the purpose of movement of vehicles of the Contractor/s for executing the work by the contractor/s.
5.0	**USE OF PRIVATE LAND** The Contractor will have to make his/their own arrangements for use of private land, outside DFCCIL limits for due fulfillment of contract or for borrow pits, approaches, etc., directly with the land owners or local authority and to pay such rents if any as are payable as may be mutually agreed upon between them.
6.	**FIGURES, DIMENSIONS ETC.** Figures, dimensions and drawings shall supersede measurements by scale and drawing to larger scale shall take precedence over those to a smaller scale. Special dimensions or directions in the specification shall supersede all else.

7.	**PLEA OF CUSTOM** The plea of custom prevailing will not on any account be permitted as excuse for an infringement of any of the conditions of the contract or specifications
8.0 8.1	**SEIGNIORAGE CHARGES** The contractor/s shall comply with all the instructions issued by the Chief Inspector of Mines in respect to the safety of the workmen and the working of quarries and maintain register in which shall be recorded, such information/s for supply annually to Chief Inspector of Mines of the Government of India, as required by him. Final payment will be released after producing the no dues certificate from Mining department or any other concerned office of the area. The contractor/s are required to produce necessary documentary proof regarding payment of royalty to Mining Department of the stone ballast supplied, as and when demanded by the DFCCIL administration. Final Bill shall be released only after production of "No Dues" certificate from the Mines Department, by the contractor.
8.2	The rates quoted by the tenderer shall be inclusive of seigniorage charges on all items of work to be executed under the contract, applicable as on the last date of submission of tender.
9.0	**TAXES** -The accepted rates should be deemed to include all taxes direct or indirect Including Income Tax leviable under Central/State or Local Bodies Act or Rules, Octroies, Tolls, Royalties, Seigniorages, Cess and similar imposts that may be prevailing from time to time in respect of land, structures and all materials supplied in the Performance of this Contract.
10.0	The Building and Other Construction workers (Regulation of Employment and conditions of service) Act, 1996 and the Building and Other Construction Workers Welfare Cess Act, 1996: The tenderers for carrying out any construction work must get themselves Registered with the Registering Officer under section 7 of the "Building and other construction workers act, 1996" and rules made there to by the concerned state Govt. and submit certificate of Registration issued from the Registering Officer of the concerned State Govt. (Labour Department). The Cess shall be deducted from contractor's Bills as per provision of Act.
11.0 11.1	**DEDUCTION OF INCOME TAX AT SOURCE** In terms of new section 194 inserted by the Finance Act 1972 in the Income Tax Act 1961, the DFCCIL shall at all the time arranging payment to the contractor sub-contractor (in case of sub-contractor only when the DFCCIL responsible for payment of the consideration to him under the contract) for carryout any work (including supply of labour for carryout the work under the contract) be entitled to deduct income tax at source or income comprised in the sum of such payments. The deduction towards income tax to be made at source from the payments due to non-residents shall continue to be governed by section 195 of the Income Tax Act, 1961.
12.0	**ROYALTIES AND PATENT RIGHTS** The contractor shall defray the cost of all royalties, fees and payment in respect of patents, patent rights and licenses which may be payable to patentee, license or other person or corporation and shall obtain all necessary licenses. In case of any breach (whether willfully or inadvertently) by the contractor of this provision, the contractor shall indemnify the DFCCIL and its officers, servants, representatives against all claims, proceedings, damages, cost, charges, acceptance, loss and liability which they or any of them, may sustain, incur or be put to by reason or inconsequence of directly or indirectly or any such breach and against payment of any royalties, damages or other monies which the DFCCIL may have to make to any person or paid in total to patent rights in respect of the users of any machine, instrument, process, articles, matters of thing constructed, manufactured, supplied or delivered by the contractors to his order under this contract.

13.0	**NOTICE TO PUBLIC BODIES** 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 leviable on account of his operations in 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.
14.0	**DAMAGE BY ACCIDENTS, FLOODS OR TIDES** The contractor shall take all precautions against damage from accident, floods or tides. No compensation shall be paid to the contractor for his plant or material lost or damaged by any cause whatsoever. The contractor shall make good the damages at his cost to any structure or part thereof by any cause during the course of the work.
15.0	**SERVICE ROADS** The Contractor/s will be permitted to make use of existing service roads, or service roads constructed by the DFCCIL for its use free of cost. New service roads required by the contractor/s either near the work site or elsewhere within or outside DFCCIL limits for carriage of materials or for any other purpose whatsoever, will have to be constructed and maintained by the contractor/s at his/their own cost. For the purpose of construction of service roads on DFCCIL land, permission will be given free of charge. If any land other than DFCCIL land is necessary to be acquired or to be entered upon, permission to enter in the land will have to be arranged by the contractor/s at his/ their cost. The contractor/s will not prefer any claim, whatsoever on this account. The DFCCIL, however, reserves the right to make use of such service roads as may be constructed by the contractor/s without payment of any charges.
16.0	**EMERGENCY WORKS** In the event of any accident or failure occurring in, on or about the work or arising out of or in connection with the construction, completion or maintenance of the works, which in the opinion of the Engineer requires immediate attention, the DFCCIL may bring its own workmen or other agency to execute or partly execute the necessary work or carry out repairs if the Engineer considers that the contractor/s is/are not in a position to do so in time and charge the cost thereof, which will be determined by the CGM, DFCCIL, to the contractor.
17.0 17.1	**Maintenance of Works:** The Contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the Tender Form after the date of issue of the certificate of completion by the Engineer or any other earlier date subsequent to the completion of the works that may be fixed by the Engineer, be responsible for and effectively maintain and uphold in good substantial, sound and perfect condition all and every part of the works and shall make good from time to time and at all times as often as the Engineer shall require, any damage or defect that may during the above period arise in or be discovered or be in any way connected with the works, provided that such damage or defect is not directly caused by errors in the contract documents, act of providence or insurrection or civil riot, and the Contractor shall be liable for and shall pay and make good to the Railway or other persons legally entitled thereto whenever required by the Engineer so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to by reasons or in consequence of the operations of the Contractor or of his failure in any respect. **(As per Clause No. 47 Part-II of GCC-2020, with up to date correction slip)**
17.2	**Certificate of Completion of Works:** As soon as in the opinion of the Engineer, the work has been completed and has satisfactorily passed any final test or tests that may be prescribed, the Engineer shall issue a certificate of completion duly indicating the date of completion in respect of the work and the period of maintenance of the work shall commence from the date of completion mentioned in such certificate. The certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the Contractor and that there is no due from the Contractor to Railways against the

	contract concerned. The Engineer may also issue such a certificate indicating date of completion with respect to any part of the work (before the completion of the whole of work), which has been both completed to the satisfaction of the Engineer and occupied or used by the Railway. When any such certificate is given in respect of part of a work, such part shall be considered as completed and the period of maintenance of such part shall commence from the date of completion mentioned in the completion certificate issued for that part of the work. **As per Clause No. 48(1) Part-II of GCC-2020, with up to date correction slip**
17.2.1	**At the final stage of completion and commissioning of work, in case the contractor's failure is limited to only some of the works costing not more than 2% of the original contract value,** and the Contractor request the engineer that such works may be offloaded from him and got executed through another agency and additional cost incurred, if any, should be recovered from his dues; the Engineer on being convinced that the anticipated additional cost for such works will not be substantial and can be recovered from the dues of the contractor and that such offloading will help in completion and commissioning of work, may agree to such offloading without any adverse repercussion on the performance guarantee and security deposit of the Contractor. However, the Engineer will not be under any compulsion to agree to such a request. Further, before issuing letter of acceptance to another agency for such work, the Contractor shall be informed of the rates at which the work will be got executed and the Contractor should give his consent to do so and certify that he would have no future claim on this account and that the extra expenditure so incurred, if any, by the Engineer in getting the offloaded work done, shall be recovered from subsequent Bills or any other dues of the Contractor. In case the Contractor fails to give such consent within three working days, the Engineer may treat the same as not acceptable to Contractor and proceed accordingly. In any case, Railway shall deduct 10% of cost of such work or Rs. One lakh whichever is lower, from the Contractor's dues as administrative charges for the process of finalizing new agency for such work irrespective of whether or not such work is finally offloaded from Contractor or not. **As per Clause No. 40A Part-II of GCC-2020, with up to date correction slip**
17.3	**Final Supplementary Agreement:** After the work is completed or otherwise concluded by the parties with mutual consent and taken over by the Railway as per terms and conditions of the contract agreement and there is unequivocal no claim on either side under the contract other than mentioned in item 4 of Annexure XIV, the parties shall execute the final supplementary agreement as per Annexure XIV of the GCC **As per Clause No. 48(3) Part-II of GCC-2020, with up to date correction slip**
17.4	**MAINTENANCE PERIOD** (a) For Supply, consultancy and hiring items. The maintenance period is limited to date of completion of work**.** **All works other than mentioned in clause 17.4 (a) above,** (b) The tenderer(s) shall be required to maintain the work effectively for a period of six months from the date of completion **as per Clause 47** of the General Conditions of Contract - 2020 and no part refund of Security Deposit shall be permitted during the maintenance period mentioned above.

17.5	**Maintenance Certificate:** The Contract shall not be considered as completed until a Maintenance Certificate, if applicable shall have been signed by the Engineer stating that the works have been completed and maintained to his satisfaction. The Maintenance Certificate shall be given by the Engineer upon the expiration of the period of maintenance or as soon thereafter as any works ordered during such period pursuant to Sub Clause (2) to Clause 48 of these Conditions shall have been completed to the satisfaction of the Engineer, and full effect shall be given to this Clause notwithstanding the taking possession of or using the works or any part thereof by the Railway. The Competent Authority to issue above Maintenance Certificate shall normally be the authority who is competent to sign the contract. If this Competent Authority is of the rank lower than JA Grade, then a JA Grade Officer (concerned with the work) should issue the certificate. The certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the Contractor and that there is no due from the Contractor to Railways against the contract concerned. **(As per clause No. 50(1) Part-II of GCC-2020, with up to date correction slip)**
18.0	**INSTRUCTIONS/DIRECTIVES OF THE ENGINEER'S REPRESENTATIVE**
18.1	The contractor shall at all times, execute the contract work only in the presence and under the supervision of the Engineer's Representative or a DFCCIL employee specifically appointed on his behalf. No work under the contract shall, therefore, be commenced by the contractor without the express permission of the Engineer's representative.
18.2	The contractor shall always execute the work under this contract in strict compliance with the instructions/directives by the Engineer's representative. Any act of non-compliance with the instruction/directives issued by the Engineer's representative shall be considered as a default of the contractor where after the DFCCIL shall be free to take further appropriate action as provided in the contract for dealing with such defaults of the contractors. The decision of the Engineer-in-charge whether there has been an act of noncompliance with the instruction/directives of the Engineer's representative for the purpose of this clause shall be final and conclusive.
18.3	The instructions/directives by the Engineer's representative shall not, however, absolve the contractor of his responsibility or reduce his responsibility in any manner whatsoever in regards to maintaining at all times the safe working conditions at the work site.
18.4	Any instructions or approval given by the Engineer's representative to Contractor in connection with the works shall bind the Contractor as though it had been given by the Engineer provided always as follows: (a) Failure of the Engineer's representative to disapprove any work or materials shall not prejudice the power of the Engineer thereafter to disapprove such work or material and to order the removal or breaking up thereof. (b) If the Contractor shall be dissatisfied by reason of any decision of the Engineer's representative, he shall be entitled to refer the matter to the Engineer who shall there upon confirm or vary such decision.
19.0	**NON-COMPLIANCE WITH THE INSTRUCTIONS/DIRECTIVES OF THE ENGINEER'S REPRESENTATIVE**
19.1	The contractor shall always comply with the instructions/directives issued by the Engineer's representative from the time to time. In the event of any non-compliance with such instructions/directives, apart from and in addition to other remedies available to the DFCCIL as specified herein above the Engineer's representative may employ at the works DFCCIL's workmen with necessary equipment as considered appropriate and adequate by him to provide the requisite conditions for the safe and unhampered movement of DFCCIL traffic. The decision of the Engineer's representatives in regard to the need of appropriateness and adequacy of the deployment of the DFCCIL Workmen with necessary equipment shall be final and conclusive.

19.2	When the DFCCIL workmen with necessary equipment are deployed in the above manner, recovery at the following rate shall be made from the contractor's dues under this contract or any other money of the contractor available with the DFCCIL under this contract. The recovery for the total DFCCIL Workmen Hours employed at the rate of Rs. 100/- (Rupees Hundred only) per Workmen-Hour irrespective of the type and grade of the DFCCIL Employee actually employed. The aggregate period of the Workman-Hours for the above recoveries shall be reckoned from the time the DFCCIL Workmen are actually deployed at the work site till the work is completed to the satisfaction of the Engineer's Representative whose decision in this regard shall be final and conclusive.
19.3	During the above-mentioned period of suspension of work, the contractor shall not in any manner attempt to carry out any work at the work site. Any such attempt of the contractor shall be deemed to be an unauthorized work on the work site. For such acts, the contractor shall then be liable for further appropriate action under the relevant provisions of the Indian Railway Act.
20.0	**WARRANTY** The Contractor(s) shall warrant the materials supplied under this contract to be free of any defects in material and workmanship under ordinary use and service.
21.0	**SHIFTING OF ELECTRICAL/TELEGRAPH WIRES**
	In some stretches, high-tension grid towers /electric telegraph/telephones wires or posts etc. are to be shifted. It is expected that the electric lines/towers will be shifted in good time but in case, there is any delay on this account suitable extension in date of completion will be considered and given to the contractor for only the effected portion and no compensation whatsoever in this respect or due to the delay thus caused will be payable and contractor has to adopt such methods of execution of earthwork so as not to cause any damage to existing structure lines etc.
22.0	**HANDING OVER OF SITE FOR WORK** The entire land required for this work is available. However, DFCCIL may not hand over the entire land required for completion of this work for making bank/cutting or excavation to the contractor(s) due to any unavoidable reasons. Land may be handed over in different stretches, which may not be continuous. Contractor(s) will be required to carry out the work in available stretches. If some stretch of land cannot be handed over to the contractor for borrowing earth or making bank/cutting within the contract period then suitable extension will be granted only for the affected portion without any payment of extra claim to the contractor.
23.0	**Working during Night:** The Contractor shall not carry out any work between sun-set and sun-rise without the previous permission of the Engineer. However, if the Engineer is satisfied that the work is not likely to be completed in time except by resorting to night work, he may order the same without confirming any right on the Contractor for claiming any extra payment for the same. **(Authority Clause No. 23 Part-II of GCC-2020, with up to date correction slip)**
24.0 24.1	**MODE AND TERMS OF PAYMENT** All payments will normally be made only for finished works on the basis of mode and terms of payments agreed upon and provided in the contract. Quantity of items to be paid as per approved drawing. No extra payment for any reason shall be considered.
24.2	**MANNER OF PAYMENT** Payment to the contractor will be made through Electronic Fund Transfer (EFT) for payment of running and final bills. The tenderer (s) will also fill the **Annexure-I** indicating the bank account number, name of bank and bank specific code number (MICR/IFSC) as enclosed. The conditions and **Annexure-I** will be part of the tender document.
25. 25.1	**ACCIDENT/NATURAL CALAMITIES** Vehicle and equipment of the contractor can be drafted by DFCCIL Administration in case of accidents/natural calamities involving human lives.

25.2	For payment purpose, the item may be operated as New Non-Schedule (NS Item) as per existing norms and powers delegated.
25.3	Contractor may submit list of vehicles and equipment available with him.
26.0	**MOBILIZATION ADVANCE** (Not applicable in this tender)
27.0	**STAGE PAYMENT ON SUPPLY OF STEEL IN WORKS CONTRACT** (For contract value Rs. 15.00 crores & above): **Not Applicable** for reinforcement steel and as per special condition of contract for structure steel supplied in this tender.
28.0	**BONUS FOR EARLY COMPLETION OF WORK**: In case of open tenders having value more than Rs. 20 crore and original period of completion 12 months or more, when there is no reduction in original scope of work by more than 10%, and no extension granted on either DFCCIL or Contractor's account, Contractor shall be entitled for a bonus of 1% for each 30 days early completion of work. The period of less than 30 days shall be ignored while working out bonus. The maximum bonus shall be limited to 3% of original contract value. The completion date shall be reckoned as the date of issuance of completion certificate by Engineer.
29.0	Contractor shall provide suitable manpower to Engineer in Charge or his representative at all times during currency of the contract for assisting him in giving layout of work, carrying out quality checks, taking measurements and other associated activities for effective supervision of work.
30.0	**DEPLOYMENT OF QUALIFIED ENGINEERS AT WORK SITES BY THE CONTRACTOR**(As per Clause No.26-A of G.C.C. 2014 Part-II with up-to-date correction slip)
30.1	The contractor shall also employ Qualified Graduate Engineer or Qualified Diploma Holder Engineer, based on value of contract, as may be prescribed by the DFCCIL through separate instructions from time to time.
30.2	In case the contractor fails to employ the Engineer, as aforesaid in Para 30.1, he shall be liable to pay liquidated damages at the rates, as prescribed in the tender document penalty at the rates, as may be prescribed by the DFCCIL (Para 30.4) through separate instructions from time to time for the default period for the provisions, as contained in Para 30.1.
30.3	No. of qualified Engineers required to be deployed by the Contractor for various activities contained in this works contract shall be as under:-(i) For tenders costing below Rs.50.00 Cr. 1) Graduate Engineer – Minimum 1 Nos. 2) Diploma Engineer – Minimum 1 Nos. (ii)For tenders costing Rs.50.00 Cr. and above. 1) Graduate Engineer – Minimum 2 Nos. 2) Diploma Engineer – Minimum 2 Nos.
30.4	In case the contractor fails to employ the Qualified Engineer, as aforesaid in Para 30.1 above, he, in terms of provisions of Clause 30.2 to the Conditions of Contract, shall be liable to pay an amount of Rs. 40,000/- and Rs. 25,000/- for each month or part thereof for the default period for the provisions, as contained in Para 30.3 above respectively.

31.0	**PRICE VARIATION CLAUSE**(As per Clause No. 46 A of GCC 2020 with up-to-date correction slip) For this contract, the PVC shall be paid as per clause No.46A of GCC 2020 with updated correction slips on the date of opening of tender and weightage of various components as mentioned in table 46A-6 of GCC for calculation of price variation of Major and Important Bridges Contracts. **Applicability** Price Variation Clause shall be applicable only for contracts having original contract value Rs. 5 Crore or more. Materials supplied free of cost by DFCCIL to the contractors and any extra NS items included in subsequent variations falling outside the purview of the Schedule of Items of tender shall fall outside the purview of PVC. If, in any case, accepted offer includes some specific payment to be made to Consultant or some materials supplied by DFCCIL free or at fixed rate, such payments shall be excluded from the gross value of work for the purpose of payments/ recovery of Price variation. PVC shall be applicable for positive variation quantities as per sanctioned Supplementary variation. As no separate schedule for cement & steel included in this contract, hence PVC shall be paid as per variation components of labour, material & fuel only. For calculation of price variation, cut-off date quarter for running bills/final bills will be as under: (a) In case of running bill, the date of measurement recorded in MB, shall be considered. If measurement date are more than one, then 1st date of measurement recorded in MB will be considered. (b) In case of final bill, the date of completion or 1stdate of measurement recorded in MB for final bill, whichever is earlier, will be considered.
32.A	**Communications to be in Writing:** All notices, communications, reference and complaints made by the DFCCIL or the Engineer or the Engineer's Representative or the Contractor inter-se concerning the works shall be in writing or email on registered e-mail IDs and no notice, communication, reference or complaint not in writing or through e-mail shall be recognized. **(As per Clause No. 4 Part-II of GCC-2020, with up to date correction slip)**
32.B	**Assignment or subletting of the contract:** (a) In case contractor intends to subcontract part of work, he shall submit a proposal in writing seeking permission of CGM for the same. While submitting the proposal to DFCCIL, contractor shall ensure the following : **(As per Clause No. 7 Part-II of GCC-2020, with up to date correction slip)** (i) Total value of work to be assigned to sub-contractor(s) shall not be more than 50% of total contract value. (ii) The subcontractor shall have successfully completed at least one work similar to work proposed for subcontract, costing not less than 35% value of work to be sub-letted, in last 5 years through a works contract directly given to him by a Govt. Department; or by a 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, registered at least 5 years back from the date of submission of proposal by contractor to DFCCIL and work experience certificate issued by a person authorized by the Public Listed Company to issue such certificates. In case contractor submits subcontractor's work experience certificate issued by public listed company, the contractor 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. The details shall be furnished as per the annexure IV A, IV-B, IV-C as applicable to the Engineer in charge

	(iii)There is no banning of business with the sub-contractor in force over IR/DFCCIL. (b) The Contractor shall provide to the Engineer a copy of the agreement to be entered into by Contractor with subcontractor. No subcontractor shall be permitted without a formal agreement between Contractor and subcontractor. This agreement shall clearly define the scope of work to be carried out by subcontractor and the terms of payment in clear & unambiguous manner. (c)On receipt of approval from Chief Engineer, Contractor shall enter into a formal agreement legally enforceable in Court of Law with subcontractor and submit a copy of the same to the Engineer. (d)The Contractor shall intimate to the Engineer not less than 7 days in advance, the intended date of commencement of subcontractor's work. (e)Once having entered into above arrangement, Contractor shall discontinue such arrangement, if he intends to do so at his own or on the instructions of DFCCIL, with prior intimation to Chief Engineer. (f)The Contractor shall indemnify DFCCIL against any claim of subcontractor. (g)The Contractor shall endeavor to resolve all matters and payments amicably and speedily with the subcontractor. (h) In addition to issuance of work experience certificate to Contractor, the Engineer, when, based on documents, is satisfied that subcontracted work has been carried out by subcontractor, shall issue work experience certificate to the subcontractor also for the portion of work subcontracted and successfully completed by the sub-contractor. (i)The responsibility of successful completion of work by subcontractor shall lie with Contractor. Subcontracting will in no way relieve the Contractor to execute the work as per terms of the Contract.
	(j)Further, in case Engineer is of the view that subcontractor's performance is not satisfactory, he may instruct the Contractor to remove the subcontractor from the work and Contractor has to comply with the above instructions with due promptness. Contractor shall intimate the actual date of discontinuation of subcontract to Engineer. No claim of Contractor whatsoever on this account shall be entertained by the DFCCIL and this shall be deemed as 'excepted matter' (matter not arbitrable). (k)The permitted subcontracting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the DFCCIL and shall not relieve the Contractor of any responsibility under the Contract.
33	**Display Board**: The Contractor shall be responsible for displaying the details of works i.e. name of work, approximate cost, expected date of completion, name and address of the Contractor and address of Engineer on a proper steel Board of size not less than 1.5m x 1m. **As per Clause No. 34.(5) Part-II of GGC-2020with up to date correction slip**
34.0	**VARIATIONS & MODIFICATION IN EXTENT OF CONTRACT**
34.1	**Modification to Contract to be in Writing:** In the event of any of the provisions of the contract required to be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the Railway and the Contractor and no work shall proceed under such modifications until this has been done. Any verbal or written arrangement abandoning, modifying, extending, reducing or supplementing the contract or any of the terms thereof shall be deemed conditional and shall not be binding on the Railway unless and until the same is incorporated in a formal instrument and signed by the Railway and the Contractor, and till then the Railway shall have the right to repudiate such arrangements.
34.2.1	**Powers of Modification to Contract:** The Engineer on behalf of the Railway shall be entitled by order in writing to enlarge or extend, diminish or reduce the works or make any alterations in their design, character position, site, quantities, dimensions or in the method of their execution or in the combination and use of materials for the execution thereof or to order any additional work to be done or any works not to be done and the Contractor will not be entitled, to any

	compensation for any increase/reduction in the quantities of work but will be paid only for the actual amount of work done and for approved materials supplied against a specific order.
34.2.2	(i) Unless otherwise specified in the special conditions of the contract, the accepted variation in quantity of each individual item of the contract would be upto 25% of the quantity originally contracted, except in case of foundation work. (ii) 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 upto the limit of 25% variation in quantity of individual item of works. (iii) 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 (a) Quantities operated in excess of 125% but upto 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; (b) Quantities operated in excess of 140% but upto 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; (c) 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. (d) Variation to quantities of Minor Value Item: The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1 % of the total original agreement value. d.(i) Quantities operated upto 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; d.(ii) Quantities operated in excess of 100% but upto 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; d.(iii) 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. (iv) 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. (v) 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. (vi) As far as SOR items are concerned, the limit of 25% would apply to the value of SOR schedule as a whole and not on individual SOR items. However, in case of NS items, the limit of 25% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).
34.3	**Valuation of Variations:** The enlargements, extensions, diminution, reduction, alterations or additions referred to in Sub-Clause (2) of this Clause shall in no degree affect the validity of the contract; but shall be performed by the Contractor as provided therein and be subject to the same conditions, stipulations and obligations as if they had been originally and expressively included and provided for in the Specifications and Drawings and the amounts to be paid therefore shall be calculated in accordance with the accepted Schedule of Rates. Any extra items/quantities of work falling outside the purview of the provisions of Sub-Clause (2) above shall be paid for at the rates determined under Clause-39 of these Conditions.

35.0 **Rates for Extra Items of Works**: Any item of work carried out by the Contractor on the instructions of the Engineer which is not included in the accepted Schedules of Rates shall be executed at the rates set forth in the "RUIDP SOR-2013" modified by the tender percentage, and for such items not contained in the latter, at the rate agreed upon between the Engineer and the Contractor before the execution of such items of work and the Contractors 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 Schedule of Rates does not include rate or rates for the 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 DFCCIL 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. The assessment of rates for extra items shall be arrived at based on the prevailing rates and by taking guidance from the following documents in order of priority:

(i) Analysis of Unified Schedule of Rates of Indian Railways.

(ii) Market Analysis

36.0 **EXTENSION OF TIME WITH LIQUIDATED DAMAGE (LD): FOR DELAY DUE TOCONTRACTOR**

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 17-A, of Part-II of GCC-2020, with up to date correction slip** the DFCCIL 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 as the Engineer may decide. On such extension the DFCCIL 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.

Sr. No.	Duration of extension of time under Clause 17-B	Rate of Penalty
(i)	Up to Twenty percent of original period of completion including period of extension of DOC granted under Section 17A(i)	As decided by Engineer, between 0.01% to 0.10% of contract value for each week or part of the week
(ii)	Above Twenty percent but up to Thirty percent of original period of completion including period of extension of DOC granted under Section 17A(i)	0.20% of contract value for each week or part of the week
(iii)	Above Thirty percent but up to Forty percent of original period of completion including period of extension of DOC granted under Section 17A(i)	0.30% of contract value for each week or part of the week

		(iv)	Above Forty percent of original period of completion including period of extension of DOC granted under Section 17A(i)	0.50% of contract value for each week or part of the week

Provided further, that if the DFCCIL 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 aforesaid, the DFCCIL 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.

As per Clause No. 17(B) Part-II of GCC 2020with up to date correction slip

37.0	**Quarterly Statement of Claims:** The Contractor shall prepare and furnish to the Engineer once in every quarter commencing from the month following the month of issue of Letter of Acceptance, an account giving full and detailed particulars of all claims for any additional expenses to which the Contractor may consider himself entitled to and of all extra or additional works ordered by the Engineer which he has executed during the preceding quarter and no claim for payment for such work will be considered which has not been included in such particulars.
38.0	**Settlement of disputes – Indian Railways Arbitration & Conciliation Rules** (as per Clause 63 & 64 and its Sub Clauses). All disputes shall be referred by the Contractor to the Director (Infra), DFCCIL Corporate Office, Supreme Court Maidan Metro Station Building, New Delhi.
39.0	All the Provisions as illustrated in clause 54 to 60 of GCC 2020, related to 'Labour' shall have to be complied with, by the contractor.
40.0	**Accepted Programme of Work:** The Contractor who has been awarded the work shall as soon as possible but not later than 30 days after the date of receipt of the acceptance letter in respect of contracts with initial completion period of two years or less or not later than 90 days for other contracts have to submit the detailed programme of work indicating the time schedule of various items of works in the form of Bar Chart/PERT/CPM. He shall also submit the details of organisation (in terms of labour and supervisors), plant and machinery that he intends to utilize (from time to time) for execution of the work within stipulated date of completion. The programme of work amended as necessary by discussions with the Engineer, shall be treated as the agreed programme of the work for the purpose of this contract and the Contractor shall endeavor to fulfill this programme of work. The progress of work will be watched accordingly and the liquidated damages will be with reference to the overall completion date. Nothing stated herein shall preclude the Contractor in achieving earlier completion of item or whole of the works than indicated in the programme
41.0	**Commencement of Works**: The Contractor shall commence the works within 07 days after the receipt by him of an order in writing to this effect from the Engineer and shall proceed with the same with due expedition and without delay. The Contractor shall establish a quality control mechanism before execution of the work, (i) Contractor shall submit a QAP "Quality Assurance Plan" for the scope of work to be executed. The QAP shall be submitted within 07 days of the issue of LoA and which shall be approved by the Engineer In charge. The QAP shall extensively include the organization, duties and responsibilities, procedures, inspections, documentation and quality control mechanism including sampling and testing of Materials, test frequencies, standards, acceptance criteria, testing facilities, reporting, recording and interpretation of test results, approvals, check list for site activities, and proforma for testing and calibration in accordance with the Specifications and Standards etc. (ii) Prior to the commencement of any construction activity, a method statement, proposed to be adopted for executing the Work shall be submitted to Engineer in Charge. The method statement shall include details of material acceptance, execution procedures, checks at various levels, quality parameters, equipment/ machineries, quality assurance, quality control measures, traffic management, inspection checklist, documentation and remedial works etc.

42.0	**Workmanship and Testing**: The whole of the works and/or supply of materials specified and provided in the contract or that may be necessary to be done in order to form and complete any part thereof shall be executed in the best and most substantial workman like manner with materials of the best and most approved quality of their respective kinds, agreeable to the particulars contained in or implied by the specifications and as referred to in and represented by the drawings or in such other additional particulars, instructions and drawings given during the carrying on of the works and to the entire satisfaction of the Engineer according to the instructions and directions which the Contractors may from time to time receive from the Engineer. The materials may be subjected to tests by means of such machines, instruments and appliances as the Engineer may direct and wholly at the expense of the Contractor
43.0	**Post Payment Audit**: It is an agreed term of contract that the DFCCIL reserves to itself the right to carry out a post-payment audit and/ or technical examination of the works and the Final Bill including all supporting vouchers, abstracts etc. and to make a claim on the Contractor for the refund of any excess amount paid to him till the release of security deposit or settlement of claims, whichever is later, if as a result of such examination any over-payment to him is discovered to have been made in respect of any works done or alleged to have been done by him under the contract
44.0	**Infringement of patents:** **Indemnification by contractor:-** In the event of any claim or demand being made or action being brought against the Employer for infringement of later patent in respect of any equipment, machine, plant, work or thing used or supplied by the Contractor under this contract or in respect of any methods of using or working by the Employer of such equipment machine, plant work or thing, the contractor shall indemnify the employer and keep him indemnified and harmless against all claims, costs, charges and expenses arising from or incurred by reason of such claim provided that the Employer shall notify the contractor immediately any claim is made and that the contractor shall be at liberty, if he so desires with the assistance of the Employer if required but at the Contractor's expense, to conduct all negotiations for the settlement of the same or any litigation that may arise there from and provided that no such equipment, machine, plant work or thing, shall be used by the Employer for any purpose or in any manner other than that for which they have been supplied by the Contractor and specified under this contract.
45.0	**Insurance (CAR Policy)-** Before commencing of works, it shall be obligatory for the contractor to obtain, at his own cost, insurance cover (CAR policy) in the joint name of the contractor and employer from reputed companies under the following requirements: (A) Liability for death of or injury to any person/ employer's staff / animals or things or loss of or damage to any property / things / the work of other contractor (other than the work) arising out of the performance of the Contract. (B) Construction Plant, Machinery and equipment brought to site by the Contractor. (C) Any other insurance cover as may be required by the law of the land. The contractor shall provide evidence to the employer / Engineer before commencement of work at site that the insurances required under the contract have been effected and shall within 60 days of the commencement date, provide the insurance policies to the Employer/Engineer, the contractor shall, whenever, called upon, produce to the engineer or his representative the evidence of payment of premiums paid by him to ensure that the policies indeed continue to be in force. The Contractor shall also obtain any additional insurance cover as per the requirements of the Contract.

	The Employer/Engineer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or his sub-contractor or petty contractor / other contractor working there. The Contractor shall indemnify and keep indemnified the employer / Engineer against all such damages and compensation for which the contractor is liable. The Policies of the contractor shall remain in force throughout the period of execution of the works and till the expiry of the defect liability period except for any specific insurance covers necessary for shorter period. If the Contractor fails to effect or keep in force or provide adequate cover as acceptable to the engineer in the insurance policies mentioned above, then in such cases, the engineer may effect and keep in force any such insurance or further insurance on behalf of the Contactor. The recovery shall be made at the rate of 1.5 times the premium/premiums paid by the engineer in this regard from the payment due to the Contractor or from the contractor's Performance security. However, the Contractor shall not be absolved from his responsibility and /or liability in this regard.
46.0	**Accident:-** **(a)** The contractor shall, in respect of all staff engaged by him or by his sub-contractor, indemnify and keep the employer at all times indemnified and protected against all claims made and liabilities incurred under Workman's Compensation Act, the Factories Act and the Payment of Wages Act, and rules made there under from time to time or under any other labour and Industrial Legislation made from time to time. **(b)** The contractor shall indemnify and keep the employer indemnified and harmless against all actions, suits, claim demands, costs, charges or expenses arising in connection with any death or injury sustained by any person or persons sustained due to the acts or omission of the contractor, his sub-contractors, his agents or his staff during the executions of this contract irrespective of whether such liability arises under the Workman's Compensation Act, or Fatal Accident Act or any other statute in force for the time being. **(c)** The contractor' liability to meet third party claims of the type outlined above will be applicable only in cases where accidents have been caused by workmanship, material, execution or negligence on the part of the contractor. **(d)** The contractor shall be responsible for all repairs and rectification of damages to completed works or works under execution due to DFCCIL accidents, thefts, pilferage or any other cause, without delay to minimize or to avoid traffic detentions, in a section until the installation are provisionally handed over to the employer.
47.0	**GST** GST as applicable from time to time on taxable value of each running account bill shall be paid by Contractor. Tenderer should bear the fact in mind while quoting the rates that GST will be paid by Contractor as per prevailing rate as applicable. Documentary evidence of deposition of GST will be produced by contractor.

48.0	**PERMITS, FEES, TAXES &ROYALTIES** Unless otherwise provided in the contract documents, the contractor shall secure and pay for all permits, Government fees and licenses necessary for the execution and completion of the works. The contractor shall pay all taxes and duties. The DFCCIL authorities will not take any responsibility of refund of such taxes/fees. Any violation, in the legal provision of taxes, duties, permits and fees, carried out by the Contractor and detected subsequently shall be sole responsibility of the Contractor and his legal heirs.
49.0	**STATUTORY INCREASE IN DUTIES, TAXESETC.** Tenderers will examine the various provisions of the central Goods and services Tax Act, 2017 (CGST)/ Integrated goods and service 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. Tenders will ensure that full benefit of input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates. All the taxes and duties levied by the State and Central Govt. and by Local Bodies at the prevailing rates applicable on the date of receipt of tender shall be fully borne by the Contractor and shall not be reimbursed to him on any account. The tender shall be inclusive of all taxes levies as mentioned in 1.7above. Further **DFCCIL** shall not honour any claim arising out of any increase in any of the prevailing statutory duties, taxes, levies, octroi, etc. At the time of quoting/bidding contractor should bear the above fact in mind. 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 DFCCIL immediately after the award of 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.
50.0	**EXCISE DUTY OR ANY OTHERTAXES/DUTIES:** The contractor shall bear full taxes /duties **levied by state government** and / or Central Government/ Local bodies from time to time. This would be entirely a matter between the contractor and the State / Central Government/ Local bodies. No claim, what so ever, on this account shall be entertained by DFCCIL.
51.0	**ROAD TAXCHARGES**: Road Tax/Charges levied by Government for movement of vehicles of contractor, used in transportation, shall be borne by the contractor and no re-imbursement on this account will be made by the DFCCIL.
52.0	**FOREIGN EXCHANGE REQUIREMENTS:** Any demand of foreign exchange for importing of equipment's and materials shall not be accepted.
53.0	**ANTI PROFITEERINGCLAUSE**: - The contractor should adhere to anti profiteering provisions as per section 171 of the CGST Act. Where due to change in the rates GST/Change in law, the contractor gets any credits/benefits, the same shall be passed on to DFCCIL by way of reduction in prices.

54.0 **INTEGRITYPACT:-**

As per office memorandum no F.No DPE/13(12)/11-Fin Dated 09.09.2011 issued by Ministry of Heavy Industries (DPE) all PSU should enter into Integrity pact in the required proforma in their procurement transaction/ Contracts with suitable changes specific to the situation in which the pact is to be used. The pact, entering into which would be a preliminary qualification for any bidder, essentially envisages an agreement between the prospective vendors / bidders and the DFCCIL, committing the persons/ officials on both sides not to resort to any corrupt practices in any aspect / stage of the contract. A copy of pre contract integrity pact is enclosed as form no 4 for signature of bidder as acceptance, as and when Independent External monitor is appointed.

55.0 **TOOLS-**

Tools required for this work will be arranged by the contractor.

a. All the tools and plants as required to execute the work will be arranged by contractor at his cost and nothing extra shall be paid on this account.

b. The contractor will ensure reconditioning / repair of the tools and plants at his own cost to keep them fit for use. He will repair the worn out tools at his own cost and nothing extra will be paid on this account.

c. The contractor should ensure that labour on work removes their tools clear of the track on the approach of the train. After the day's work the contractor should secure tools in proper tool boxes and in no case the labour be permitted to take tools to their homes. Tools should not be allowed to fall in unwanted hands who can tamper with the Railway/DFCCIL track.

In the event of accident at the work site the departmental enquiry will be held and in case it is established that derailment/accident has occurred on account of the contractor's negligence or the negligence of his men, damages as mentioned in the clause of penalty will be recovered.

56.0 **PENALTY –**

(a) In the event of accident at the work site the departmental enquiry will be held and in case it is established that derailment/accident has occurred on account of the contractor's negligence or the negligence of his men, damages at the following rates will be recovered from contractor: -

Accident involving use of accident Relief train = Rs.50000/-

Nominal accident not involving use of accident relief train Rs. 10000/-

(b) Penalty for an amount of Rs. 1000/- to Rs.20000/- depending on the nature of unsatisfactory service, will be deducted from the due amount in the following conditions:

- Any undisciplined behavior by the staff.
- Discourteous behavior towards any officer or staff of DFCCIL.
- Not wearing proper Safety PPE Kit.
- Not carrying out the duties listed in the scope of work in a satisfactory Manner.
- Damage or stealing of any asset or property of DFCCIL or officers and staff of DFCCIL

(c) Penalty for some of the breaches in services will be as follows: -

S.N	Type of breaches	Amount of Penalty
1	Staff not in proper PPE Kit.	Rs.50/- per staff per day
2	Staff turn up late	Rs. 100/- per staff per Hour (After one hour late staff will not be allow to work)
3	Failure to provide replacement in time	Rs.100/- per staff per day

57.0	In case the services of the Contractor are not found satisfactory, or there is a breach of any of the terms & conditions of the contract and/or fails/neglects to carry out any instruction issued to it by DFCCIL from time to time the same can be terminated by DFCCIL on giving of a notice of one month. In case of unsatisfactory performance of the contract, a warning letter will be issued to the Contractor. In case corrective action is not taken, DFCCIL shall have the right to terminate the agreement without any further notice. Unsatisfactory service in this case would be frequent absence or poor attendance of workman, inability to provide replacement, lackadaisical work in maintaining cleanliness, indiscipline in the premises (which includes taking alcohol, using foul language, getting involved in objectionable activities, etc.) or any other non-compliance of the provisions of the Agreement. The Contractor shall not terminate the services of hired staff unilaterally. In case any hired staff is proposed to be replaced/ terminated by the Contractor, such action should be taken only with approval of DFCCIL.
58.0	i. The work is to be executed as per the instruction of Dy.PM/APM of concerned IMD/ISMD. Concerned Engineer-in-charge or his representative will issue necessary general guidance & actually item to be operated as per the tender schedule & site condition. Decision of Engineering-in-charge or his representative shall be final and binding on the contractor. Tenderers are requested to visit the site of work before quoting their rates. ii. Contractor shall take all care to avoid any damage to electric overhead or underground cable telephone wires water pipe line sewerage system etc. Any damage to the DFCCIL/Railway property on account of contractor's negligence shall be made good at contractor's cost. iii. It will be the responsibility of the contractor to bring the material in good & safe condition during transportation of any item. Any damage to the DFCCIL/Railway material shall be recovered as per extant rules.

SPECIAL CONDITIONS OF CONTRACT

(SAFETY PRECAUTIONS)

PART-V

(A) SPECIAL CONDITIONS OF CONTRACT-(SAFETY PRECAUTIONS)

1.MEASURES TO BE ENSURED PRIOR TO START OF WORK

1.1 The contractor shall not start any work without the presence of DFCCIL supervisors at site.

1.2 The methodology in detail for execution of the work at site shall be approved by engineering in charge of the organization executing the work and copies of the same shall be available with contractor's supervisor, DFCCIL supervisor of the section in whose jurisdiction the work falls.

1.3 Before permitting the execution of certain works like earthwork in formation, bridge work, supply of ballast, transportation of rails, sleepers and other material, track linking, platform/any other civil work close to the running track etc. for new/existing rail lines, gauge conversion, doubling, traffic facility work, ROB/RUB, DFCCIL engineer-in-charge (APM/DPM/PM/Dy.CPM) of the section shall ensure that he received the prior intimation/confirmation of the following aspects from representative of contractor.

Name and address of the contract assigned to execute the work.

i) Name of the Contractor's supervisor

ii) List of the number(s) of individual vehicle(s)/ machineries, names and license particulars of the driver(s) proposed to be used by contractor.

iii) Information regarding location, duration and timings during which the vehicles/machinery are planned to be plied/worked.

iv) The supervisors and operators of the contractor proposed to be deployed at work site which is close to the running track, shall be imparted training by the DFCCIL trainer at contractor own cost about the safety measures to be adopted while working in the vicinity of running track. Further competency certificate to the individual supervisors/operator shall be issued as in Annexure-A by a DFCCIL officer not below the rank of Assistant level officer who is in charge of site. No supervisor/operator of the contractor shall work or allowed to work in the vicinity of running track who is not possession of valid competent certificate.

v) Survey of site by supervisor of contractor and DFCCIL to assess the precautions to be taken at site for working of trains and materials required for protection.

vi) Written advice to sectional APM/DPM about the detailed planning of work including protection of track and safety measures proposed to be adopted.

vii) A copy of the approved methodology (to be approved by engineer in charge) proposed to be adapted by the contractor with a view to ensure safety of trains passengers and workers.

viii) Assurance that the methods and arrangements are actually available at site before start of the work and the contractors supervisors and the workers have clearly understood the safety aspects and requirement to be adapted/followed while executing the work.

ix) An assurance register has been kept at site duly signed by both DFCCIL supervisor as well as by the contractor supervisor as a token of their having understood the safety precautions to be observed at site.

1.4 No work shall which is to be done near running track shall commence unless permitted by sectional APM/DPM/PM/Dy. CPM

1.5 Supplementary site specific instructions, wherever considered necessary shall be issued by the Engineer in Charge

1.6 Standard Check list on Safety at Work Sites shall be used to ensure that all the requisite measures have been taken before start of work.

2.0 PLYING OF ROAD VEHICLES AND WORKING OF MACHINERIES CLOSE TO RUNNING TRACKS

(i) Normally, the road vehicles shall be run or machinery shall be worked so as not to come closer than 6.0m from center line of nearest running track.

(ii) The land strip adjacent to running tracks, where road vehicle is to ply or machinery is to work, shall be demarcated by lime in advance in consultation with the DFCCIL's Supervisor. Wooden pegs at interval not exceeding 75mts 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.

(iii) 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 center 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 center line of nearest running track.

c. Presence of an authorized DFCCIL's representative shall be ensured before plying of vehicle or working of machinery.

d. DFCCIL'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. Lookout man shall be deputed for Safety at Work Sites.

f. On curves where visibility is poor, additional lookout men shall be posted.

(iv) **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 DFCCIL's Supervisor shall be ensured at worksite.

c. DFCCIL'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.

(v) **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 DFCCIL's representative. The road vehicle driver shall always face the DFCCIL track during the course of turning/reversing his vehicle. Presence of an authorized DFCCIL representative shall be ensured at such location.

(vi) 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 DFCCIL's representative and where adequate lighting arrangements are made and where adequate precautions as mentioned earlier have been ensured.

(vii) 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.

3.0 EXECUTION OF WORKS CLOSE TO OR ON RUNNING LINES

Any work close to or on running tracks shall be executed under the presence of a DFCCIL's Supervisor only.

(i) **Precaution to be taken to ensure safety of trains while execution of work close to the running line or on running lines.**

a) Contractor has deputed trained supervisors in required number at worksites duly certified by APM/DPM/PM/Dy. CPM in charge of the works.

b) Drivers of vehicle/operators of the machines have been briefed about the safety and precautions to be taken while moving / working close to traffic.

c) Contractor shall ply road vehicles/working of machinery only between sunset and sunrise. In case of emergency where it is necessary to work during night hours sufficient lighting shall be ensured in the complete work area for the safety of public and passengers. Also additional staff shall be posted as necessary for night working and taking safety precautions.

d) The contractor shall not change the approved vehicle/machinery and driver/operator for working at site. Contractor shall not induct any new vehicle/machinery and driver/operator without prior written approval of APM/DPM and the list of such changes with numbers of individual vehicle, name and license particulars of the driver shall be given to APM/DPM/PM/Dy. CPM of the section.

e) Contractor shall ensure that road vehicle/machinery ply/work in a way so that these do not infringe the line of demonstration.

f) Lookout men with required safety equipment shall be posted where necessary.

g) In unusual circumstances, where operator apprehends danger to track while working truck/machinery near running track, following action shall be taken.

a) The contractor/supervisor/vehicle operator immediately advice the situation to DFCCIL official/officials of the organization executing the work and assist him/them in protecting the track.

b) Protection shall be done as done for other emergencies

h) Individual vehicle/machinery shall not be left unattended at site of work. If it is unavoidable and becomes necessary to stable the road vehicle/machinery at site near the running track, these shall be properly secured against any possible roll off and always be manned even during non-working hours. In addition, the road vehicle / machinery should be stabled parallel to track only so that incase of failure of any securing arrangement, it may not roll towards the track.

i) All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimensions do not infringe. Necessary checks shall be exercised by site in charge from time to time.

j) During the hours of night, lamps of temporary indicators which are not of reflective type should be lit at sun-set and kept burning till sun rise, where trains run at night.

(ii) **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.

(iii) **Precaution to be taken during execution of works requiring traffic blocks.**

a) Any work, which infringes the moving dimensions or causes discontinuity in the track any activity making the existing track unsafe for passage of trains etc. Shall be started only after the traffic block has been imposed, DFCCIL servant in charge of the work is present at the worksite, engineering signals are exhibited at specified distance and flagmen are posted with necessary equipment to man them etc.

b) Before closing the work, the track shall be left with the proper track geometry so that the trains run safely and flagmen are kept in the night with safety and track protection equipment to patrol the stretch and take action to protect the track, if so warranted and inform the DFCCIL supervisors.

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.

(iv) **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 day time work should be strictly observed during night working.

(v) **Precautions to be taken to ensure safety of workers while working close to running lines.**

a) Any work close to or on running tracks shall be executed under the presence of a DFCCIL'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.

i) 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.

ii) All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimension do not infringe.

iii) Suitable speed restriction shall be imposed or Traffic block shall be ensured as required.

iv) The site shall be protected as per provisions of Para No. 806 & 807 of P.Way Manual as case may be.

v) Necessary equipment for safety of trains during emergency shall be kept ready at site.

c) A 'first aid kit' shall always be kept ready at site.

(vi) **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.

(vii) **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 DFCCIL's representative and contractor's representative.

b) The selected locations shall be marked by lime in advance.

c) Presence of an authorized DFCCIL'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.

(viii) **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 thetrain 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. 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.

(ix) <u>SAFETY ASPECTS TO BE OBSERVED WHILE WORKING IN OHE AREA</u>

a) No electrical work close to running track shall be carried out without permission of DFCCIL 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

g) If disconnected for the work, they are reconnected properly when the work is completed.

h) The track level is not raised beyond the permissible limit during the work.

4.0 PROTECTION OF TRACK DURING EMERGENCY

(i) 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.

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 DFCCIL official of such danger and assist him in protection of track.

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 after which he shall further proceed for not less than 1200m from the place of obstruction from BG 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.

Attempts shall also be made to send an advice to nearest DFCCIL station about the incident immediately.

(ii) 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.

(iii) Action to be taken if more than one track is obstructed.

a. In case of single line protection as above shall be done in both the directions from place of danger.
b. 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.
c. The protection shall be done in that direction and on that track first on which train is likely to arrive first.
d. The Contractor's Supervisors, Operators and lookout men shall be properly explained about the direction of trains on running tracks.

(iv) 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. DFCCIL will arrange to provide detonators, whereas Contractor shall arrange other equipment at his own cost.

(v) Arrangement of lookout men and competency required for lookout man to warn labour about approaching train.

a. Contractor will provide lookout men.
b. The lookout men shall be properly trained in warning to staff at worksite about approaching train.
c. Only those lookout men shall be provided at site who have been issued with a competency certificate by the DFCCIL's Supervisor.

d. In case, it is felt necessary to provide lookout men by DFCCIL, the charges for the same as fixed by DFCCIL Administration shall be recovered from Contractor.

5.0 TRAINING TO SUPERVISORS AND OPERATORS OF CONTRACTOR

The Supervisors and Operators of the contractor proposed to be deployed at wok site, which is close to the running track, shall be imparted mandatory training by the DFCCIL at site free of cost 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 DFCCIL training institute, the charges for the same, as decided by DFCCIL, shall be recovered from contractor. A competency certificate to this effect to the individual Supervisor/ Operator shall be issued as given below by a DFCCIL Officer not below the rank of Project Manager. 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 DFCCIL, charges at the rate of Rs. 500/- per man day shall be recovered from Contractor.

6.0 SPECIAL CONDITIONS FOR WORKING OF ROAD CRANES

To ensure safe working of road cranes used in works in connection with provision of ROB/RUB/Subways, following items shall invariable be ensured before putting the cranes to use :-

a) No machine shall be selected to do any lifting on a specific job until its size and characteristics are considered against the weights, dimensions and lift radii of the heaviest and largest loads.
b) The contractor shall ensure that a valid Certificate of Fitness is available before use of Road Cranes.
c) Contractors should utilize the services of any competent person as defined in Factories Act, 1948 and approved by Chief Inspector of Factories.
d) The laminated photocopies of fitness certificate issued by competent persons, the operators' photo, manufacturer's load chart and competency certificate shall always be either kept in the operator cabin or pasted on the visible surface of the lifting appliances.
e) All lifting appliances including all parts and gears thereof, whether fixed or movable shall be thoroughly tested and examined by a competent person once at least in every six months or after it has undergone any alterations or repairs liable to affect its strength or stability.

7.0 Contractor shall indemnify DFCCIL against any loss/damage to public property, travelling public, DFCCIL or his own staff due to his (contractor's) negligence. In case there is any mishap, a fact finding inquiry will be conducted by DFCCIL. A show cause notice will be issued to the contractor, in case he is prima-facie held responsible. Contractor's reply to show cause notice will be considered by the Engineer in Charge before taking final decision. In case contractor is found responsible for the mishap, recovery from him will be affected for only tangible direct losses.

Format for 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 DFCCIL 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

Part-VI- SPECIAL CONDITIONS OF CONTRACT (TECHNICAL)

1.5.1 This Tender shall be governed by Preamble and General instructions to tenderers, General condition of Contract, Special conditions of contract, Technical Specifications, Additional Technical specifications (if any), Drawings, Forms, Annexures, etc.

1.5.2 If there are varying or conflicting provisions in the documents forming part of the contract, Engineer shall be deciding authority with regard to the intentions of the provision and decision of Engineer will be final and binding on the contractor.

1.5.3 **Scheme of work:-** Within a period of 30 days beginning from the date of issue of Letter of Acceptance of Tender, the Contractor shall submit the detailed time schedule for execution of work and various documents enumerated in tender papers to the employer.

1.5.4 Quality Assurance Plan for Substructure and foundation

All materials used in the work shall be of the best quality as per codes. Quality Assurance Plan shall include for materials used and for workmanship of work. The contractor shall submit Quality Assurance Plan for the substructure and foundation. The contractor shall also ensure that the Employer's prescribed Quality Assurance Standards are rigidly followed in for the construction of substructure and foundation. These are to be approved from the client / DFCCIL

1.5.5 Quality Assurance Plan for Superstructure including bearings

(a) All materials used in the work shall be of the best quality as per codes / Specifications for fabrication and erection of steel girder bridges (B1-2001) amended till date. Quality Assurance Plan shall include for materials used and for workmanship of work. Quality Assurance Plan shall also be prepared for erection of girder and casting of deck slab. The contractor shall submit Quality Assurance Plan for the superstructure and bearing. The contractor shall also ensure that the Employer's prescribed Quality Assurance Standards are rigidly followed for the construction of superstructure including bearing. Since, the superstructure is Composite girder designed by RDSO. Quality Assurance Plan shall be in line with Quality Assurance plans prepared by RDSO for Open Web Girder and POT & POT-PTFE bearings. These plans are to be approved from the DFCCIL.

(b) The contractor shall ensure quality at all necessary points, whether at manufacturer's works, or in his depot or at work site as well as during erection through Quality Assurance Plan.

(c) The Contractor shall adopt a suitable Quality Assurance Programme according to approved instructions, drawings, specifications, etc.

(d) The erection scheme of composite girder shall be approved by DFCCIL before start of erection of girder.

(e) Fabrication of composite girder will be inspected by DFCCIL's Engineer in Charge / RDSO / PMC's representative.

1.5.6 **Expenses of Employer' Representative** – All the expenses of Engineer's representative, unless otherwise mentioned in tender document, shall be borne by the Employer whether the inspected material is finally utilised in work or not.

1.5.7 The decision of the Engineer shall be final in respect of acceptability or otherwise of any material, fittings, component or equipment required for the work.

1.5.8 This programme of the Contractor shall generally cover the followings: -

1.5.8.1 The organization to manage and implement the Quality Assurance programme.

1.5.8.2 The documentation control system:

(i) Basic control system.

(ii) Adopted at manufacturer's work
(iii) Adopted at the Contractor Depot and work site.

1.5.8.3. Procedure adopted for:
(i) Source Inspection.
(ii) Incoming raw material inspection.
(iii) Verification of material purchased.
(iv) Fabrication Controls.
(v) Site erection controls.

1.5.8.4 Inspection and Test Procedure for:
(i) Manufacture and quality control procedure.
(ii) Field activity.

1.5.8.5 System of handling and storage.

1.5.8.6 System of quality audit.

1.5.8.7 System of maintenance of records.

1.5.8.8 For the purpose of obtaining 'On Account Payment', the Contractor shall submit along with the invoice, the documents indicated in the prescribed quality Assurance standards which should inter alia cover the following as may be applicable in each case.
(i) Material test reports on raw materials used.
(ii) Material type and routine test report on components specification.
(iii) Inspection Plan with reports of the inspection Plan check points.
(iv) Routine test report.
(v) Factory test results as required under the specification.
(vi) Quality audit report including test check report of Employer's representative if any.

1.5.9 Traffic Blocks / Power Blocks / Shut Down:

(a) The contractor shall obtain Power / Traffic / Shut down in the name of authorized representative of DFCCIL. Engineer/Engineer's representative will facilitate to make arrangements to obtain power blocks / shutdown (hereinafter referred to as blocks) for works to be carried out along or adjacent to the track work. Works such as foundations of abutments/piers shall generally be done without blocks. However if block is required due to safety considerations, the construction shall be done under block. The requirement of shut down, power blocks etc. shall be assessed by the contractor and will be submitted to the Engineer/Engineer's representative. All the erection of girders etc. shall be done under minimum power block/shut down. Contractor will arrange minimum two gangs of labours i.e. expert of TR line fitters, Semi skilled fitters, labours etc. with supervisors and sufficient tools and tackles required as per site conditions. Work will be done day & night with war foot level with the approval of the Engineer/Engineer's representative. Block will be provided for each ROB individually.

(b) Blocks will be granted during day & night hours continuous. The Contractor shall confirm that he will equip himself to carry out all construction during night blocks efficiently by suitable special lighting equipments without any extra cost.

(c) Block period shall be counted from the time the TR-line is placed at the Contractor's disposal at the work-spot till it is cleared by the Contractor.

(d) Blocks will be subject to normal operating conditions and rules of the Railway. All formalities of exchanging private number etc with the traffic control/traction power controller will be carried out by the Engineer staff and for this purpose the Engineer will depute a representative for each ROB, who will be responsible for imposing power blocks/shut down and also removing the same after men, material and equipment have been cleared by the Contractor from running tracks and the same declared safe for traffic by Engineer/Engineer's representative in case of works involving safety of running tracks.

(e) The works required to be done under traffic block shall be carried out only in the presence of Railway / DFCCIL officials. The Railway supervisor shall certify safe conditions for passage of trains before resumption of traffic. The works to be done under traffic block shall be carried out under the provision of banner flag and protection of Engineering flagman.

(f) Any charges which may be levied by IR on account of "Possessions" shall be payable by the contractor but shall be reimbursed by the Employer**.** However penalties, if any, levied by Indian Railways caused due to any careless working or otherwise of violation of the Terms and Conditions of the track block, shall be payable by the contractor.

1.5.10 Work By Other Agencies

(a) Any other works undertaken at the same time by the Engineer direct or through some other agency at the same time or section where the contractor is carrying out his work will not entitle the contractor to prefer any claim regarding any delays or hindrances he may have to face on this account but the Employer shall grant a reasonable extension of time to the contractor. The contractor shall comply with any instruction which may be given to him by the Employer in order to permit simultaneous execution of his own works and those undertaken by other contractors or the DFCCIL without being entitled on this account on any extra charge.

(b) The contractor shall not be entitled to any extra payment due to hindrance resulting from normal Railway operations, such as delay on account of adequate number of and duration of blocks not being granted, operational delay in movement of work trains extension of time to the contractor.

1.5.11 Infringement of patents:

(a) The Contractor is forbidden to use any patents or registered drawings, process or pattern in fulfilling his contract without the previous consent in writing of the owner of such patent, drawing, pattern or trade mark, except where these are specified by the Employer himself. Royalties where payable for the use of such patented processes, registered drawings of patterns shall be borne exclusively by the Contractor. The contractor shall advise the Employer of any proprietary right that may exist on such processed drawings or patterns which he may use of his own accord.

(b) In the case of patent taken out by the Contractor of the drawings or patterns registered by him, or of those patents, drawings, or patents for which he holds a license, the signing of the Contract automatically gives the Employer the right to repair by himself the purchased articles covered by the patent or by any person or body chosen by him and to obtain from any sources he desires the component parts required by him in carrying out the repair work. In the event of infringement of any patent rights due to above action of the Employer, he shall be entitled to claim damages from the contractor on the grounds of any loss of any nature which he may suffer e.g. in the case of attachment because of counterfeiting.

(c) Indemnification by contractor:- In the event of any claim or demand being made or action being brought against the Employer for infringement of later patent in respect of any equipment, machine, plant, work or thing used or supplied by the Contractor under this contract or in respect of any methods of using or working by the Employer of such equipment machine, plant work or thing, the contractor shall indemnify the employer and keep him indemnified and harmless against all claims, costs, charges and expenses arising from or incurred by reason of such claim provided that the Employer shall notify the contractor immediately any claim is made and that the contractor shall be at liberty, if he so desires with the assistance of the Employer if required but at the Contractor's expense, to conduct all negotiations for the settlement of the same or any litigation that may arise there from and provided that no such equipment, machine, plant work or thing, shall be used by the Employer for any purpose or in any manner other than that for which they have been supplied by the Contractor and specified under this contract.

1.5.12 Insurance:-

Before commencing of works, it shall be obligatory for the contractor to obtain, at his own cost, insurance cover in the joint name of the contractor and employer from reputed companies under the following requirements:

(a) Liability for death of or injury to any person/ employer's staff / animals or things or loss of or damage to any property / things / the work of other contractor (other than the work) arising out of the performance of the Contract.

(b) Construction Plant, Machinery and equipment brought to site by the Contractor.

(c) Any other insurance cover as may be required by the law of the land.

The contractor shall provide evidence to the employer / Engineer before commencement of work at site that the insurances required under the contract have been effected and shall within 60 days of the commencement date, provide the insurance policies to the Employer/Engineer, the contractor shall, whenever, called upon, produce to the Engineer or his representative the evidence of payment of premiums paid by him to ensure that the policies indeed continue to be in force.

The Contractor shall also obtain any additional insurance cover as per the requirements of the Contract.

The Employer/Engineer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or his sub-contractor or petty contractor / other contractor working there. The Contractor shall indemnify and keep indemnified the employer / Engineer against all such damages and compensation for which the contractor is liable.

The Policies of the contractor shall remain in force throughout the period of execution of the works and till the expiry of the defect liability period except for any specific insurance covers necessary for shorter period.

If the Contractor fails to effect or keep in force or provide adequate cover as acceptable to the Engineer in the insurance policies mentioned above, then in such cases, the Engineer may effect and keep in force any such insurance or further insurance on behalf of the Contactor. The recovery shall be made at the rate of 1.5 times the premium/premiums paid by the Engineer in this regard from the payment due to the Contractor or from the contractor's Performance security. However, the Contractor shall not be absolved from his responsibility and /or liability in this regard.

1.5.13 Accident:-

(a) The contractor shall, in respect of all staff engaged by him or by his sub-contractor, indemnify and keep the employer at all times indemnified and protected against all claims made and liabilities incurred under Workman's Compensation Act, the Factories Act and the Payment of Wages Act, and rules made there under from time to time or under any other labour and Industrial Legislation made from time to time.

(b) The contractor shall indemnify and keep the employer indemnified and harmless against all actions, suits, claim demands, costs, charges or expenses arising in connection with any death or injury sustained by any person or persons sustained due to the acts or omission of the contractor, his sub-contractors, his agents or his staff during the executions of this contract irrespective of whether such liability arises under the Workman's Compensation Act, or Fatal Accident Act or any other statute in force for the time being.

(c) The contractor' liability to meet third party claims of the type outlined above will be applicable only in cases where accidents have been caused by workmanship, material, execution or negligence on the part of the contractor and further the liability of the contractor will be limited to Rs.5 lakh for any one accident.

(d) The contractor shall be responsible for all repairs and rectification of damages to completed works or works under execution due to Railway /DFCCIL accidents, thefts, pilferage or any other cause, without delay to minimize or to avoid traffic detentions, in a section until the installation are provisionally handed over to the employer.

1.5.14 Safety Measures:-

(a) The contractor shall take all precautionary measures in order to ensure the protection of his own personnel moving about or working on the railway premises, but shall then conform to the rules and regulations of the Railway if and when, in the course of the work there is likely to be any danger to persons in the employment of the contractor due to running traffic while working in the Railway siding and premises, the contractor shall provide flagman

or look out men for protection of such persons. The employer shall remain indemnified by the contractor in the event of any accident occurring in the normal course of work, arising out of the failure of contractor or his men to exercise reasonable precaution at all places of work.

(b) Blasting of rocks for foundation work shall be done only after due notice is given to the employer and time/s and date /s for blasting operations agreed to by the employer. Blasting, if required to be done in the vicinity of the track, shall not be undertaken until the Employer's flagmen on duty take necessary step to protect trains and the track is adequately protected by the contractor against damage by blasted rock.The contractor shall follow detailed instructions which will be issued to him regarding blasting operations in the vicinity of tracks.

(c) The contractor shall abide by all Railway regulations in force for the time being and ensure that the same are followed by his representatives, Agents or sub -contractors or workmen. He shall give due notice to his employees and workers about provision of this para.

(d) The works must be carried out most carefully without any infringement of the Indian Railway Act or the General and Subsidiary Rules in force on the Railway, in such a way that they do not hinder Railway operation or affect the proper functioning of or damage any Railway/DFCCIL equipment, structure or rolling stock except as agreed to by the employer, provided that all damage and disfiguration caused by the contractor at his own cost failing which cost of such repairs shall be recovered from the contractor.

(e) If safety of track or track drainage etc. is affected as a consequence of works undertaken by the contractor, the contractor shall take immediate steps to restore normal conditions. In case of delay, the employer shall, after giving due notice to the contractor in writing, take necessary steps and recover the costs from the contractor.

1.5.15 Guarantee / Defect Liability Period:-

(a) The Contractor shall guarantee that all the works executed under this contract shall be free from all defects and faults in material, workmanship and manufacture and shall be of acceptable standards for the contracted work and in full conformity with the technical specifications, drawings and other contract stipulations, **for a period of 12 months from the date of taking over by the Employer.**

(b) During the period of guarantee the Contractor shall keep available an experienced Engineer / man power to attend to any defective works / installations resulting from defective erection and/or defect in the installation supplied by the Contractor. This Engineer shall not attend to rectification of defects which arise out of normal wear and tear and come within the purview of routine maintenance work. The contractor shall bear the cost of modifications, additions or substitutions that may be considered necessary due to faulty materials or workmanship for the satisfactory working of the equipment. The final decision shall rest with the Engineer his successor(s)/Nominee.

(c) During the period of Guarantee the Contractor shall be liable for the replacement at site of any parts which may be found defective in the executed work whether such parts / structural elements of his own manufacture or those of his sub-contractor / supplier whether arising from faulty materials, workmanship or negligence in any manner on the part of the Contractor provided always that such defective parts as are not repairable at site are promptly returned to the Contractor if so required by him at his (Contractor's) own expenses. In case of parts of executed work detected during guarantee period, contractor should replace all such items irrespective of the fact whether all such items have failed or not. The Contractor shall bear the cost of repairs carried out on his behalf by the Employer at site. In such a case, the contractor shall be informed in advance of the works proposed to be carried out by the Employer.

(d) If it becomes necessary for the Contractor to replace or renew any defective portion of the structural elements until the expiration of 12 months from the date of such replacement or renewal or until the end of the above mentioned period whichever is later.

Such extension shall not apply in case of defects of a minor nature, the decision of the General Manager/ROB/CPM or his successor/nominee being final in the matter. If any defect be not remedied within a reasonable time during the aforesaid period the Employer may proceed to do work at the Contractor's risk and expense, but without prejudice to any other rights and remedies which the Employer may have against the Contractor in respect of such defects or faults.

(e) The repaired or renewal parts structure shall be delivered / supplied and erected / executed on site free of charge to the employer.

(f) Any materials, fittings, components or equipments / structure supplied under items for supplying / providing and fixing in schedule shall also be covered by the provisions of this paragraph. The liability of the Contractor under the guarantee will be limited to re-supply of components / structure installation and fittings.

1.5.16 Final Acceptance:-

(a) The final acceptance of the entire work executed shall take effect from the date of expiry of the period of guarantee / Defect Liability period as defined in paragraph 1.5.15 above of the expiry of the last of the respective periods of guarantee of various ROBs , provided in any case that the Contractor has complied fully with his obligations under clause 1.5.15 in respect of each R O B , provided also that the attention has been paid by way of maintenance by the Employer.

(b) If on the other hand the contractor has not so complied with his obligation under Para 1.5.15 above in respect of any work, the Employer may either extend the period of guarantee in respect of that work until the necessary works are carried out by the Contractor or carry out those works or got them carried out suo-moto on behalf of the Contractor at the Contractor's expenses. After expiry of the period of guarantee for each work, a certificate of final acceptance for the section shall be issued by the Employer and the last of such certificate will be called the last and final acceptance certificate. The contract shall not be considered as completed until the issue of final acceptance certificate by the Employer.

(c) The Employer shall not be liable to the Contractor for any matter arising out of or in connection with the contract or execution of the work unless the Contractor shall have made a claim in writing in respect thereof before the issue of final acceptance certificate under this clause.

Notwithstanding the issue of final acceptance certificate the Contractor and the Employer (subject to sub-clause as above) shall remain liable for fulfilment of any obligation incurred under the provision of the contract prior to the issue of final acceptance certificate which remains unperformed at the time such certificate is issued and for determining the nature and extent of such obligation the contract shall be deemed to remain in force between the parties hereto.

1.5.17 Payment:-

Payment will be governed by the terms specified in Part-I, Chapter IV and in accordance with accepted schedule of prices, read with relevant para of the other parts and Chapters of the Tender Papers. The employer retains the right to withhold money due to the contractor arising out of this contract for any default of the contractor.

(i) The Contractor shall, whenever required, produce or cause to be produced for examination by the Employer any quotation / invoice, cost of other account, book of account, voucher, receipt letter, memorandum paper or writing or any copy of or extract from any such document and also furnish information and returns verified in such manner as may be required in anyway relating to the execution of this contract or relevant for verifying or ascertaining the cost of the execution of this Contract (the decision of the employer on the question of relevancy of any documents, information or return being final and binding on the parties). The Contractor shall similarly produce vouchers etc., if required, to prove to the Employer that materials supplied by him are in accordance with the specifications laid down in the contract.

(ii) If any portion of the work be carried out by a sub-contractor or any subsidiary or

allied firm or company the Employer shall have power to secure the books of such sub-contractor or any subsidiary or allied firm or company, through the Contractor, and such books shall be open to his inspection. The Contractor should seek prior permission from the employer for subletting whole and/or part of the work to any sub-contractor.

(iii) The obligations imposed by sub-clause (i) and (ii) above are without prejudice to the obligation of the Contractor under any statute, rules or order binding to the Contractor or other conditions of the contract.

(iv) It is an agreed term of the contract that the employer reserves the right to carry out post-payment Audit and/or technical examination of the works and the final bill, including all supporting vouchers, abstracts etc. and to make a claim on the Contractor for the refund of any excess amount paid to him if as a result of such examination any over payment to him is discovered to have been made in respect of any work done or alleged to have been done by him under the contract.

1.5.18 All payments in respect of the contract during the currency of the contract shall be made through Electronic Clearing System (ECS) / National Electronic Funds Transfer (NEFT/RTGS). The successful tenderer on award of contract must submit ECS/NEFT/RTGS Mandate Form complete in all respects as detailed at Form No. 8 of the tender document. However, if the facility of ECS/NEFT/RTGS is not available at a particular location, the payments shall be made by cheque.

1.5.19 Performance Guarantee:-

(i) The Bank Guarantee for performance Guarantee shall remain valid until a date 60 days (or as specified in the Contract) after expiry of Defects Liability Period.

(ii) The Bank Guarantee for performance Guarantee shall be submitted invariably in the format given in the bidding document.

(iii) The performance Guarantee shall be released 21 days after issue of performance certificate.

1.5.20 Arbitration:- Refer to clause 63 of GCC.

1.5.21 **MOBILIZATION ADVANCE:** Not applicable in this tender.

1.5.22 VARIATIONS IN EXTENT OF CONTRACT (superseded GCC Para 41 & 42)

1.5.22.1 Modification to contract to be in writing.

1.5.22.1 Powers of modification to contract:- Refer to clause 42 (1) of GCC.

1.5.22.3 The quantities of items shown in the Bill of Quantities are approximate, and liable to vary during the actual execution of the work. The Contractor shall be bound to carry out and complete the stipulated work, irrespective of the variations in individual items, specified in the Bill of Quantities. Such variations in quantities shall be paid for in the manner laid down below:

(i) Unless otherwise specified in the contract, the accepted variation in quantity of each individual item of the contract would be up to 50% of the quantity originally contracted, except in case of foundation work. 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 50% variation in quantity of individual item of works.

(ii) In case of earthwork, the variation limit of 50% shall apply to the gross quantity of earth work and variation in the quantities of individual classifications of soil shall not be subject to this limit.

(iii) In case of foundation work, no variation limit shall apply and the work shall be carried out by the contractor on agreed rated irrespective of any variation.

1.5.22.4 Valuation of variations:- Refer to clause 42 (3) of GCC.

1.5.22.5 Variations In Quantities During Execution Of Works Contracts :-

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

1. Individual NS items in contracts shall be operated with variation of plus or minus 50% and payment would be made as per the agreement rate. For this, no finance concurrence would be required.

2. In case an increase in quantity of an individual item by more than 50% of the agreement quantity is considered unavoidable, the same shall be got executed by floating a fresh tender. If floating a fresh tender for operating that item is considered not practicable, quantity of that item may be operated in excess of 150% of the agreement quantity subject to the following conditions:

(a) Operation of an item by more than 150% of the agreement quantity needs the approval of competent authority with concurrence of associate finance ;

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

(c) Execution of quantities beyond 150% of the overall agreemental value should not be permitted and, if found necessary, should be only through fresh tenders or by negotiating with existing contractor, with concurrence of finance and approval of competent authority.

3. In cases where decrease is involved during execution of contract:

(a) The contract signing authority can decrease the items upto 50% of individual item without finance concurrence.

(b) For decrease beyond 50% for individual items or 50% of contract agreement value, the approval of competent authority, after obtaining 'No Claim Certificate' from the contractor and with finance concurrence, giving detailed reasons for each such decrease in the quantities.

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

4. The limit for varying quantities for minor value items shall be 100% (as against 50% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1% of the total original agreement value.

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

6. As far as SOR items are concerned, the limit of 50% would apply to the value of SOR schedule as a whole and not on individual SOR items. However, in case of NS items, the limit of 50% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).

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

Note: Variation to be approved should be limited so as not to completely change the scope, character and purpose of the original contract.

1.5.23 Variation in Quantity of items not covered by the Bill of Quantities.

1.5.23.1 If any item of work not provided for in the accepted Bill of Quantities and required to be executed for completion of work, the Contractor on receipt of instructions from the Engineer, shall be bound to carry out such items of work at the rates to be decided as per sub-clause 1.5.23.2 and 1.5.23.3.

1.5.23.2 The rate for such extra items shall be derived from rate for similar items available in the accepted Bill of Quantities.

1.5.23.3 In case rates can not be derived from the accepted Bill of Quantities, the rate may be worked out on the following basis:

(a) Cost of materials and consumables at current market rates, as actually utilised in the final finished permanent work, including a reasonable percentage for wastage and cost of loading, unloading and transportation.

(b) Cost of labour required for the work.

(c) Hire charges for plant and machinery, scaffolding, shuttering, forms, etc. required to be used at the site of the work.

(d) An amount of 10-15%(as per ref. SOR etc) of items (a), (b) and (c) above to allow for Contractor's overheads, profits and other contingencies.

1.5.23.4 In all cases where extra items of work are involved, for which there are no rates in the accepted Bill of Quantities, the Contractor shall give a notice to the Engineer, of at least 7 days before the need for their execution arises.

1.5.23.5 In case rates cannot be derived from the accepted Bill of Quantities, the rate may be worked out on the following basis:

(a) Such a notice shall not however be necessary if the Engineer has already instructed in writing to take up such an item of work. To decide the rate, the Contractor shall furnish detailed analysis of the rates on the lines mentioned in sub-clause 1.5.23.2 and 1.5.23.3 above and attend a meeting with Engineer to settle the rate as and when called for. The Contractor shall be bound to furnish the requisite details and to attend the meeting.

(b) **Provisional payment for extra item:** In case mutually agreeable settlement of rates is not arrived at between the Engineer and the Contractor, the Contractor shall be bound to carry out the works at rates to be decided by the Engineer. In the absence of a finalised rate for a new item, the Engineer shall be entitled to certify payment to the Contractor based on a provisional rate fixed by the Engineer for the work done under the new item. This shall be subject to upward or downward adjustment after the rate is finalised by the Engineer for that item.

(c) The decision of the Engineer under this clause shall be final and binding.

1.5.24 SITE OFFICE FOR EMPLOYER:

1.5.24.1 The contractor has to provide a reasonable office accommodation of suitable size at each ROB's site (about 500sqft) as approved by the Engineer as far as possible close to ROB locations under this contract for supervisory staff of the Employer and Consultants. The office accommodation shall be maintained by the contractor by providing all required furniture as mentioned in technical specifications along with a gas connection for office pantry. The contractor will also provide round the clock watch & ward, one Messenger for communication between site & offices and one for maintaining the pantry etc. The cost is incidental & deemed inclusive in cost to complete the contract and no separate payment shall be made for the above mentioned provisions except relevant SOR item. The rentals along with electrical, water supply and other charges shall be arranged by the contractor for accommodation/s provided by the contractor during entire contract period as directed & decided by the Engineer. The contractor shall take away all material, furniture & equipment provided at accommodation/s after completion of contract but upon obtaining written approval from the Engineer and/or as decided by the Engineer.

1.5.24.2 The office, accommodation/s shall be arranged at strategically suitable location as decided by the Engineer at each ROB site.

1.5.24.3 The Contractor shall arrange & provide reasonable furnished office, accommodation/s, good for the Employer's supervisory staff, having with required accessories and compatible UPS/Inverter power backup. The Contractor shall provide the office accommodation within one month from the date of LOA. The rentals for accommodation/s provided, Telephone, electric & water charges etc. will be arranged by the contractor on time. The list of furniture and equipments is given below, which are to be provided and maintained for site office under this contract package. All Cost towards provision of stationary, photocopy, printing of drawings, record maintenance etc. will be incurred by contractor as part of office maintenance.

1.5.24.4 Following furniture shall be provided and maintained by the contractor at his own cost at site of ROB to the satisfaction of the Engineer including Electrical, Water expenses etc. for execution:

Sr. No.	Item reqd. at site office	Specification	Nos. reqd.
1.	Office table	As approved by Engineer	3
2.	Office chair	As approved by Engineer	3
3.	Visitor chair	A approved by Engineer	4

5.	Ordinary chairs	As approved by Engineer	6
6.	Stools	As approved by Engineer	2
7.	Steel Almirah	Make-Godrej Store well 1890x900x590 mm plain with locker or equivalent as approved by Engineer	2
8.	Air Conditioner	As approved by Engineer	1
9.	Telephone & Fax machine	Telephone and Fax machine with STD and Internet facility.	1
10.	Laptop (Core-i7) with printer	HP/ HCL /Dell /SONY or equivalent including with applicable soft wares as AutoCAD, MS Project etc. along with one printer four in one type print, fax, scan & photo copy	1
11.	Refrigerator	Make Godrej or equivalent 185 ltr. Minimum	1
12.	Fire Extinguisher	As per requirement for office	1 set

1.5.24.5 Site office shall be furnished as per requirement of the Employer. The contractor shall supply new furniture, equipment, pantry utensils, reasonable Crockery & Cutlery etc. as decided by the Engineer. All the furniture etc. shall become the property of the contractor after the completion of the contract the same shall be taken away by the contractor as decided by the Engineer. The cost for providing & maintenance of office, accommodation is incidental to work & no separate payment shall be made. If the contractor fails to provide site office facilities as detailed above, before completion of work as decided by DFCCIL, a penalty of Rs.40000/- per month shall be recovered from contractor's bill/dues.

1.5.25 RELOCATION OF UTILITIES WITHIN ROB LIMITS:

1.5.25.1 At the time of start of work, contractor has to plan and arrange to verify the utilities falling in ROB ROW required to be shifted under witness to Engineer & utility owner deptt. and submit one copy of the same to DFCCIL for record. The utilities to be shifted well in advance by contractor, so that no any delay may occur for construction of ROB structure. No any claim in this regard will be entertained by DFCCIL. In some stretches, telegraph/ telephones wires/posts, Water Supply Pipe Lines etc. are required to be shifted. It is an integrated part of execution under this contract that the fouling utilities will be shifted by the contractor within specified time deemed inclusive within the contract period including all procurement of relevant material etc. complete. *No extension of time shall be considered on this account, until the Engineer agrees and assess on reasonable grounds/valid reasons that are not attributable to the contractor*.

1.5.25.2 The contractor has to arrange relocation of all leftover and hindering utilities, underground and over ground both type, which affect the completion of work but under the supervision of concerned Government Department /Autonomous bodies and shall ensure the work in manner that ROB work is not be affected & delayed on this account. The estimated cost for utilities relocation has been included in contract BOQ and is approximate. Any other utility item not mentioned in BOQ but located underground during execution & if creating obstacle to ROB work, shall also be relocated by the contractor. The payment for all relocation will be measured under relevant item of RUIDP SOR 2013 plus/minus % above/below accepted under this contract. The decision of the Engineer shall be final and binding upon contractor. ***The departmental supervision charges will be if remitted by the contractor after obtaining from respective department, the same will be reimbursed upon production of proof of payment i.e. money receipt for actual amount (without any overheads and/or tender premium) as remitted to the department concerned***. If contractor delay's in process of utility shifting for any reason, ROB construction work may hamper/delay and for such delay on account of contractor a penalty of Rs.20000/- per case may be imposed by DFCCIL.

1.5.25.3 Any work which may cause adverse effect on both rail & road traffic operation, any accident, damage to property of Government or Public etc., attributable due to the fault of contractor, shall be the responsibility of the contractor to make good the damages at his cost. Any penalty levied by Railways / other department on this context towards Employer, shall be recovered from the contractor.

1.5.26 Electrical items

1. The work shall be carried out in accordance with the approved specification/drawing and other relevant standard of general electrical work as specified and instruction of the Engineer.
2. Work shall be carried out strictly as per IE rules and wherever applicable equipments should comply with latest Indian Standards, Statutory Regulations and Labour Acts etc.
3. Energy efficient equipment shall be used as prescribed in energy Conservation Building Code-2007 of BEE and star ratings of BEE wherever applicable. Contractor shall arrange inspection of major electrical assets / equipments at his own expenditure as per railway requirement.
4. The work shall be carried out in best workmanship like manner and any defect in the work due to changes in the design etc. as pointed out by DFCCIL authority shall be carried out by the contractor.
5. In case of any dispute regarding the lay out and any other technical matter, the decision of the Engineer will be final and binding on the contractor.
6. Inspection of Material

(a) For inspection of the material as desired by DFCCIL, Engineer's representative/ agency/unit will visit to manufacturer's premises to conduct the tests, if necessary. Contractor shall provide all necessary assistance in carrying out tests and inspection at his own cost.

(b) Pre commissioning tests if needed on various equipment may be carried out jointly by the contractor and Engineer's representative.

(c) Contractor shall submit design & drawing of different circuits / system & get approval before starting of work & submit minimum 6 copies of each approved drawings including soft copies if any.

(d) The factory inspection/lab test of any of the item in the schedule/part of any job or assembly in schedule can be conducted on the desire of if required by DFCCIL.

(e) The factory inspection sample testing/lab test will be conducted as per specification/Drawing of the item and other relevant standards as per the discretion of DFCCIL.

(f) It will be responsibility of the contractor to take clarification from DFCCIL in case of any doubt in specification/ drawing before fabrication / assembly / delivery of any of the item in the schedule/part of any job or assembly in schedule.

(g) At the time of submission of drawings/sample, contractor has to submit relevant documents regarding the certification & specifications and technical catalogues reflecting all the technical parameters of the item.

(h) Only the ISI/BEE or any other relevant mark/label or any certificate produced in support, may not be enough to approve the sample, further verifications/ factory inspection/lab test may be carried out as per the discretion of DFCCIL.

(i) The tests on any of the item in the schedule/part of any job or assembly in schedule will be performed in an NAL/Govt. Lab. or manufacturer's premises as desired by DFCCIL.

(j) THE COST OF FACTORY INSPECTION / LAB TESTS / DOCUMENTATIONS WILL BE BORNE BY THE CONTRACTOR.

(k) The quality of products shall satisfy the MOST/MORTH/RUIDP specifications and as per SOR items given in BOQ.

(l) In case of any kind of confusion/conflict/dispute, the decision of DFCCIL will

be final and binding on the contractor.

7. Conditions for Associate Electrical Contractor for Electrical work.

'A' class Electrical Contractor license is required for other than OEM or their Authorized Agency for all Electrical works. The verified / attested copy of the competency certificate of each inspector authorized to execute the electrical work is required to be submitted to the Engineer before starting of the electrical work.

If the tenderer engaged associate electrical contractor, he / they is / are required to submit legally enforceable agreement dully signed with the associated electrical contractor before starting of the electrical work in the form of MOU as per Proforma-I given below. MOU must be on the non-judicial stamp paper duly notarized of Rs.100/- or as per the stamp Act of the concerned State.

The main tenderer shall be responsible for acts of commission and omission of the associate electrical contractor. The entire electrical work is to be executed by the associate electrical contractor only and no change shall be allowed in associated electrical contractor during currency of the contract. However in case of any force majeure, the Engineer may permit another eligible associate electrical contractor.

PROFORMA-I

CERTIFICATE FOR ASSOCIATE ELECTRICAL AGENCY WHICH THE MAIN CONTRACTOR PROPOSED TO ASSOCIATE

1. This is certified that we have not deviated from the technical specifications and commercial provisions provided in the tender.
2. The price bid is unconditional.
3. This is certified that we have engaged

M/S……

As Electrical contractor of approved class as detailed below……

(i) Name of contractor ……

(ii) Address ……

(iii) Class of registration ……

(iv) Experience of similar nature of work……

(Certificates to be attached)

(v) Validity of registration……

(vi) License No. with validity ……

CONSENT LETTER

I herby give my consent to work as electrical contractor till the completion of work. I will be responsible for necessary action to hand over the installation and for rectification of defects and repair during the maintenance period. I will execute the work as per Railway Specifications and additional Conditions of the Contract. I will also engage suitable Engineer/s for the work as per condition of the contract. I further certify that above particulars pertaining to me are correct.

*****

SPECIAL CONDITIONS OF CONTRACT
(TECHNICAL)

(B) TECHNICAL SPECIFICATIONS

For technical specifications, refer RUIDP-SOR 2013, MorTH Specifications and Indian Railways Unified Standard Specifications (Works and Materials), 2010 amended upto date and the specification for fabrication and erection of steel girder bridges and Locomotive Turn Table (Fabrication Specification), Serial No B1 - 2001 amended upto date as applicable.

Indian Railways Unified Standard Specifications (Works and materials), Volume I & II are available for sale at the offices of General Managers and DRMs at all Zonal Railways & Production Units.

2.1 GENERAL GUIDELINES REGARDING SPECIFICATIONS AND SPECIAL CONDITIONS FOR SUPPLY OF CEMENT FOR CONSTRUCTION WORKS

2.1.1 SUPPLY OF CEMENT:

2.1.1.1 All items taken in schedule are inclusive of cement. Supply of cement to various specifications as required will be paid under the items in Schedule if not included in items rate taken in schedule only.

2.1.1.2 The cement required for various items of work under Schedule shall be supplied by the Contractor at the site of work in accordance with the requirements and specifications.

2.1.1.3 For supply and use of cement in various works, relevant Indian Railways Unified Standard Specifications (Works and Materials), Volume I & II - 2010, IRS codes and IS Specifications will be applicable. Wherever, relevant specifications are not available, decision of the Engineer shall be final and binding on the contractor.

2.1.2 SPECIFICATIONS FOR CEMENT:

2.1.2.1 The cement used shall conform to any of the following standards.

(i) 33 Grade Ordinary Portland Cement conforming to IS: 269
(ii) 43 Grade Ordinary Portland Cement conforming to IS: 8112
(iii) 53 Grade Ordinary Portland Cement conforming to IS: 12269
(iv) Rapid Hardening Ordinary Cement conforming to IS: 8041
(v) High Strength Portland Cement conforming to IRS: T: 40
(vi) Hydrophobic Portland cement conforming to IS: 8043
(vii) Low heat Portland cement conforming to IS: 12600
(viii) Sulphate Resistance Cement conforming to IS: 12330

2.1.3 SOURCE AND PACKAGING:

2.1.3.1 Cement to be used on the works shall be procured from the main / reputed cement plants or from their authorized dealers. Decision of DFCCIL regarding reputed firms shall be final and binding on the contractor.

2.1.3.2 Cement shall be packed in jute sacking bags conforming to IS:2580-1982, double hessian bituminised (CRI type) or woven HDPE conforming to IS: 11652-1986, woven polypropylene conforming to is:11653:1986, Jute synthetic union conforming to IS:12174:1987, or any other approved composite bags, bearing the following information in legible markings:

(i) Manufacturer's name or Registered Trade Mark of manufacturer, if any.
(ii) Grade of cement

(iii) Type of cement
(iv) Weight of each bag in Kg.
(v) Date of manufacture,
(vi) IS Code No. to which the cement conforms.

2.1.3.3 All cement bags shall have company stitches intact and if any sign of tampering with company stitches is noticed, the same will be rejected without any test and no compensation shall be payable in this regard.

2.1.4 TEST CERTIFICATE REGARDING QUALITY OF CEMENT:

2.1.4.1 Necessary test certificates will have to be produced by the contractor regarding the quality of the cement conforming to the specification in addition to the manufacturer's certificates.

2.1.4.2 DFCCIL reserves the right to take samples during the course of the work and get the cement tested in reputed laboratories to ascertain the conformity to the specification. Cost of such testing shall be borne by the contractor without any extra payment.

2.1.4.3 Tests on cement shall be done as per relevant IS Codes. These tests are as follows:

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

2.1.4.4 The Contractor shall arrange to carryout above tests for every 100 Tonnes of cement and for every change in lot/batch and the same shall be submitted to the DFCCIL and take approval of the DFCCIL before using in work. No extra payment will be made for conducting such tests.

2.1.4.5 Any temporary structure required for storage of cement, has to be provided by the tenderer at his cost and shall be removed after completion of work. The DFCCIL will only provide suitable land wherever land is available and is free for use. On completion of the work or as directed by the Engineer, the shed if put up by the Contractor, should be removed by the contractor and site cleared at his cost.

2.1.5 CONSUMPTION OF CEMENT:

2.1.5.1 The cement consumption for other than design mix concrete, shall be as per North Western Railway Unified Standard Schedule of Rates (Works and Materials), Engineering Department – 2010 and RUIDP SOR items and for approved design mix concrete, the quantity of cement will be decided based on the approved design mix keeping in mind Minimum and Maximum cement content specified for various grades. Excess cement used will not be paid for and the decision of the Engineer in this connection shall be final and binding on the Contractor.

2.1.6 PAYMENT FOR CEMENT:-

Cement supplied for the work and measured under the Schedule will be paid only after its use in various works under the Schedules of the contract as per conditions and no advance payment for supply will be admissible.

2.1.7 GENERAL:-

2.1.7.1 No wastage of any of the materials supplied and used in the work by the contractor including cement is payable by DFCCIL, contractor shall make his own arrangements for storing cement for use in work.

2.1.7.2 Contractor should take proper precautionary measures to store the cement in good condition against rains, etc. Storage of cement at the work site shall be at the contractor's expense and risk. Any damage occurring to cement due to faulty storage in contractor's shed or on account of negligence on his part shall be the liability of the contractor.

2.1.7.3 53 Grade/43 Grade/33 Grade of cement should be stacked separately in countable manner.

2.1.7.4 Admixture as per IS: 9103 of approved manufacturer by the Engineer shall be permitted to be used in concrete wherever required. However, no extra payment for the admixtures used shall be payable unless otherwise specified in the Schedule.

2.1.7.5 Cement for temporary and enabling works shall be arranged by the contractor at his own cost and no extra payment will be paid on this account.

2.1.7.6 Empty Cement bags on release from the work is the property of the Contractor and shall be disposed off by the Contractor himself.

2.2 GENERAL GUIDELINES REGARDING SPECIFICATIONS AND SPECIAL CONDITIONS FOR CONCRETE WORKS

2.2.1 Specifications:-

2.2.1.1 Concrete for PCC, RCC (Including piling and RCC deck slab) shall be as per relevant RUIDP SOR 2013 specifications/ MoRT&H Specification/Indian Railway Unified Standard Specifications (Works & Materials) Volume I & II, Engineering Department, 2010 and IS Specifications. Some important guide lines are listed below. Along with these, all other relevant IRS, IRC and IS specifications with their up to date versions shall also govern. These govern all concrete works in bridges, etc., as applicable.

(i) IRS Concrete Bridge Code.
(ii) IS 456: Code of Practice for Plain and Reinforced Concrete.
(iii) Relevant Indian Railway Unified Standard Specifications (Works & Materials) Volume I & II, Engineering Department, 2010
(iv) Relevant IRS/IRC/IS Specifications/Codes

2.2.1.2 Specifications for cement, steel, binding wire, used in concrete construction shall be as per MoRTH/IRS/IRC/IS specifications. Any other specifications/ rules/guidelines issued from time to time by Railway Board/RDSO shall also govern the works.

2.2.1.3 In all matters of execution, including testing of various components, where the above codes/specifications/guidelines are not clear or explicit or at variance, the directions given by the Engineer shall be final and binding on the contractor.

2.2.2 Cement:-

2.2.2.1 The cement used in concrete construction shall be 43 Grade Ordinary Portland cement as per the design and as specified in the relevant schedules. Specifications for cement are covered under the supply schedule.

2.2.3 Reinforcement:-

2.2.3.1 All Reinforcement Steel (TMT Bars of Grade Fe 500) shall be procured as per specification mentioned in IS : 1786. Independent tests shall be conducted, wherever required, to ensure that the materials procured conform 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 Steel's guidelines.

2.2.3.2 Bars shall be cut, bent and placed correctly and accurately to the size and shape as shown in the detailed drawing. Preferably bars of full length shall be used. The reinforcement shall be tied with annealed steel binding wire. Overlapping of bars, where necessary, shall be done as directed by Engineer. Rates quoted include the cost of annealed steel binding wire of appropriate specifications. Rate also include necessary cutting and straightening is also included.

2.2.3.3 Welding of reinforcement will not be generally permitted except in special circumstances under the written approval of the Engineer.

2.2.3.4 A register shall be maintained by the Contractor with full details of reinforcement provided for accountal and payment of steel reinforcement. The contractor should sign a similar such register maintained by DFCCIL before undertaking concreting works, as a token of acceptance of the details of reinforcement steel provided in works, failing which the details as recorded by DFCCIL shall be binding on the contractor for the purpose of payment and no dispute will be entertained by DFCCIL on this account.

2.2.3.5 Contractor shall remove from site any steel materials rejected by the Engineer within a reasonable time as specified by him.

2.2.3.6 Protective Coatings:- In order to offer adequate resistance against corrosion, reinforcement bars may be provided with suitable protective coatings depending upon the environmental conditions In aggressive environments (severe, and extreme) application of cement slurry coating after removal of rust and other loose material from the surface of the reinforcement bar will generally be sufficient.

2.2.3.7 The steel consumption shall be as per the drawings issued by the DFCCIL. Quantity of steel reinforcement consumption shall be as per reinforcement actually utilized in the work based on approved bar bending schedule. Nothing extra will be paid for wastage or for cut rods, if any, which will be property of the contractor. The weight of the steel will be calculated from the nominal weight given in the producer's hand / IRUSS (W & M),2010-Volume-I books.

2.2.4 Coarse & Fine Aggregates:-

2.2.4.1 Aggregates shall comply with the requirements of IS: 383 and shall be subjected to the tests in accordance with IS: 2386. Coarse aggregates shall be from crushed stone from approved quarries. Sand shall be from good river sources of approved quarries only.

2.2.4.2 The size of the coarse aggregates shall be as per relevant IRS / IS specifications.

2.2.4.3 The size of the fine aggregates shall be as per relevant IRS / IS specifications.

2.2.4.4 Coarse aggregate shall be crushed and roughly cubical in shape. Fine aggregate shall be naturally produced. Creek/ Marine sand shall not be used in permanent works.

2.2.4.5 The grading of the sand shall conform to relevant IS specification. The sand shall be screened on a 4.75 mm size screen to eliminate over size particles. The sand, if required, shall be washed in screw type mechanical washers in potable water to remove excess silt, clay and chlorides wherever required. 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 and in such a manner as to avoid contamination.

2.2.5 Water:-

2.2.5.1 Water used for washing of aggregates and for mixing and curing concrete shall be clean, potable and free from injurious amounts of oils, acids, alkalis, salts, sugar, organic materials or other substances that may be deleterious to concrete or steel and shall conform to clause 5.4 of IS : 456.

2.2.5.2 In case of doubt regarding development of strength, the suitability of water for making concrete shall be ascertained by the compressive strength as per IS : 4031 (Part VI) and initial setting time tests IS : 4031 (Part V).

2.2.5.3 Water found satisfactory for mixing is also suitable for curing concrete. However, water used for curing should not produce any objectionable stain or unsightly deposit on the concrete surface. The presence of tannic acid or iron compounds is objectionable.

2.2.6 Admixtures:-

2.2.6.1 In bridges, use of admixtures is governed by clause 4.4 of IRS Concrete Bridge Code.

2.2.6.2 The admixtures, when permitted, shall conform to IS: 9103. Calcium chloride or admixtures containing calcium chloride shall not be used in structural concrete containing reinforcement, prestressing tendon or other embedded metal. The admixture containing Cl & SO3 ions shall not be used. Admixtures containing nitrates shall also not be used. Admixtures based on thiocyanate may promote corrosion and therefore shall be prohibited.

2.2.6.3 Concrete admixtures shall be obtained only from established manufactures with proven track record or as per approved list wherever available.

2.2.6.4 The contractor shall provide the following information concerning each admixture after obtaining the same from the manufacturer before the same is put to use:

(a) The chemical names of the main ingredients in the admixtures.

(b) The chloride iron content, if any, expressed as a percentage by mass of the total admixture.

(c) Values of dry material content, ash content and relative density of the liquid admixture which can be used for Uniformity Tests.

(d) 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.

(e) Where two or more admixtures are proposed to be used in any one mix, confirmation as to their compatibility.

(f) There would be no increase in risk of corrosion of the reinforcement or other embodiments as a result of using the admixture.

(g) Retardation achieved in initial setting time.

(h) Normal dosage and detrimental effects, if any, of under dosage and over dosage.

(i) Recommended dosages and expected results, including proof for the same wherever required. Independent test results shall be produced by the contractor on demand/as specified.

2.2.7 Storage of materials:-

2.2.7.1 Storage of materials shall be as per IS: 4082. All materials may be stored at proper places so as to prevent their deterioration or intrusion by foreign matter and to ensure their satisfactory quality and fitness for the work. The storage space must also permit easy inspection, removal and restoring of the materials. All such materials even though stored in approved godowns / places, must be subjected to acceptance test prior to their immediate use.

2.2.7.2 Aggregate shall be stored at site on a hard and dry level patch of ground. If such a surface is not available, a platform of planks or of corrugated iron sheets, or a floor of dry bricks, or a thin layer of lean concrete shall be made so as to prevent the admixture of clay, dust, vegetable and other foreign matter.

Stacks of fine and coarse aggregate shall be kept in separate stack piles, sufficiently removed from each other to prevent the materials at the edge of the piles getting intermixed. On a large job it is desirable to construct dividing walls to give each type of aggregate its own compartment. Fine aggregate shall be stacked in place where loss due to the effect of wind is minimum.

Unless specified otherwise or necessitated by site conditions, stacking of aggregate should be carried out in regular sizes.

2.2.7.3 Cement shall be transported, handled and stored at the site in such a manner as to avoid deterioration or contamination. Cement shall be stored above ground level in perfectly dry and water-tight sheds and shall be stacked not more than eight bags high. Wherever bulk storage containers are used their capacity should be sufficient to cater to the requirement at site and should be cleaned at least once every 3 months. Cement older than 3 months from the date of manufacture shall not be used. 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 in any way, during storage, shall not be used in the works and shall be removed from the site by the Contractor without charge to DFCCIL. For more details regarding stacking and storage of cement, refer clause 17.10.1, 17.10.2 and 26.1.2.7 of Indian Railway Unified Standard Specifications (Works & Materials), Volume II, - 2010.

2.2.7.4 The reinforcement bars, when delivered on the job, shall be stored above the surface of the ground level by at least by 150mm and shall ordinarily be stored in such a way as to avoid distortion and to prevent deterioration and corrosion. Every bar shall be inspected before assembling on the works and any defective, brittle, excessively rusted or burnt bars shall be removed. Cracked ends of bars shall be cut out.

2.2.8 Testing of cement & others:-

Cement and other items shall be tested as per specifications. However, the contractor shall also arrange for additional tests at his own cost as required by the Engineer as and when required. The decision of the Engineer shall be final in this regard.

2.2.9 Concreting:

2.2.9.1 The contractor shall make his own arrangements for supply of water and electricity for all his works at his own cost. He shall arrange potable quality water for use in all concrete works and samples of water shall be got tested from approved laboratory/approved by the Engineer before being used in concreting. Apart from water, fine & coarse aggregates and all other materials shall be tested from time to time by the contractor at his cost to ensure proper quality works.

2.2.9.2 Maximum / minimum size of aggregates, standards of quality of materials, minimum cover for concrete, use of admixtures / chemicals, treatment to reinforcement / finished surfaces, etc.,

shall be as per relevant Codes, IS / IRS specifications and conditions of contract as specified.

2.2.9.3 All exposed concrete surfaces shall be finished smooth by the contractor at his own cost. Shuttering materials for RCC in superstructure shall be strictly of steel only to permit vigorous vibration and to ensure no deviation of finished dimensions by more than +5/-0 mm and wooden shutters are not permitted. For other works also, proper quality of shuttering materials which will permit vibrating and will not require additional finishing shall only be used. If there is any variation in the surface, alignment or lines in the products beyond permissible rejection limits indicated in these conditions, the DFCCIL reserves the right to reject the same and the contractor shall not have any claim in this regard and cost of DFCCIL materials involved will be recovered from the contractor including penalties, if any imposed.

2.2.10 Weigh batching, vibrating, curing & testing:

2.2.10.1. All concrete shall be machine batched, machine mixed and machine vibrated, by using appropriate vibrators. Weigh batching plant, mixers, vibrators, etc., of appropriate capacity, as specified/directed by the Engineer, shall be arranged by the contractor at his cost. In this case, Weigh batching plants shall have computerized control for weighing, loading, mixing and delivery.

2.2.10.2. Batching plants, transit mixers, concrete pumps, etc., shall be installed by the contractor necessarily at site. In case of failure of any of the above, standby arrangements for ensuing continuous concreting has to be provided by the contractor at his cost. For piling works concreting shall be done continuously as per the volumes designed without break and accordingly standby arrangements shall be ensured by the contractor.

2.2.10.3. Curing & vibrating shall be arranged by the contractor at all locations/heights at his own cost and no extra payment on this account will be admissible. Curing of concrete shall be done as per relevant IS Codes / Specifications. If curing is not done by the contractor properly, DFCCIL may get it done through any other means at the Contractor's cost without any notice to him and recover from his bills the same including penalty if any at the discretion of the Engineer. The concrete shall be kept wet constantly by ponding or covered with a layer of sacking canvas etc.

2.2.10.4. Test cubes shall be cast at regular intervals and tested to ascertain the strength of concrete. The contractor shall establish a cube testing facility along with operator at the site or nearby area to facilitate prompt testing of concrete. Test cube moulds as required as per IS Codes shall be made available by the contractor at his cost.

2.2.11 Design Mix Concrete:

(a) **General:** Design Mix is mandatory for grades higher than M20. For concrete of compressive strength greater than M55, specialized literature should be consulted. Admixtures may be used while designing. Only design mix shall be used for all items of concrete. Prior to the start of construction, the contractor shall submit details of each trial mix of each grade of concrete to the Engineer for approval. When the proportions of the mix are approved, the contractor shall not vary any of the design parameters or the source of the materials without the approval of the Engineer. Wherever there is a significant change in materials used, fresh trial mix shall be arranged by the contractor as required by the Engineer. The concrete shall be designed keeping in view the minimum cement content and maximum cement content. Minimum cement content depends upon the environmental exposure conditions but maximum Cement Content shall be limited to 500kg/m.^{3}

(b) **Mix Design and Proportioning:** Recommended guidelines for Concrete Mix Design are given in IS : 10262 which may be referred to for details. As mentioned therein in order that not more than the specified proportion of test results are likely to fall below the characteristic strength, the concrete mix has to be designed for a somewhat higher target average compressive strength. In terms of clause 9.2.2 of IS : 456, the Target Mean

Strength of Concrete mix should be equal to the characteristic strength plus 1.65 times the Standard Deviation. Mix proportion shall be designed to ensure that the workability of fresh concrete is suitable for conditions of handling and placing, so that after compaction it surrounds all reinforcement and completely fill the form work. When concrete is hardened, it shall have the stipulated strength, durability and impermeability.

Determination of the proportions of by weight of cement, aggregate and water shall be based on design mix.

As a trial the manufacturer of concrete may prepare a preliminary mix according to provisions of SP : 23-1982. (Special Publications 23-1982 of Bureau of Indian Standards) Mix design shall be tried and the mix proportions checked on the basis of tests conducted at a recognized laboratory approved by the Engineer. All concrete proportions for various grades of concrete shall be designed separately and mix proportions established keeping in view the workability for various structural elements, methods of placing and compacting.

(c) **Standard deviation:** Standard deviation calculations of test results based on tests conducted on the same mix design for particular grade designation shall be done in accordance with Clause 9.2.4 of IS 456. Table 8 of IS 456 gives the standard deviation that can be assumed for design of mix in the first instance. The final standard deviation figures may be determined based on test results for the particular grade of concrete when available.

Max size of Aggregate, Target Mean Strength			
Grade of Concrete	Max size of Aggregate (mm)	Characteristic Strength (f_{ck}) at 28 days (N/mm^2)	Target Mean Strength (f_{ck}) 28 days (N/mm^2)
M20	20	20	26.60
M25	20	25	31.60
M30	20	30	38.25
M35	20	35	43.25
M40	20	40	48.25
M45	20	45	53.25

(d) **Approval of Design Mix:** The contractor shall submit details of each trial mix of each grade of concrete designed for various workability conditions to the Engineer for his comments and approval. Concrete of any particular design mix and grade shall be produced / manufactured for works only on obtaining written approval of the Engineer.

2.2.12 Requirements of Consistency:- The mix shall have the consistency which will allow proper placement and consolidation in the required position. Every attempt shall be made to obtain uniform consistency. The optimum consistency for various types of structures shall be as indicated in table below or as directed by the Engineer.

Slump Required for workability		
	Type	Slump (mm)
1	(a) Structures with exposed inclined surface requiring low slump concrete to allow proper compaction	25
	(b) Plain Cement Concrete	25
2	RCC structures with widely spaced reinforcements; e.g. solid columns, piers, abutments, footings, well steining	40-50
3	RCC structures with fair degree of congestion of reinforcement; e.g. pier and abutment caps, box culverts well curb, well cap, walls with thickness greater than 300mm	50-75

4	RCC and PSC structures with highly congested reinforcements e.g. deck slab girders, box girders, walls with thickness less than 300mm	75-125
5	Underwater concreting through tremie e.g. bottom plug, cast-in-situ piling	100-200

The minimum slump of concrete in case of bored cast in situ pile shall be 150 to 200 mm.

2.2.13 Durability:- The durability of concrete depends on its resistance to deterioration & environment in which it is placed. The resistance of concrete to weathering, chemical attack, abrasion, frost and fire depends largely upon its quality and constituent materials. Susceptibility to corrosion of the steel is governed by the cover provided and the permeability of concrete. The cube crushing strength alone is not a reliable guide to the quality and durability of concrete; it must also have adequate cement content and a low water-cement ratio. The general environment to which the concrete will be exposed during its working life is classified into three levels of severity that is moderate, severe, and extreme as described below:

Environment	Exposure condition
MODERATE	Concrete surface protected against weather or aggressive conditions. Concrete surface sheltered from severe rain or freezing whilst wet. Concrete exposed to condensation. Concrete structure continuously under water. Concrete in contact with non aggressive soil /ground water.
SEVERE	Concrete surface exposed to severe rain, alternate wetting & drying or occasional freezing or severe condensation. Concrete exposed to aggressive subsoil / ground water or coastal environment.
EXTREME	Concrete surface exposed to sea water spray, corrosive fumes or severe freezing conditions whilst wet. Concrete structure surfaces exposed to abrasive action, surfaces of members in tidal zone. All other exposure conditions which are adverse to exposure conditions covered above.

Maximum water-cement ratio, grade of concrete and cementitious material content for various environment conditions for achieving durability are indicated below for guidance:

2.2.13.1 Maximum Water Cement Ratio:-

The limits for maximum water cement ratio for design mix shall be based on environmental conditions as defined in durability clause. The limits for maximum water cement ratio for different environmental conditions shall be as given in Table below:

Environment	Maximum Water-Cement Ratio		
	Plain Concrete (PCC)	Reinforced Concrete (RCC)	Pre stressed Concrete (PSC)
Moderate	0.50	0.45	0.40
Severe	0.45	0.40	0.40
Extreme	0.40	0.35	0.35

2.2.13.2 Grade of Concrete:- From durability consideration, depending upon the environment to which the structure is likely to be exposed during its service life, minimum grade of concrete shall be as given in table below:

Minimum Grade of Concrete

(A) For Bridges in Pre stressed Concrete and important Bridges.

Structural member	Moderate exposure	Severe Exposure	Extreme exposure
PCC member	M-25	M-30	M-35
RCC member	M-30	M-35	M-40

PSC member	M-35	M-40	M-45

(B) For Bridges other than mentioned above and sub-structure

Structural member	Moderate exposure	Severe Exposure	Extreme exposure
PCC Member	M-15	M-20	M-25
RCC member	M-25	M-25	M-30

2.2.13.3 Cementitious Material Content*:-* Maximum Cementitious Material Content shall be limited to 540kg/m^3. Depending upon the environment to which the structure is likely to be exposed during its service life, minimum Cementitious Material Content in concrete shall be as given in table below:

Minimum Cementitious Material Content				
Environment	**Minimum Cementitious Material Content in Kg/cum**			
	Plain Concrete		Reinforced Concrete	
	(PCC)		(RCC)	
	Grade	Content	Grade	Content
Moderate	M25	300	M30	360
Severe	M30	360	M35	380
Extreme	M35	380	M40	440

2.2.13.4 Clear cover is the least distance from outer most surface of steel or binding wire or its end to the face of concrete. It is also an dimension used in design and indicated on the drawings. From durability consideration, minimum clear cover shall be as under.

Minimum Covers			
Type of structure	Extreme Environment	Severe Environment	Moderate Environment
Slab	50	35	25
Beam/Girder	60	50	35
Column	75	75	50
Piles	75	75	50

2.2.14 Permeability of concrete: Permeability requirements are as specified in IRS Concrete Bridge Code. Permeability test shall be mandatory for all RCC bridges under severe and extreme environment. Under moderate environment, permeability test shall be mandatory for all major bridges and for other bridges and structures.

2.2.15 Mixing of concrete:

2.2.15.1 Concrete shall be mixed either in a mini mobile batching plant or in a batching and mixing plant as per the specifications. Hand mixing shall not be permitted. The mixer or the plant shall be at an approved location 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.

2.2.15.2 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.

2.2.15.3 Mixers which have been out of use for more than 30 minutes shall be thoroughly cleaned before putting in a new batch. The first batch of concrete from the mixer shall contain only two thirds of the normal quantity of coarse aggregate. Mixing plant shall be thoroughly cleaned before changing from one type of mix to another.

2.2.16 Transporting, Placing and Compaction of Concrete:

2.2.16.1 The method of transporting and placing concrete shall be approved by the Engineer. Concrete shall be transported and placed as near as practicable to its final position, so that no contamination, segregation or loss of its constituent materials takes place. Concrete shall not be freely dropped into place from a height exceeding 1.5 metres.

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

2.2.16.3 All formwork and reinforcement contained in it shall be cleaned and made free from standing water, dust, immediately before placing of concrete.

2.2.16.4 No concrete shall be placed in any part of the structure until approval of the Engineer has been obtained.

2.2.16.5 If concreting is not started within 24 hours of the approval being given, it shall have to be obtained again from the Engineer. Concreting then shall proceed continuously over the area between the construction joints. Fresh concrete shall not be placed against concrete which has been in position for more than 30 minutes unless a proper construction joint is formed.

2.2.16.6 Except where otherwise agreed to by the Engineer, concrete shall be deposited in horizontal layers to a compacted depth of not more than 450 mm when internal vibrators are used and not exceeding 300 mm in all other cases.

2.2.17 Concrete when deposited shall have a temperature of not less than 5^0 C and not more than 40°C. It shall be compacted in its final position within 30 minutes of its discharge from the mixer, unless carried in properly designed agitators, operating continuously. It may be necessary to add retarding admixtures to concrete if trials shows that the period indicated above are unacceptable. In all such matters, Engineer's decision shall be final.

2.2.18 Concrete shall be thoroughly compacted by vibration or other means approved by Engineer, during placing and worked around the reinforcement, embedded fixtures and into corners of the formwork to produce a dense homogenous void-free mass having the required surface finish. When vibrators are used, vibration shall be done continuously during the placing of each batch of concrete until the expulsion of air has practically ceased and in a manner that does not promote segregation. Over vibration shall be avoided to minimize the risk of forming a weak surface layer. When external vibrators are used, the design of formwork and disposition of vibrator shall be such as to ensure efficient compaction and to avoid surface blemishes. Vibrators shall not be applied through reinforcement and where vibrators of immersion type are used, contact with reinforcement and all inserts like ducts etc., shall be avoided. The internal vibrators shall be inserted in an orderly manner and the distance between insertions should be about one and half times the radius of the area visibly affected by vibration. Additional vibrators in serviceable condition shall be kept at site so that they can be used in the event of breakdowns.

2.2.19 Mechanical vibrators used shall be of appropriate specifications, type and capacity and as directed by the Engineer.

2.2.20 Equipment and machinery for concreting:

2.2.20.1 For concrete works, the following equipments in numbers indicated are considered necessary

for efficient and speedier concreting at each site. However, the actual numbers may be arranged as required by the Engineer, taking into account the site conditions.

Indicative List of Equipment and Machinery		
1.	Concrete Batching plant (10 to 20 cum/hr capacity)	1 No.
2.	Transit Mixers (4 to 7 cum capacity)	2 Nos.
3.	Concrete Vibrators (2 HP capacity)	4 Nos.
4.	Vibrators of Needles (60mm & 40mm)	4 Nos.
5.	Screed vibrator (for ROBs)	2 Nos.
6.	Form vibrator (500 watts capacity)	2 Nos.
7.	Generator (35 KV capacity)	1 No.
8.	Welding set (3 to 5 KV capacity)	1 No.
9.	Reinforcement Steel Cutting Machine	2 No.
10.	Reinforcement Steel Bending Machine	2 No.
11.	Concrete Pumps (10 to 20 HP capacity with 40m pipe length)	1 No.
12.	Hydra 12.0 T capacity crane	1 No.
13.	Concrete Funnel Bucket	1 No.
14.	Air compressor (100 to 150 cum capacity)	1 No.
15.	Concrete Dumpers	2 Nos.
16.	Any other including power lifts etc., as required to suit site	Adequate No.

2.2.20.2 All the machinery are required to be arranged by the contractor at his own cost and the agreement rates for concreting include the same. No extra payment is admissible for any machinery arranged by the contractor.

2.2.21 TRANSPORTATION OF CONCRETE & PUMPING OF CONCRETE

2.2.21.1 General

Fresh concrete can be transported to the placement area by a variety of methods. Common among them are:

- Mixer trucks
- Stationary truck bodies with or without agitators.
- Buckets hauled by trucks.
- Conveyor belts.
- Hose or pipe line by pumping.

Each type of transportation has specific advantages and limitations depending on the condition of use, mix, accessibility and location of placing.

2.2.21.2 Transportation by Mixer Trucks

2.2.21.2.1 These are essentially revolving drums mounted on truck chassis. Truck mixers used in the job shall be labelled permanently to indicate the manufacturers specifications for mixing like:-

- Capacity of drum.
- Total number of drum revolutions for complete mixing.
- Mixing speed
- Maximum time limit before completion of discharge and after cement has entered the drum.
- Reduction in time period of discharge due to warm weather or other variables.

All above information shall only form guidelines for the manufacturer/producer of concrete.

2.2.21.2.2 Fulfilment of the stipulated number of revolutions or elapsed time shall not be the acceptable criterion. As long as the mixing water limit is not exceeded and the concrete has satisfactory plastic physical properties and is of satisfactory consistency and homogeneity for satisfactory placement and consolidation and is without initial set, the concrete shall be acceptable.

2.2.21.2.3 When the concrete is totally mixed in transporting trucks volume of concrete being transported shall not exceed 63% of the rated capacity of the drum. In case the concrete is totally mixed in the central batching plant, the transporting truck may be loaded up to 80% of the rated capacity of the drum. In this case the drum shall be rotated at charging speed during loading and reduced to agitating speed after loading is complete.

2.2.21.2.4 When transporting concrete by truck mixers, delivery time shall be restricted to 90 minutes or initial setting time whichever is less from the time cement has entered the mixer to completion of discharge.

2.2.21.3 Transporting by Agitating / Non-agitating Trucks.

2.2.21.3.1 Transporting ready mix concrete by this method shall consist of truck chasis mounted with open top bodies. The metal body shall be smooth and streamlined for easy discharge. Discharge may be from the rear when the body is mechanically titled. Body of the truck shall have a provision of discharge gate. Mechanical vibrators shall be installed at the discharge gate for control of discharge flow.

2.2.21.3.2 Agitators, if mounted, also aid in the discharging of concrete from the truck in addition to keeping the concrete alive.

2.2.21.3.3 Water shall not be added to concrete in transport through this system.

2.2.21.3.4 Bodies of trucks shall be provided with protective covers during period of inclement weather.

2.2.21.3.5 Delivery period, when adopting this system of transporting concrete shall be restricted to 30 minutes from the moment all ingredients including cement and water enter in mixer to completion of discharge.

2.2.21.4 Transporting by Buckets

This method of transportation is very common for transportation of centrally mixed concrete. Buckets of suitable capacities may be filled with concrete which is totally mixed in central plant and hauled to the job site. Buckets then may be conveyed to the actual point of placement either with the help of crane/hoist or they may be carted

.

As in the case of open truck transportation, extra water shall not be added to concrete transported in buckets. Concrete shall be protected from inclement weather by necessary covering arrangements. Also, maximum delivery period for this system of transportation from the time cement is introduced into the mixer to completion of discharge shall not exceed 30 minutes.

2.2.21.5 Cleaning

Before loading concrete in either truck mixer, open bodied trucks or buckets, the containers shall be thoroughly cleaned, washed and dried, so that there is no water or moisture in the

container which may affect the designed water content of the concrete.

2.2.21.6 Other Methods of Transportation

Transportation of concrete either by belt conveyors or by pumping is envisaged in some works.

If, the producer/manufacturer/purchaser/contractor of ready mix concrete desires to use such methods of transportation, they may do so provided their scheme and complete specifications are submitted to the Engineer for his record and approval.

2.2.21.7 Objective

Method of transportation used shall ensure:-

Efficient delivery of concrete
No significant alteration of properties with regard to water cement ratio, slump, air content and homogeneity.
All variables in transportation, considering type and accessibility of placement locations, distance, time interval etc., shall be carefully studied before arriving at the method used.

2.2.21.8 Pumpable Concrete (Extracted from Para 8.9 of Concrete Bridge Code, 1997)

General- Pumpable concrete is the concrete which is conveyed by pressure through either rigid pipe or flexible hose and discharged directly into the desired area. It is especially used where space for construction equipment is very limited.

Pumping Rate and Range – Depending on the equipment, pumping rate should be 10 to 70 cum. per hour. Effective pumping range is upto 300m horizontally and 90m vertically.

(i) Proportioning Pumpable Concrete

a) Basic Consideration - More emphasis on quality control is essential to the proportioning and use of a dependable pump mix. Concrete mixes for pumping must be plastic. Particular attention must be given to the mortar and to the amounts and sizes of coarse aggregates.

b) The maximum size of angular coarse aggregate is limited to one-third of smallest inside diameter of the hose or pipe. Provisions should be made for elimination of oversized particles in the concrete by finish screening or by careful selection of aggregates.

(ii) Pumping Concrete

a) Proper planning of concrete supply, pump locations, line layout, placing sequences and the entire pumping operation will result in saving of cost and time. The pump should be placed as near the placing area as practicable and the entire surrounding area must have adequate bearing strength. Lines from the pump to the placing area should be laid out with a minimum of bends. The pipe line shall be rigidly supported.

b) While pumping downward 15m or more, it is desirable to provide an air release valve at the middle of the top bend to prevent vacuum or air build up. When pumping upward, it is desirable to have a valve near the pump to prevent reverse flow.

2.2.22 Construction Joints:-

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

2.2.22.2 Construction joints should be positioned to minimize the effect of the discontinuity on the durability, structural integrity and appearance of the structure. Joints should be located away from regions of maximum stress caused by loading particularly where shear and bond stresses are high.

2.2.22.3 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 course aggregate particles. Concrete may be brushed with a stiff brush soon after casting while the concrete is still fresh and while it has only slightly stiffened. If the concrete has partially hardened, it may be treated by wire brushing or with a high pressure water jet, followed by drying with an air jet, immediately before the new concrete is placed. Fully hardened concrete should be treated with mechanical hand tools or grit blasting, taking care not to split or crack aggregate particles.

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

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

2.2.22.6 When the formwork is fixed for the next lift, it should be inspected to ensure that no leakage can occur from the fresh concrete. It is a good practice to fix a 6 mm thick sponge which seals the gap completely. The practice of first placing a layer of mortar or grout is not recommended. The old surface should be soaked with water without leaving puddles, immediately before starting 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.

2.2.23 **Finishing of concrete:** The finished surface of concrete after removal of formwork shall be such that no touching up is required. All fins/holes caused by form joints, supports, rods etc., shall be ground/filled up effectively using appropriate machinery shutters, formwork etc., used in construction shall be as specified in the conditions and the labour used shall be skilled to suit the quality requirements of the work. Any surface, finished poorly in the opinion of the Engineer shall require repair/remedial measures at the cost of the contractor and the Engineer's decision in this regard shall be final. Any structure, which has deficiencies in finishing including product parameters beyond the rejection limits, as specified in these

conditions, are liable to be rejected and the decision of the Engineer shall be final in this regard.

2.2.24 **Coatings for concrete:** Normally finished concrete structures do not require any surface protective coatings in non aggressive environment (moderate) for all structures. For aggressive environment (severe and extreme conditions), Epoxy phenolic IPN coating or CECRI Integrated four coat system can be used in superstructure of bridges and coal tar epoxy coating for sub structure of bridges (in affected part only).

2.2.25 Shuttering, Formwork & False work:-

2.2.25.1 Shuttering, Formwork & False work shall be designed to meet the requirements of the permanent structure, taking into account the actual conditions of materials, environment and site conditions. Careful attention shall be paid to the detailing of connections and functions. All the materials used for shuttering, formwork & false work shall conform to the specified quality consistent with the intended purpose and actual site condition as applicable. All shuttering, form work, false work, etc., shall be got approved by the Engineer before it is put into use.

2.2.25.2 Forms shall not be struck until the concrete has reached strength at least twice the stress to which the concrete may be subjected at the time of removal of formwork or as approved by the Engineer. In normal circumstances and where Ordinary Portland Cement is used, forms may generally be removed after the expiry of the following periods:-

Stripping Time	
a) Walls, columns and vertical faces of all structural members	24 to 48 hours as may be decided by the Engineer
b) Slabs (props left under)	3 days
c) Beam soffits (props left under)	7 days
d) Removal of props under slabs 1) Spanning up to 4.5 m 2) Spanning over 4.5 m	 7 days 14 days
e) Removal of props under beams 1) Spanning up to 6 m 2) Spanning over 6 m	 14 days 21 days

Where the shape of the element is such that the formwork has re-entrant angles, the formwork shall be removed as soon as possible after the concrete has set, to avoid shrinkage crack occurring due to the restraint imposed.

2.2.26 Defective Concrete and Measurement of concrete:

2.2.26.1 Should any concrete be found honeycombed or in any way defective which may be, at the discretion of the Engineer suspected to affect the performance of the structure, shall be rejected outright. Contractor shall have no claim in this regard and the decision of the Engineer shall be final. The member, structurally independent, in which the concrete is found to be defective, shall be replaced by the contractor at his cost fully. The damages arising on account of such defective concreting shall also be recoverable from the dues of the contractor, including penalties if any. DFCCIL reserves the right to get the member replaced by any means at the cost of the contractor at any cost if the contractor delays reproduction.

2.2.26.2 However, some surface defects, not affecting the structural properties shall, on the instruction of the Engineer, be repaired as per the approved procedures. The complete cost of such repairs shall be borne by the contractor and no compensation shall be payable. Records of such repairs done shall be maintained by the contractor.

2.2.26.3 The tolerances for finished concrete bridge structures shall be governed by IRS Concrete Bridge Code and shall be followed; deviations beyond the permissible limits shown are liable to be rejected. These tolerances apply to other structures also appropriately.

Tolerances for Finished Concrete Bridge Structure		
Sr. No	Description of defects in any part or full member or the structure at the decision of the Engineer.	Permissible limits (unless otherwise specified in designs/drawings)
1	Shift from alignment	1) ± 25 mm in member.
2	Deviation from plumb in piers or variation from specified batter.	1 in 250 subjected to a maximum value of 0.5 times the least lateral dimension of pier.
3	Deviation from plumb in abutments or variation from specified batter.	1 in 125
4	Cross sectional dimensions of piers, abutments and girders	+20mm/-5mm
5	Thickness of deck slab of bridges	+ 6 mm / - 3 mm
6	Size and location of openings	± 12 mm
7	Plan dimensions of footings (formed excavation)	+ 50 mm / - 25 mm
8	Plan dimensions of footings (unformed excavation)	+ 75 mm / - 00 mm
9	Thickness of footings	– 5%, + No limit
10	Footing eccentricity	0.02 times the width of the footing in the direction of deviation, but not more than 50 mm
11	Reduced level of top of footing / pier / bed block	± 5 mm
12	Centre to centre distance of pier and abutments at pier top	± 30 mm
13	Centre to centre distance of bearings along span	± 5 mm
14	Centre to centre distance of pier bearings across span	± 5 mm

2.2.27 Sampling and Strength Testing of Concrete:

2.2.27.1 General : Samples from fresh concrete shall be taken as per IS: 1199 (method of sampling and analysis of concrete). Concrete for making 3 test cubes shall be taken from a batch of concrete at point of delivery into construction according to procedure laid down in IS: 1199 and 150 mm cubes shall be made, cured and tested at the age of 28 days for compressive strength in accordance with IS:516. The 28 days test strength result for each cube shall form an item of sample.

Concrete shall conform to the surface finish and tolerance as prescribed in Unified specifications. Random sampling and lot by lot of acceptance / inspection shall be made for the 28 days cube strength of concrete.

Concrete under acceptance shall be notionally divided into lots for the purpose of sampling, before commencement of work. The delimitation of lots shall be determined by the following:

(i) No individual lot shall be more than 30 cum in volume.
(ii) At least one cube forming an item of the sample representing the lot shall be taken from concrete of the same grade and mix proportions cast on any day.
(iii) Different grades of mixes of concrete shall be divided into separate lots.
(iv) Concrete of a lot shall be used in the same identifiable component of the bridge.

2.2.27.2 Sampling .

2.2.27.2.1 Frequency of Sampling

Sampling procedure: A random sampling procedure shall be adopted to ensure that each concrete batches forming the lot under acceptance / inspection shall have a reasonable chance of being tested that is, sampling should be spread over the entire period of concreting and cover all mixing units.

Frequency: The minimum frequency of sampling of concrete of each grade shall be in accordance with table below. At least one sample shall be taken from each shift of work.

Minimum Frequency of Sample	
Quantity of concrete in work,(M^3)	No. of samples
1-5	1
6-15	2
16-30	3
31-50	4
51 and above	4 plus one additional sample for each additional 50 M^3 or part thereof

2.2.27.2.2 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.

2.2.28 Test Results of Sample: The test results of the sample shall be the average of the strength of 3 specimens. The individual variation should not be more than $\pm$ 15 percent of average. If more, test results of the sample are invalid.

2.2.29 Acceptance Criteria of Concrete: Acceptance criteria for RUIDP SOR items shall be as per MOST/MoRT&H specifications and NS items based on USSR 2010 of NWR shall be as per acceptance of concrete as per Clause No 16 of Annexure 4.2 of Indian Railway Unified Standard Specifications (Works & Materials), Volume I, 2010. Also refer criteria of concrete vide clause no 20.3.11.5 of Indian Railway Unified specifications. The 28 days compressive strength shall be the criterion for acceptance or rejection of the concrete.
The followings shall also be strictly followed.

(i) Whenever a mix is redesigned due to a change in the quality of aggregate or cement or for any other reason, it shall be considered a new mix and initially subject to the acceptability criteria above.

(ii) If the concrete produced at site does not satisfy the above strength requirements, the Engineer shall reserve the right to require the contractor to improve the methods of batching, the quality of the ingredients and redesign the mix with increased cement content, if necessary. The Contractor shall not be entitled to claim any extra cost for the extra cement used for the modifications stipulated by the Engineer for fulfilling the strength requirement specified.

(iii) It is the complete responsibility of the contractor to redesign the concrete mixes by approved standard methods and to produce the reinforced concrete conforming to the specification and the strength requirements approved by the Engineer. It is expected that the Contractor will have competent staff to carry out this work.

2.2.30 Setting of field laboratory by the Contractor:

2.2.30.1 For all works, the Contractor shall set up a field laboratory of his own for testing of cement/water/concrete at work site, which should be open for use and inspection by the DFCCIL officials at any time and carryout the tests with his own equipments, gauges, machinery, consumables and operators, at his own cost. The laboratory shall be equipped with necessary equipment to carry out various tests such as property tests, sieve analysis, setting time of cement, compression tests on cubes, slump test, workability test etc., on

aggregate, cement, water and concrete required for ensuring the required quality. For steel however, test reports of reputed institutes/laboratories are acceptable.

2.2.30.2 The cost of setting up the laboratory, equipping the same, maintaining conducting all tests on materials and cubes shall be borne by the contractor, within his quoted rates for works and no extra payment is eligible for the same.

2.2.30.3 All gauges, machines, equipments and other measuring and testing equipments of the laboratory shall be got checked / calibrated regularly and the necessary certificates furnished to the Engineer by the Contractor.

2.2.30.4 All the equipments, machinery etc., shall be kept in good working condition. Contractor shall also maintain the required qualified / experienced staff at the laboratory.

2.2.30.5 The following is the minimum laboratory facilities at the site which are to be provided and operated by the contractor at his cost.

(i) Testing of fine and coarse aggregates as per IS:383 and IS:2386.

(ii) Testing of cement concrete as per IS: 8142 and IS:516.

(iii) Testing of water as per IS: 456 and IS: 3025.

(iv) Certain non-routine testing such as (a) Testing of admixtures, (b) Chemical testing of fine and coarse aggregates (c) Permeability of concrete (permeability test on concrete shall be got done when the mix design is approved / changed of the reputed laboratories as approved by Engineer). The frequency and need for these tests shall be decided by the Engineer, based on stipulations contained in conditions of contract or on the basis of accepted Engineering practice (e.g. whenever source of admixture is changed, tests stipulated in the codes will have to be carried out afresh, etc).

2.2.30.6 As frequently as the Engineer may require, testing shall be carried out in the field for:

(a) Moisture content and absorption and density of sand and aggregate.
(b) Silt content of sand.
(c) Grading of sand and aggregates.
(d) Slump test of concrete.
(e) Concrete cube test.
(f) Permeability test for concrete
(g) Density of Plasticizer.
(h) PH Value of water

2.2.31 Ladders for inspections: Steel ladders are to be provided at the abutments and all pier locations on both sides of girder bridges to enable inspecting officials to get down from the track level to the top of the piers / abutments.

2.2.32 Expansion joints: Expansion joints – strip seal elastomeric type expansion joint shall be for 80mm expansion gap in RCC deck slab as per drawings.

2.2.33 Seating of foundations:

As far as possible, open foundations should be located on the firm ground having stable strata. The strata shall be well compacted before levelling course and foundations are laid on the levelling.

In case foundations resting on rock, no foundation shall be laid on sloping rock. The rock shall be made level for the width of the foundation before levelling course is laid. Before seating on the rock, capacity of the rock shall be assessed properly and safe bearing capacity assessed in the designs is to be confirmed.

The seating of the rock shall be achieved by cutting into the rock atleast by 0.50m depth to ensure removal of all weak layers and for obtaining adequate anchorage in case of open foundations. After level surface is made on the rock, a rich mix layer of 150mm thick shall be laid to even the bedding surface.

If the rock is encountered while piling, pile shall be anchored into rock to the depth as per codal provision.

2.2.34 **Drainage outlets**: 50mm galvanized GI pipes in case of deck slab in bridges will serve as drainage spouts.

2.3 GENERAL GUIDELINES AND SPECIFICATIONS FOR BORED CAST-IN-SITU RCC PILE FOUNDATIONS:

2.3.1 The piles shall be bored cast-in-situ. The scope of the work included in relevant schedules is for the provision and testing of bored cast-in-situ RCC pile foundations with the pile cap. Items for piling in soil has been provided in schedule. If any boulder in the form of obstruction comes in the boring, no extra payment for piling in boulders shall be made. Bore log provided by the DFCCIL for construction are only indicative in this regard and it is the contractors' responsibility to make correct assessment of ground conditions before starting the piling operation. Rate of Item of piling includes cost of all materials and labour involved in all operations as specified.

2.3.2 CONCRETING IN BORED CAST-IN-SITU PILES

(i) Bored Cast-in-situ concrete piles shall be installed by making a bore into the ground by removal of material. Cast-in-situ concrete piles may be cast in metal liners which may remain permanently in place. The metal casing shall be of sufficient thickness and strength to hold its original form and show no harmful distortion after it and adjacent casings have been driven and the driving core, if any, has been withdrawn.

(ii) Concreting and reinforcement work will be done in accordance with relevant clauses in Chapters 3 and 4 of Indian Railway Unified Standard Specifications (Works & Materials) Volume - I, 2010 or RUIDP SOR 2013 supplemented by these specifications.

(iii) Any liner or bore-hole which is improperly located or shows partial collapse that would affect the load carrying capacity of the pile, shall be rejected or repaired as directed by the Engineer at the cost of the Contractor.

(v) Bored cast-in-situ piles in soils which are stable, may often be installed with only a small casing length at the top. A minimum of 2.0m length of top of bore shall invariably be provided with casing to prevent any loose soil falling into the bore. In cases in which the side soil lower down can fall into the hole, it is necessary to stabilise the side of the bore hole with drilling mud, or a suitable steel casing. The casing may be left in position permanently specially in cases where the aggressive action of the ground water is to be avoided, or in the cases of piles built in water or in cases where significant length of piles could be exposed due to scour.

(vi) For bored cast-in-situ piles, casing / liner shall be driven open ended with a pile driving

hammer capable of achieving penetration of the liner to the length as approved by the Engineer. Materials inside the casing shall be removed progressively by air lift, grab or percussion equipment or other approved means. Unless otherwise approved by the Engineer, the diameter of the bore-holes shall be not more than the inside diameter of the liner.

(vii) Where bored cast-in-situ piles are used in soils liable to flow, the bottom of the casing shall be kept enough in advance of the boring tool to prevent the entry of soil into the casing, thus preventing the formation of cavities and settlements in the adjoining ground. The water level in the casing should generally be maintained at the natural ground water level for the same reasons. The joints of the casing shall be made as tight as possible to minimise inflow of water or leakage of slurry during concreting. Where mud flow conditions exist, the casing of cast-in-situ piles shall not be allowed to be withdrawn. Prior to the lowering of the reinforcement cage into the pile shaft, the shaft shall be cleaned of all loose materials. Cover to reinforcing steel shall be maintained by suitable spacers, tied in advance to the reinforcement.

(viii) Wherever practicable, concrete should be placed in a clean dry hole. Where concrete is placed in dry condition and there is casing present, the top 3m of the pile shall be compacted using internal vibrators.

(ix) Before concreting under water, the bottom of the hole shall be cleaned of drilling mud and all soft or loose material very carefully. In case a hole is bored with use of drilling mud, concreting should not be taken up when the specific gravity of bottom slurry is more than 1.2. The drilling mud should be maintained at 1.5m above the ground water level.

(x) Where the casing is withdrawn from cohesive soils for the formation of cast-in-situ pile, the concreting should be done with necessary precautions to minimise the softening of the soil by excess water. Care shall be taken during concreting to prevent as far as possible the segregation of the ingredients. The displacement or distortion of reinforcement during concreting and also while extracting the tube shall be avoided.

(xi) The concrete shall be properly graded, shall be self-compacting and shall not get mixed with soil, excess water, or other extraneous matter. Special care shall be taken in silty, clays and other soils with the tendency to squeeze into the newly deposited concrete and cause necking. Sufficient head of green concrete shall be maintained to prevent inflow of soil or water into the concrete.

(xii) The placing of concrete shall be a continuous process from the toe level to the top of the pile. To prevent segregation, a tube or tremie pipe as appropriate shall be used to place concrete in all piles.

(xiii) To ensure compaction by hydraulic static heads, rate of placing concrete in the pile shaft shall not be less than 6m (length of pile) per hour. Under water concreting should be done with tremie.

(xiv) The maximum water cement ratio shall be 0.45 for cast in situ piles.

(xv) The cement content shall not be less than 400 kg/cum of concrete.

(xvi) The minimum slump of concrete for bored cast-in-situ piles shall 150mm to 200mm, but the slump should not exceed 200mm in any case.

(xvii) **Concreting under water :-**General requirements and precautions for concreting under water shall be as given in concreting chapter 3 of IR Unified Standard Specifications (Work & Materials), Volume - I, 2010 supplemented by following instructions:

(a) The concreting of a pile must be completed in one continuous operation. Also, for bored holes, the finishing of the bore, cleaning of the bore, lowering of reinforcement cage and concreting of pile for full height must be accomplished in one continuous operation without any stoppage.

(b) The concrete should be coherent, rich in cement with high slump and restricted water cement ratio.

(c) The tremie pipe will have to be large enough with due regard to the size of aggregate. For 20mm aggregate the tremie pipe should be of diameter not less than 150mm and for larger aggregate, larger diameter tremie pipes may be necessary.

(d) The first charge of concrete should be placed with a sliding plug pushed down the tube ahead of it to prevent mixing of water and concrete.

(e) The tremie pipe should always penetrate well into the concrete with an adequate margin of safety against accidental withdrawal if the pipe is surged to discharge the concrete.

(f) The pile should be concreted wholly by tremie and the method of deposition should not be changed part way up the pile to prevent the laitance from being entrapped within the pile.

(g) All tremie tubes should be scrupulously cleaned after use.

(h) In special circumstances, the Engineer may permit use of any other proved method of concrete placement designed for under water concrete. In such cases, a detailed method statement should be prepared and got approved by the Engineer.

(xviii) The diameter of the finished pile shall not be less than that specified and a continuous record shall be kept by the Engineer as to the volume of concrete placed in relation to the pile length cast.

2.3.3 The schedule of quantities in this contract is based on bored cast-in-situ pile of required capacity and for approximate anticipated depth as indicated in the drawings. Depth of piles is likely to vary and contractor shall have no claim whatsoever irrespective of the depth of piles provided at any and all locations. Installation of piles shall be carried out as per layout drawings, installation criteria and the instructions of the Engineer. The method of installing the piles, including details of the equipment shall be submitted by the contractor and got approved by the Engineer before start of work.

2.3.4 Piling work shall conform to specifications IS : 2911 Parts 1 & 4 unless otherwise specified.

2.3.5 Workmanship of bored cast-in-situ piles includes the provisions for control of piling installation, use of drilling mud, cleaning of borehole, tremie concreting, defective pile, recording of data shall be as per Clause 8 of IS: 2911(Part 1/Section 2).

2.3.6 The specifications for safe load, test load, total displacement, net displacement etc., shall also conform to provisions as per IS: 2911 (Part 4).

2.3.7 The contractor shall set out piles with precision survey duly erecting permanent bench marks and other references. He shall be responsible for correct maintenance of position and plumb thereafter and these shall be checked periodically. The control of alignment and inclination of piles shall be as per IS : 2911(Part 1/Section 2). Tolerances as specified in the above code or as specified shall govern.

2.3.8 Level marks shall be put accurately on each pile immediately after it is installed. If any pile shows subsequently a tendency to heave up due to installation of other piles later or due to any other reason, corrective course of action shall be suggested and taken by the contractor after approval by the Engineer at the cost of contractor.

2.3.9 Durability provisions such as clear cover to reinforcements, minimum and maximum cement content, maximum water-cement ratio and permeability of concrete shall be adhered to as mentioned earlier and below. The exposed area of pile above the ground level. In case of harmful chemical constituents found in subsoil and in water such as chlorides and sulphides, special provisions as per relevant codes of practice shall be followed for protection against reinforcement corrosion and disintegration of concrete and for such protection against corrosion and bio-fouling, the pile concrete/liner below cut-off level shall be painted with appropriate material, if ordered by Engineer for which payment will be made separately as specified in relevant schedules.

2.3.10 Sulphate resistant cement may be used on need based consideration after conducting the soil investigation and water investigation. It shall not be used under such conditions where concrete is exposed to risk of excessive chlorides and sulphate attack both. Requirements of concrete exposed to sulphate attack shall be as per Table 4 of IS : 456. Where chloride is encountered along with sulphate in soil or ground water, Ordinary Portland Cement with C3A contents from 5 to 8 % shall be desirable to be used in concrete instead of sulphate resisting cement. For pH around 4, steel and concrete both have to be specially quoted. If sulphate resistant cement is used which has faster setting properties, curing shall start within five hours of concreting.

2.3.11 Method of boring, namely, Bailer and Chisel, Rotary, Direct Mud Circulation (DMC), Reverse Mud Circulation (RMC), Percussion, etc., shall be chosen as appropriate to strata and site conditions. The agreement rates for piling are inclusive of any type of boring/any type of supporting arrangements adopted by the contractor and no extra payments are admissible for any type of scheme adopted by the contractor.

2.3.12 Borehole stability shall be maintained with casing and/or mud circulation..

2.3.13 Use of drilling mud (Bentonite) in stabilizing the sides of bore holes is mandatory in soils of inadequate capacity. The decision on the need of use of Bentonite will be taken by the Engineer which is final. The bentonite slurry shall be maintained at 1.5m above the ground water level during boring operations and till the pile is concreted. The bentonite slurry shall be under constant circulation till start of concreting and shall meet the requirements stipulated in the subsequent clauses. Agreemental rates for piling includes the cost of Bentonite and related operations and the contractor cannot claim any extra cost on this account.

2.3.14 Providing MS Liners: This item is for supply and fixing contractor's permanent MS liners for the pile from the top of working platform upto the required depth as may be decided by the Engineer. The contractor shall fabricate the MS liners from his own MS sheets to suit the diameter of the pile as directed. Required length of MS liners will be made up by welding each unit outside by the contractor with his own equipments and plants. It shall be clearly noted that the MS sheets required for manufacture of the liners shall not be supplied by the DFCCIL. The welding shall be of proper quality so as to withstand the hammering forces. The payable depth shall however, be measured only from the cut off level though the liner might have been provided right from the level of working platform on practical considerations, since the length above the cut off level has to be necessarily removed by gas cutting for facilitating peeling of the top portion of the pile and for interlacing its reinforcement bars into the capping slab. Therefore, the rate quoted shall cater for the element of cutting and removing the surplus length of MS liners. There is, however, no objection for the surplus pieces, if usable, are

united and are re-welded to the required length for reuse on some of the other piles. No claim shall be entertained if the cut pieces cannot be reused by the contractor.

2.3.15 The contractor shall take all necessary precautions while piling close to existing structures/other foundations/track so as to minimize vibrations and ground movement. Bores shall be encased as directed by the Engineer and boring shall commence only after precautionary measures are taken. While working near the existing track, infringements and other safety aspects shall be specially considered and taken care of.

2.3.16 The contractor shall indemnify the DFCCIL Administration against any claim or obligations arising out of any damage to structure or out of any injury to any person/persons due to piling working done by him.

2.3.17 The contractor shall mobilize and maintain requisite resources for piling including concreting. Additional resources, as a standby shall also be available in advance of work, to take care of any eventualities. Admixtures as approved by Engineer, shall be kept in readiness before concreting to meet any exigencies. After boring and/or cage lowering to avoid borehole instability and settlement of bentonite, boreholes shall not be left un-concreted for long.

2.3.18 The spoils arising out of boring shall be disposed off as directed by Engineer within the agreemental rates. In case of piling close to Railway track or near the existing road, contractor shall make adequate arrangements for disposing the muck away properly. Contractor shall also make adequate drainage arrangement for mud slurry so that the same does not affect the tracks or roads or adjoining properties.

2.3.19 The bored spoils may be dumped in a low lying area as directed by Engineer so that work site is restored back to normal condition after completion of work.

2.3.20 When the bore has reached its final depth, it shall be free from any foreign matter before placing the reinforcement cage and concreting for the pile is started. Reinforcement for the pile shall be carefully placed in position and concreting then started. The cover block used also shall satisfy strength and permeability criteria.

2.3.21 If hard rock is encountered, socketing in hard rock shall also be provided as per codal provision.

2.3.22 In case of sloping bedrock profile, the requisite depth of socketing shall be ensured as minimum all round piling and the payment will be made for the least depth of socketing only and no claims of differential depth of socketing are admissible.

2.3.23 The bottom level of pile cap will be decided by Engineer, depending upon capacity and ground level.

2.3.24 Care shall be taken for free flow of concrete through splices and congested reinforcement zones with proper detailing and monitoring.

2.3.25 The quantity of concrete required for a particular pile shall be calculated as per depth of the pile and nominal diameter of the pile. This quantity shall be checked with the actual quantity of concrete used, which is to be recorded and signed jointly by the contractor and representative of the DFCCIL. Theoretical quantity of concrete, calculated as per depth and nominal diameter of the pile shall form the basis of calculating the cement quantity as per approved design mix, for payment to the contractor,

2.3.26 For the finishing of pile heads, the clearances of reinforcements in the pile cap and the keying of the pile head into the pile cap shall be as given in IS : 2911.

2.3.27 The contractor shall maintain bore log register and bored samples for each pile boring and concreting. The details shall contain various operations in pile boring with time, type of soil met with depth of penetration with levels, liner welding and lowering details, obstruction to boring, if any, machine down time, rock touch level and final socketed level. The flushing out details before cage lowering and before concreting shall also be recorded. The concreting details such as mix proportions, sounding at various depths vis-à-vis cement / concrete consumption, unusual observations while concreting, interruption to concreting, if any and overflow concrete shall be recorded. The swelling and/or squeezing of borehole in uncased portion shall be specially monitored with recording of sounding depth, quantity concreted actually and quantity theoretically estimated corresponding to that sounding depth.

2.3.28 The payable depth of piles shall be taken up to the clear distance from the cut-off level (bottom of pile cap) to the average bottom of the bore. The depth so measured shall be rounded off to the nearest first decimal of a metre (0.05 metre or more to be reckoned as 0.10 metre whereas below 0.05 metre to be reckoned as 0.00 metre) for the purpose of making payment.

2.3.29 In group of two or more piles, piles of same diameter and same load carrying capacity shall be installed. The distance between centre to centre of such piles shall be governed by IS : 2911. In case the contractor offers to install the piles closer than this spacing, he shall state the reduction in the working load of the pile which will be subject to the approval of Engineer. The additional piles required on this account shall be provided by the contractor without any extra cost to the DFCCIL. Also cost of cement and steel reinforcement used on this score will have to be borne by the contractor. New MS liners shall also be to contractors account.

2.3.30 If any pile during boring has deviated from the design position or from the verticality or if the safe allowable load of the pile is not obtainable as per the design, all these facts shall be reported promptly to the Engineer during the execution of the work with suggestion from the contractor regarding adequate corrective measures. The Engineer shall consider the suggestions of the contractor and shall give necessary directions for the corrective measure which shall be done by the contractor at his own cost and risk. However, if certain piles are rejected by the Engineer on account of improper location / verticality / alignment / capacity, the Engineer may allow the rejected piles to be left in their places and additional piles may be installed to take up the safe working load of the rejected piles with satisfaction of Engineer without any extra cost to the DFCCIL. If any such changes involve additional expenditure due to increase in size of pile cap, etc., the same shall also be borne by the contractor including the extra cost involved in the usage of the extra quantity of cement and steel used in such changes.

2.3.31 No payment will be made for rejected piles and also for the cement, steel and the MS liners provided for the rejected piles.

2.3.32 **Pile load Test:** IS : 2911 (Part 4) prescribes various guidelines and procedures for load tests on piles. Pile load test shall be conducted as per IS : 2911 (Part 4) and as directed by the Engineer. Vertical load tests (compression) and lateral load tests shall be adopted for testing of piles. There shall be two categories of tests on piles for each type of loading (vertical and lateral), namely, initial tests and routine tests. Initial tests should be carried out on test piles which are not to be incorporated in the work. Routine tests shall be carried out as a check on working piles.

Initial load test is carried out to determine the ultimate load capacity and arrival at the safe load by application of factor of safety whereas routine test is conducted to determine the safe load of pile, checking the safety load and extent of safety. In other words, routine test is conducted to check whether the pile is capable of taking the working load assigned to it.

Non-destructive testing i.e. Integrity testing of pile using Low Strain / Sonic Integrity Test / Sonic Echo test method in accordance with IS : 14893 shall be carried out for integrity testing of concrete in the installed pile.

The vertical load test and lateral load test shall be carried out as per clause 6 and 7 of IS : 2911 (Part 4).

Safe load on a pile is derived by applying a factor of safety on ultimate load capacity of pile as determined by a load test whereas working load is the load assigned to pile according to design. The safe loads on single pile and on group of piles for the initial test and routine test shall be in accordance clause 6.1.5 and 6.1.6 of IS : 2911(Part 4). Test load shall be 2.5 times the safe capacity load for Initial Load. For routine test, test load shall be at least 1.5 times the working load for maximum settlement not exceeding 12mm in case of single pile whereas test load shall be equal to the working load for maximum settlement not exceeding 25mm in case of group piles.

The test shall be carried out at cut off level wherever practicable, otherwise suitable allowance shall be made in the interpretation of the test results / test load if the test is not carried out at cut-off level.

The contractor shall submit all data along with load vs settlement, time vs settlement, interpretation of the pile load test, etc., in a report along with characteristics of the pile as per IS 2911 and as directed by the Engineer.
For any other type of test such as pullout tests, etc. if considered necessary, the contractor shall make arrangements in consultation with the Engineer and payments for the same will be eligible as decided mutually in advance.

Payment for initial vertical load test, routine vertical load test and lateral load test will be made against a separate item provided in the schedule.

2.3.33 The contractor is required to carry out load test in pile or group of piles as per provisions contained in IS : 2911 (Part 4) of and shall provide all the designing, testing, loading, supporting, instrumenting, recording & reporting arrangements at the agreement rates. The design, instrumentation etc., shall be approved by the CGM/GM/ROB,/CPM, DFCCIL.

2.3.34 The payment for the test of the pile or group of piles shall be made to the contractor only when the test is found to be satisfactory. For tests which are found to be unsatisfactory or which are not completed due to any reasons whatsoever, no payment shall be made to the contractor.

2.3.35 The agreemental rates for tests include instrumentation, reporting, arranging of necessary kentledge, R.S. Joists, sand bags, etc, required for loading the platform for successful testing of the pile or group of piles and removing the same from the site of work after the test is completed and clearing the site to the satisfaction of the Engineer and no extra payment shall be made on this account.

2.3.36 In case of defective piles, DFCCIL reserves the right to order, at the cost of contractor, non-destructive test for integrity and / or capacity assessment or additional static load tests as confirmatory tests at the cost of the contractor. The test shall be considered satisfactory only if the criteria laid in specifications are satisfied and the behaviour of the pile or pile group during the period of test does not disclose any defects as specified in relevant codes and as directed by the Engineer.

2.3.37 Each pile shall be identified with a reference member. Level marks shall be accurately painted on each pile immediately after its installation. The contractor shall record all the information

during installation of piles as directed by the Engineer. Pile records in triplicate shall be submitted by the contractor.

2.3.38 Approval of the termination depth of the pile by the Engineer shall, in no way, absolve the contractor on the integrity of the pile.

2.3.39 **Control of Position and Alignment:** Piles shall be installed as accurately vertical (for vertical piles) as possible. The permissible limits for deviation with respect to position and alignment shall confirm to IS: 2911 (Part 1/Section 2).

2.3.40 Working level shall be above the cut-off-level. After the initial boring of about 1m, temporary guide casing of suitable length shall be lowered in the pile bore for vertical pile. The diameter of guide casing shall be such as to give the necessary finished diameter of the concrete pile. The centre line of guide casing shall be checked before continuing further boring. Guide casing shall be minimum of 1.0m length. Additional length of casing may be used depending on the condition of the strata, ground water level etc. The temporary guide casing (if provided) shall be withdrawn cautiously, after concreting is done upto the required level. While withdrawing the casing, concrete shall not be disturbed.

2.3.41 Permanent MS Liners shall be provided for piles upto point of refusal or as directed by the Engineer. The bottom end of the MS Liner shall be stiffened by welding additional plates to withstand the impact during driving.

2.3.42 In case hard rock is encountered, chiseling is essentially required for softening of the rock, the same may be adopted only on approval of the Engineer, at no extra cost to the DFCCIL. Advancement of pile bore shall be done by drilling only, in case of use of rotary hydraulic drilling rig.

2.3.43 Specifications for Bentonite shall be as follows: Liquid limit of bentonite when tested in accordance with IS: 2720 (Part V) shall be 400 percent or more. Bentonite solution should be made by mixing it with fresh water using pump for circulation. The density of the freshly prepared bentonite suspension shall be between 1.03 and 1.10 gm / ml depending upon the pile dimensions and type of soil in which the pile is to be installed. However, the density of bentonite suspension after mixing with deleterious materials in the pile bore may be upto 1.25 gm / ml. The marsh viscosity when tested by a marsh cone shall be between 30 to 60 stoke. The pH value of the bentonite suspension shall be between 9 and 11.5.

2.3.44 Cleaning of borehole:- After completion of borehole upto the required depth, the borehole shall be cleaned as per clause 8.3 of IS : 2911 (Part 1/Section 2).

2.3.45 A protocol shall be maintained regarding the strata at the founding level, SPT value, percent core recovery, Unconfined Compressive Strength (UCS) from the nearest borehole, socketing horizon, flushing of pile bore, time interval between end of boring and start of concreting, bentonite density before start of concreting.

2.3.46 Top of Concrete in Pile and Cut off-level (COL):- Cut-off-Level of piles shall be as indicated in drawings released for construction. The top of concrete in pile as cast shall be above the cut-off-level by 1.0 metre (maximum) to remove all laitance and weak concrete and to ensure good concrete at cut-off-level, for proper embedment into the pile cap. The area surrounding the piles shall be excavated up to the bottom of the pile caps. After seven days of concreting of pile, the exposed part of concrete above the COL shall be removed / chipped off and made rough at COL. The projected reinforcement above COL shall be properly cleaned and bent to the required shape and level to be anchored into the pile cap. The pile top shall be embedded into the pile cap by 150 mm or clear cover to reinforcement, whichever is higher. All loose material on the top of pile head after chipping to the desired level shall be removed and

disposed off as directed by the Engineer.

2.3.47 Reinforcement: The longitudinal reinforcement shall project 50 times its diameter above cut-off-level unless otherwise indicated. Proper cover to reinforcement and central placement of the reinforcement cage in the pile bore shall be ensured by use of suitable concrete spacers or rollers, cast specifically for the purpose. Placement of reinforcement cage to its full length shall be ensured before concreting. Minimum clear cover to the reinforcement shall be 75 mm, unless otherwise mentioned.

2.3.48 Building Up of Piles: If any pile, already cast as per construction drawing, requires any extra casting due to any change in cut-off-level, then the pile shall be built up by using at least one grade higher concrete than specified for piles, ensuring proper continuity with the existing concrete and to the satisfaction of the Engineer. Necessary reinforcement, as per design requirement and suitable shuttering shall be provided, before casting the concrete. Surrounding soil shall also be built up to the required level by proper compaction, to ensure lateral capacity of the pile.

2.3.49 Breaking Off: If any pile already cast requires breaking, due to subsequent change of Pile's cut-off-level, then the same shall be carried out, not before seven days of casting without affecting the quality of existing pile, such as loosening, cracking etc., and to the satisfaction of the Engineer. If any pile is cracked, the same shall be replaced by the contractor at his own cost.

2.3.50 Bore Hole testing: Bore hole shall be made as per IS:1892.

2.3.51 IMPORTANT CONSIDERATIONS, INSPECTION / PRECAUTIONS

(i) While concreting uncased piles, voids in concrete shall be avoided and sufficient head of concrete shall be maintained to prevent inflow of soil or water into the concrete. It is also necessary to take precautions during concreting to minimise the softening of the soil by excess water. Uncased cast-in-situ piles shall not be permitted where mudflow conditions exist.

(ii) The drilling mud such as bentonite suspension shall be maintained at a level sufficiently above the surrounding ground water level to ensure the stability of the strata which is being penetrated all through the boring operation and until the pile has been concreted.

(iii) Where bentonite suspension is used to maintain the stability of the bore-hole, it is essential that the properties of the material be carefully controlled at stages of mixing, circulating through the bore-hole and immediately before concrete is placed. It is advisable to limit:

(a) The density of bentonite suspension to 1.05 g/cc and maintain it.

(b) The marsh cone viscosity between 30 and 40

(c) The pH value between 9.5 and 11.50

(d) The silt content less than 1 per cent

(e) The liquid limit of bentonite not less than 400 per cent

These aspects shall act as controlling factors for preventing contamination of bentonite slurry by clay and silt.

(iv) The bores shall be washed by bentonite flushing to ensure clean bottom at two stages viz. (a) after completion of boring and (b) prior to concreting after placing of reinforcement cage. Flushing of bentonite shall be done continuously with fresh bentonite slurry till the consistency of inflowing and outflowing slurry is similar.

(v) Tremie of 150mm to 200mm diameter shall be used for concreting. The tremie should have uniform and smooth cross-section inside, and shall be withdrawn slowly ensuring

adequate height of concrete outside the tremie pipe at all stages of withdrawal. Other precautions to be taken while tremie concreting are:

(a) The sides of the bore-hole have to be stable throughout

(b) The tremie shall be water tight throughout its length and have a hopper attached at its head by a water tight connection.

(c) The tremie pipe shall be large enough in relation to the size of aggregates. For 20mm aggregate the tremie pipe shall be of diameter not less than 150mm and for larger size aggregate tremie pipe of larger diameter is required.

(d) The tremie pipe shall always be kept full of concrete and shall penetrate well into the concrete in the bore-hole with adequate margin of safety against accidental withdrawal if the pipe is surged to discharge the concrete.

(e) For very long or large diameter piles, use of retarding plasticiser in concrete is desirable.

2.3.52 Pile Data:

The contractor shall submit data in the following proforma for each pile indicating all technical details along with date and time of various operations in adequate permanent forms/copies for record.

Proforma

(i) Reference No. Location (Co-ordinates) __ area.

(ii) Sequence of installation of piles in group

(iii) Pile diameter & type

(iv) Working level (Platform level)

(v) Cut off level (COL)

(vi) Actual length below COL

(vii) Pile termination level

(a) Start of socket (Level)

(b) Termination of pile (Level):

(viii) Top of finished concrete level

(ix) Date and time of start and completion of boring.

(x) Depth of ground water table in the vicinity.

(xi) Type of soil/ rock at pile tip

(xii) Method of boring operation

(xiii) Details of drilling mud (Bentonite) as used:

(a) Freshly supplied mud:
Liquid limit
Sand content
Density
Marsh viscosity
Swelling index,

PH value

(b) Contaminated mud:
Density
Sand content

(xiv) (a) Standard Penetration Test (SPT) Penetration for 100 blows at Socketing Level for reference pile:

(b) Unconfined Compression Strength (UCS) Value in rock (from the nearest bore hole): Core recovery (from the nearest bore hole):

(c) Rate of drilling in mm / hr:
(1) At start of socketing horizon
(2) At termination level

(xv) Date and time of start and completion of concreting.

(xvi) Method of placing concrete

(xvii) Concrete quantity
Actual:
Theoretical:

(xviii) Ref. number of test cubes

(xix) Grade and slump of concrete

(xx) Results of test cubes

(xxi) Reinforcement details:
Main reinforcement Stirrups: Type
No._____ No._____
Dia _____ Dia _____
Depth_____ Spacing_____

(xxii) Any other information regarding obstructions, delay and other interruption to the Sequence of work.

(xxiii) Pile bore log details (in brief).

2.3.53 Such structure or parts of the structure which fail or pass the specified tests, shall be removed from the site by the tenderer/contractor at his cost and the contractors shall redo the work. Payments made on account of the rejected structure/part structure work shall be recovered from the contractor and the work will be redone by him at the same rates.

2.4 GENERAL GUIDLINES AND SPECIFICATIONS FOR SUPPLY OF REINFORCEMENT AND STRUCTRURAL STEEL

2.4.1 SUPPLY OF STEEL FOR VARIOUS WORKS:

Supply of steel to various specifications as required under various schedules in the contract are governed by the Technical specifications and Special Conditions specified hereunder.
All steel shall be supplied by the Contractor at the site of work and stacked, stored, protected and maintained by him at his cost till they are put into use. Any temporary structure required for storage of steel etc., has to be provided by the Contractor at his cost and should be removed after completion of the work. The DFCCIL will only provide suitable land for construction of the above temporary shed free of cost wherever available.

For supply and use of steel in various works, relevant IRS Codes Specifications, IS Specifications and Railways specifications will be applicable.

2.4.2 SPECIFICATIONS FOR STEEL:

2.4.2.1 The steel supplied by the contractor must satisfy any of the following material specifications as required for the work along with other concerned specifications.

(i) The reinforcement steel shall be Thermo mechanical Treated bars of grade Fe 500 conforming / satisfying to IS 1786 (Up to date).

(ii) The structural steel shall be conforming to IS 2062 (Up to date) as specified. It shall have Sub quality ‘B0’ & Grade E250 (Fe 410 W) as mentioned in the tender schedule and the requirements of IRS B1-2001 shall be fulfilled for all components for all spans. 12 mm thick & above plates are fully killed and fully normalized / controlled cooled as mentioned in the tender schedule. B0 sub quality indicate the requirement of impact test at room temperature and should conform to Charpy Impact Test at room temperature in accordance with relevant I.S. Code.

(iii) Relevant other IS and IRS Specifications with regard to properties, testing and use of the above steel items also shall govern.

2.4.2.2 The contractor shall produce the manufacturers test certificate for each lot of supply satisfying the requirements of relevant IS specifications and at the specific frequency as laid down.

2.4.2.3 The Contractor shall arrange to carryout additional tests on physical properties of steel for every 50 metric tonne (t) of steel and for every change in lot / batch for reinforcement steel and structural steel at his cost. No extra payment will be made for conducting such tests and the agreemental rate is inclusive of above testing charges.

2.4.3 PROCUREMENT OF STEEL:

2.4.3.1 All Reinforcement steel (TMT bars) and Structural Steel shall be procured as per specification mentioned in BIS’s documents – IS:1786 and IS:2062. Independent tests shall be conducted, wherever required, to ensure that the materials procured conform 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 Steel's (Government of India) guidelines.

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 with the approval of Engineer.

2.4.3.2 The contractor shall have to submit the cash memo and challans along with the lot / batch of steel purchased in token of proof of purchase of steel from reputed dealers. Steel shall be approved by Engineer only after production of necessary certificates before use in works.

2.4.4 REINFORCEMENT AND STRUCTURAL STEEL:

2.4.4.1 Payment for supply of all types of steel shall be made for the quantity required / used as per the drawings issued from time to time. No payment will be admissible for quantity supplied in excess of the required quantity as per drawings. However, contractor will be permitted to take the excess quantity back by his own means, but no claim for payment for transportation so involved will be admissible. No payment will be made for more supply of steel at the site / excess used in Construction. No payment will be made for steel used in temporary or enabling works unless explicitly provided for in the Schedules. Steel for enabling/temporary works shall be arranged by the Contractor at his own cost.

2.4.5 STAGE PAYAMENTS FOR STRUCTURAL STEEL:

2.4.5.1 No Advance Payment shall be made. However, stage payment for manufacturer of steel girders shall be made as per Bills of Quantities by the DFCCIL for steel physically brought to site by the contractor, before actual use in the work against irrevocable Bank Guarantee or Indemnity Bond (as the case may be) and on production of necessary records.

2.4.5.2 Stage payment for steel will be released subject to the following conditions:

(i) The steel shall be delivered at site and properly stored under covered sheds in measurable stacks and separately maintained for various sizes, sections and dates of supply.

(ii) The quantities of steel shall be brought to the site only in such instalments that would facilitate smooth progress of work and consumed in reasonable time. The payment will be restricted to a maximum of 30% of the schedule quantity at any point of time.

(iii) Proper accountable in the Steel Register is to be maintained in the prescribed format at the site for the receipt and use of the steel.

(iv) Ownership of such steel shall be deemed to vest with the DFCCIL.

(v) Before releasing the stage payment, the contractor shall insure the steel at his own cost in favour of DFCCIL against theft, misuse, damages, fire etc., and submit the insurance along with Indemnity bond / Bank Guarantee covering the Stage amount for steel.

(vi) The price variation claim for steel will continue to be governed as per extant PV clause and with reference to delivery at site.

(vii) The Stage payment will be made, only when the Engineer or his authorized representative certifies that the said quantity of steel is received at site and entered in the register and that in his opinion the steel is actually required in accordance with the contract.

(viii) No Stage payment is permitted for steel required for temporary and enabling works.

2.4.5.3 Stage payment for composite steel Girder under SOR item 16.16 will be as under:-

(a) 60% against supply & fabrication and receiving the fabricated components at ROB site.

(b) 20% after assembling the fabricated components as per drawing at ROB site.

(c) 20% after erection and completion of item.

2.4.5.4 Any Stage payment found to be made against the materials brought to the site in excess over the actual materials consumed in work shall be recovered from the contractor dues.

2.4.6 OTHERS:

2.4.6.1 Reinforcement steel and structural steel, shall be stored in such a way so as to avoid distortion and to prevent deterioration by corrosion. All steel used should be free from loose Mill scale, loose rust, paints and oil covering / coating etc.

2.4.6.2 Steel material, for which stage payment has been availed by the Contractor, shall be property of DFCCIL and will be issued to contractor by Engineer whenever required for the work. Contractor will be solely responsible for guarding against theft / misuse of the consignment

due to any cause what so ever. The stage payment will be made, only when the Engineer certifies that in his opinion that the materials are actually required in accordance with the contract. It is the responsibility of the agency to ensure that steel as per the requirement is brought to site as per approved drawings / requirements.

2.4.6.3 The contractor shall be bound to store the materials at site of work earmarked for the purpose by the Engineer and shall not remove from the site nor use for any other purposes than exclusively for execution of the work for which the materials are intended for. Safe guarding of the materials is the responsibility of the contractor even if the material is deemed to be owned by the DFCCIL and insurance etc., have been arranged by the contractor.

2.4.6.4 Contractor shall remove from site any steel materials rejected by the Engineer within reasonable time as specified by him.

2.4.6.5 Before the test pieces are selected, the Contractor shall furnish copies of the mill records of the reinforcement steel giving number of coils in each cast with sizes and identity marks to enable identification of the material with the bill produced.

2.5 GENERAL GUIDELINES AND SPECIFICATIONS FOR FABRICATION & ERECTION OF COMPOSITE GIRDER AND SPECIAL CONDITIONS

2.5.1 GENERAL:

This chapter covers the supply of material, fabrication, assembly and erection of Composite Girder and bearings

The following are the brief specifications and general guidelines for fabricating and erecting the girders but not limited to.

For detailed technical specifications for fabrication and erection of girders, refer Indian Railways Unified Standard Specifications (Works and Materials), 2010 amended up to date, Issued under the authority of Chief Engineer, North Western Railway from time to time or as amplified, added to superseded by Additional Specifications if any, appended to or as modified from time to time and Indian Railway Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turn-Tables (Serial No B1-2001) shall be followed.

The 2 Nos. Two Lane Road Over Bridges (ROBs) are to be constructed including approaches in lieu of level crossings. Level crossing Nos, their chainages and span configurations of these are given below in table. The superstructure of these ROBs is composite girder. These have been designed by Research Designs & Standards Organization (RDSO) for IRC loading.

Composite girder is a combination of plate girders and deck slab. These girders involve the use of shear connector also. For these ROBs, there are five leaves (plate girders) in one composite girder. Width of bridge is shall be as per approved Drawings. These are two lane ROBs hence, Carriage way width of these bridges are 7.50 m. The superstructure includes two RCC crash barriers and two RCC railings as per MORTH design. The wearing coat is made of plain concrete. The wearing coat is 80 mm thick or specified in approved drawings. The cross drainage slope of 1 : 40 is in the deck slab to drain the water. 50 mm dia GI pipe shall be used as drainage spouts.

The RCC deck slab has been designed with design Mix Concrete with grade of Concrete M40. The environmental exposure condition of this area where 2 ROBs are being constructed is moderate. As per moderate condition, minimum grade of concrete required as per Addendum and Corrigendum slip no 12 dated 02.06.2009 of Concrete Bridge Code - 1997 is M30. Minimum grade of concrete requirement is for durability of the structure. Hence, M40 satisfies the codal provisions of Concrete Bridge Code.

SL. No.	Level Crossing No	IR Km. of ROB	Between Station	Span configuration Tentative (m)	Remarks

1.	108	565/0-1	Banas Yard	2x37.28m+1x30m+4x20m+1x48m	Deck type

The bearings used in these girders are POT and POT cum PTFE (Poly Tetra Floro Ethylene). These bearings have been designed by RDSO. The contractor has to purchase the bearings from the approved manufacturers as per drawing issued by RDSO and for higher spans as per respective RDSO drawings of composite girder or suitable to Railway opening as per approved drawings.

Pin and Metallic Guide bearing have also been shown in the drawings of superstructure of RDSO composite girders. But these are used in Seismic Zone IV and V. For this work, these bearings are not applicable.

The 24m/ 30m/ 36m span Composite girder are to be fabricated as per RDSO Drawings with the Indian Railway Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turn-Tables (Serial No B1-2001). The RDSO drawings are mentioned in clause 2 of Part V of tender document.

High Strength Friction Grip Bolts (HSFGB) shall be used as per drawings of RDSO. Notes for use of HSFGB are given in drawing no. RDSO/B-11760/R.

For skew ROBs, please refer drawing no. RDSO/B-11759/R.

Protection screen is to be provided as per RDSO Drawing No RDS/ETI/0068 in each ROB.

The protective coating is to be given to the composite girder by metallizing with sprayed aluminium as recommended in RDSO drawings mentioned in Para 2 of Part V (Drawings) of the tender document.

The Contractor will be required to develop jigs & Masters for each components of composite Girder and same will be approved by DFCCIL authorized inspecting officials. Masters templates should be stored & handled carefully and should be used only for checking the correctness of the jigs from time to time.

After successful inspection of the fabricated components, appropriate surface treatment i.e. metallizing shall be rendered & components transported to bridge sites.

Contractor will be responsible for making material dumping and girder erection yard as per the requirement for which no extra payment will be made by the DFCCIL to the Contractor.

2.5.2 Site Inspection

Tenderers are requested to inspect the site and carry out careful examination to satisfy them as to the nature of work involved and facilities available at the site. They should note carefully all the existing structures and those under construction through other agencies. They should also study the suitability of utilizing the different equipments and the machinery that they intend to use for the execution of the work. The tenderers should also select suitable sites for the purpose of locating their store yard, laboratory, staff quarters etc., and satisfy themselves with regard to the feasibility of transporting the plate girders from the yard to the final site of placement etc.

2.5.3 Brief Design Data

The composite girders has been designed as per relevant IRS / IRC / RDSO codes.

2.5.4 Codes and Specifications:

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

2.5.4.1 Indian Railway Standard Codes and Specifications:

(i) IR Specification for Fabrication of steel girder bridge & Locomotives turn tables (fabrication specification) – SERIAL NO. B1-2001 issued by RDSO, Reprint -2008 incorporating A & C slip upto 4 (upto date).
(ii) IRS : Welded Bridge Code (1989)
(iii) IRS : Steel Bridge Code (2003)
(iv) IRS: M-28 Specifications for electrodes.
(v) IRS: M-39 Specification for wire flux for SAW.

2.5.4.2 Indian Standard Specification:

(i) IS: 2062-2011 Specification for structural steel.
(ii) IS: 813-1986 Scheme of symbols for welding.
(iii) IS: 800-2007.
(iv) IS: 9595-1996 Manual for metal arc welding.
(v) IS: 818-1968 Code of Practice for safety and Health requirements in electric and gas welding operations.
(vi) IS: 5666-1970 Etch (Pre-treatment) Primer
(vii) IS: 104-1979 Specification for Ready mixed paint, brushing, zinc chrome, Priming
(viii) IS : 2339-1963 : Aluminium paint
(ix) IS: 2004-1991 Carbon steel forgings for general Engineering purposes.
(x) IS: 1852-1985 Rolling and cutting tolerances for hot-rolled steel products.
(xi) IS: 1148-2009 Rivet bars for structural purposes.
(xii) IS: 4353-1995 Recommendations of Sub-merged Arc welding of mild steel and low alloy steel.
(xiii) IS: 3935-1966 (shear connector)

2.5.5 Materials

2.5.5.1 Steel (Plates and Rolled sections) should conform to IS: 2062-2011. It shall have Sub quality 'B0' & Grade E250 (Fe 410 W) as mentioned in the tender schedule and the requirements of IRS B1-2001 shall be fulfilled for all components for all spans. 12 mm thick & above plates are fully killed and fully normalized / controlled cooled as mentioned in the tender schedule. B0 sub quality indicate the requirement of impact test at room temperature and should conform to Charpy Impact Test at room temperature in accordance with relevant I.S. Code.

Material supplied by the manufacturers shall be ultrasonically tested as per codal provisions at the manufacturer's premises before dispatch. The contractor on receipt of supply in his factory premises/fabrication workshop may have to carry out random USFD testing as per standards laid down in various codes and verify them with the list received from manufacturers, if instructed by the inspection agency/ Site Engineer. Only tested steel shall be used for fabrication. The steel shall comply in all respects with the requirements of approved drawings and relevant codes and specifications and it may be noted that quality of steel used for fabrication shall be the essence of the contract & shall be rigidly followed.

2.5.5.2 Structural Steel shall be procured as per specification mentioned in BIS's documents – IS : 2062-2011. Independent tests shall be conducted, wherever required, to ensure that the materials procured conform 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 Steel's (Government of India) guidelines.

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 with the approval of Engineer.

2.5.6 Test Certificates & Testing

All materials for the work shall pass Mechanical test, Charpy test, Chemical Analysis, etc. prescribed by the relevant IS specifications or such other equivalent specifications.

For all materials including HSFG bolts, the contractor shall furnish copies of test certificates from the manufacturers including proof sheets, mill test certificates, etc. showing that the materials have been tested in accordance with the requirements of various specifications and codal provisions.

If any further testing of materials is required by Engineer in respect of these and other items, it shall be arranged for by the contractor at a reputed laboratory/National test house as approved by Engineer. For this, nothing extra shall be payable and accepted rates in the schedule of items shall be deemed to include this.

Even satisfactory outcome of such tests or analysis shall in no way limit, dilute or interfere with the absolute right of the Engineer to reject the whole or part of such materials supplied, which in the judgement of the inspecting authority does not comply with the conditions of the contract. The decision of the Engineer in this regard shall be final, binding and conclusive for all purposes.

The Engineer shall be empowered, at his/her discretion to make or have made under the supervision, any of the tests specified in the specifications mentioned herein in addition to such other tests as he/she may consider necessary, at any time up to the completion of the contract and to such an extent as he/she may think necessary to determine the quality of all materials used therein. In doing so, he/she shall be at liberty under any reasonable procedure, he/she may think fit to select, identify, have cut-off and take possession of test pieces from the material either before, during or after its being worked up into the finished product.

The Engineer shall also be empowered to call for a duly authenticated series of mechanical tests to be obtained from the maker for this materials used in the work and to accept the same in lieu of other tests to the extent he/she deems fit. The Contractor shall supply the material required for the test pieces and shall also prepare the test pieces necessary.

The test shall be carried out by the Contractor, for which Contractor shall provide all facilities including supply of labour and plant. Engineer may at his/her discretion direct the Contractor to despatch such tests pieces as he/she may require to the National Test House or elsewhere as he/she may think fit for such testing purposes.

The Engineer may at his/her discretion, check test results obtained at Contractor's work by independent tests at National Test House.

The Engineer shall at all times be empowered to examine and check the working of the Contractor's plant before and after using it. Should the Contractor's plant be found, in the Engineer's opinion, unreliable, he/she is empowered to cancel any tests already carried out in this contract and have these tests carried out at any National Test House or elsewhere, as he/she may think fit.

2.5.7 Packing

All projecting plates or bars shall be kept in shape by timber or angle bars spiked or bolted to them and the ends of chord lengths, end posts etc at their shipping joints shall be protected and stiffened so as to prevent damage or distortion in transit as the Engineer may direct.

All threaded ends and machined surfaces are to be efficiently protected against damage in transit. The parts shall be transported in convenient lengths.

All straight bars and plates except small pieces are to be transported in convenient bundles temporarily riveted or bolted together or bound with wrought iron or suitable wire as the Engineer may direct. All bolts, nuts, washers, plates under 300mm square and small articles generally are to be packed separately for each span in cases each weighing when full not more than 350 kg or in strong petroleum casks, or barrels as approved by Engineer. If not entirely filled by the contents the space left shall be closely packed with wood shaving or other suitable material. HSFG & other temporary Bolts of different sizes shall be separately packed in bags, each bag having a label indicating its contents. A list of contents shall be placed on top of each case or cask.

2.5.8 Stacking Materials:

(a) The materials, on receipt at site, shall be carefully unloaded, examined for defects, checked, sorted and stacked securely on a level bed out of danger from flood and out of contact with water or ground moisture. All materials shall be available for inspection by the Engineer.

(b) The materials shall be verified with the marking shown on the marking plan of part list, which shall be supplied by the manufacturers or the Engineer.

(c) Any materials found damaged during transit or while unloading should be stacked separately and damaged portions shall be indicated by paint with distinctive colour. All such materials shall be dealt with under the orders of the Engineer without delay. If any component after receipt at site, has in the opinion of the Engineer or Purchaser, been damaged in transit, such component shall be replaced or repaired to the satisfaction of the Engineer or Purchaser free of cost.

(d) All such damaged material shall be dealt with as per the orders of the Engineer. Badly damaged portions may require replacement. Slightly distorted parts may be straightened by gradual pressure without heat or annealing. Badly distorted or broken parts must be dealt with as the case demands and as directed by the Engineer.

(e) Where the work has been passed in the manufacturer's works as strictly interchangeable, all members bearing the same marks can be stacked together without reference to any particular span.

(f) The tenderer shall unload the material promptly on delivery; otherwise the tenderer shall be responsible for demurrage charges.

(g) On receipt of rolled steel at workshop or fabrication yard, they shall be carefully unloaded and stacked properly to avoid bending, twisting, corrosion etc.

2.5.9 Manufacturing – The whole work shall be representative of the highest class of workmanship. The greatest accuracy shall be observed in the design, manufacture and erection of every part of the work to ensure that all parts will fit accurately together on erection and similar parts shall be strictly inter changeable as explained interchangeability paragraph. The contractor shall state which of the following alternative methods of manufacture, he intends to adopt.

(i) The whole of work to be erected complete and pieces marked to place.

(ii) All spans to be made strictly interchangeable as specified below

.

2.5.10 Interchangeability :

(i) Every span is to be temporarily erected complete in Contractor's works. and all parts as marked to their place, unless the whole of the work is made completely interchangeable by the use of steel jigs and hard steel bushes controlled by master gauges, in which case the first span must be completely erected to test the accuracy of the templates. Further spans or part span assemblies built from parts selected at random by the Engineer shall be erected from time to time to check the accuracy of the work as the Engineer may require.

(ii) If the work is considered interchangeable by the Engineer a simplified scheme of marking will be permitted, i.e. all pieces which are identical shall bear one distinguishing mark irrespective of the span to which they belong. Should the interchangeability not to the satisfaction of the Engineer, the whole of the spans must be erected complete and all parts marked to their place without additional charge. The tenderers must state in their tenders whether they intend to adopt complete interchangeability or not.

(iii) Under special arrangement with the Engineer, it shall be permissible for approved portions of the work to be despatched before complete erection of the first span, provided the Contractor satisfies the Engineer that such portions of the work are strictly interchangeable and will assemble correctly and accurately in the complete structure.

2.5.11 The tenderer may fabricate the steel work at his workshop or at the site of the work as is convenient to him. If the fabrication is done in his own workshop, the transportation of the fabricated materials may be done by Road or Rail transport at his own cost. The tenderer must inspect the approach roads right from the workshop and should ensure that it would be possible for him to transport the materials by Road.

2.5.12 If the tenderer propose to fabricate the steel at site, land / site would be given to the tenderer to make temporary workshop free of cost, if available, but on completion of work, the site would be restored to normal condition.

2.5.13 HSFG bolts shall be provided as per RDSO drawing.

2.5.14 The responsibility of custody of the materials, in Tenderer’s workshop or site will remain with tenderer till the completion of work and then handed over to the DFCCIL.

2.5.15 All welding consumables (electrodes, wire, flux etc.) shall be procured only from the manufacturers approved by RDSO subject to final approval by Engineer.

2.5.16 Removal of Unused Materials etc:

(a) The contractor shall take steps as desired by the Engineer to ensure that rejected work is not resubmitted for inspection.

(b) On the completion of the work, the tenderer shall remove all his unused and surplus materials, plant, stagings and refuse, or other materials produced by his operations and shall leave the site in a clean and tidy condition.

2.5.17 Fabrication

2.5.17.1 General

The fabrication of the girders and its accessories shall be carried out by the contractor in his factory premises or in a well-established fabrication workshop to be set up by the contractor at

bridge site or any other location as approved by the Engineer. The workshop staff shall have requisite experience, proven skill and experience in the technique of fabricating large components. Accuracy of fabrication shall be realized through controlled high precision jigs, fixtures and templates, which shall be inspected and passed by Engineer specifically approved in prior by CPM, DFCCIL. The fabrication shall be preceded by Quality Assurance plans to be submitted by the contractor and every activity shall be documented in detail. The Quality Assurance Plans shall clearly indicate how individual processes such as cutting of raw steel, making, drilling, assembly bolting, welding, painting, handling etc. shall be monitored for quality. The quality parameters for monitoring shall be identified. These identified quality parameters shall also be specified in these quality plans .The contractor shall get these quality plans approved from Engineer before start of fabrication work. The Engineer shall be empowered to check the manufacturing process from time to time to ensure that the work is executed as per approved quality plans. The quality records shall be submitted to Engineer for record, after completion of fabrication work.

The works of fabrication in contractor's fabrication shop will at all times be open for inspection by Engineer / agency as nominated by Engineer. Before dispatch of fabricated steel work from the shops, the same will be inspected in the contractor's fabrication workshop by Engineer who will thereafter issue inspection certificate.

Any defect noticed during inspection in the execution of work shall be rectified or replaced by the contractor at his own cost. The decision of Engineer or any other agency nominated for inspection as to be rectified or replaced, shall be final and conclusive.

2.5.17.2 Fabrication Drawings

The contractor shall prepare detailed shop drawings including drawing office dispatch lists (DODL's) on the basis of design drawings supplied by Engineer in such size and in such details as may be specified by Engineer. The shop drawings shall be submitted to Engineer in triplicate. No work of fabrication will be started without such approval being obtained. Contractor has to arrange the proof checking of the working fabrication drawings from the nominated Institution / Consultant. The cost will be borne by the contractor. Nomination of the Institution/Consultant for proof checking works will be decided by concerned CPM, DFCCIL. Engineer will make all efforts to approve the drawings submitted by the contractor within reasonable time but no claim from contractor for any delay on this account shall be entertained by Engineer.

For Engineer's use and record, the contractor shall supply free of charge, four sets of prints on string paper and one set of neatly executed tracings of all approved detailed drawings and fabrication drawings, soon after communication of approval for use at site.

2.5.17.3 Maintenance of records by Fabricators

The records of fabrication shall be maintained in the registers such as Jigs register, HSFG bolt checking register, Material offering and inspection register, RDSO inspection notes and compliance register, Welding procedure data register, Radiographic inspection register and Statement of material test certificates, etc. The formats are given in Appendix I of IRS B1 – 2001.

2.5.17.4 Tolerance in Fabrication

Basically, composite girders are plate girders. Fabrication tolerance for plate girders shall be as stipulated in Appendix II of IRS–B1– 2001.

All members of the girder and joints are to be either welded or bolted as shown in the approved

structural drawings. No welding except where approved by the Engineer is to be carried out at site. All welding and bolting are to be carried out as per relevant IRS Specifications.

2.5.18 Steel Tape

The Contractor shall maintain a master steel tape of approved make for which he/she has obtained a certificate of accuracy from any National Test House or Government recognised institutions competent to do so.

2.5.19 Flattening and Straightening

2.5.19.1 All steel materials, plates, bars and structural shall have straight edges, flat surfaces and be free from twist. If necessary, they shall be cold straightened or flattened by pressure before being worked or assembled unless they are required to be of curvilinear form. Pressure applied for straightening or flattening shall be such as it would not injure the material and adjacent surfaces or edges shall be in close contact or at uniform distance throughout.

2.5.19.2 Flattening and straightening under hot condition shall not be carried out unless authorized and approved by the Engineer.

2.5.20 Planing and Shearing

2.5.20.1 Except where otherwise indicated, cutting of all plates and sections shall be affected by shearing or sawing. All edges shall be clean, reasonably square and true. Wherever possible the edges shall be cut in a shearing machine, which will take the whole length of the plate in one cut.

2.5.20.2 Should the inspection find it necessary, the cut edges shall be ground afterwards.

2.5.20.3 Planning or machining of the edges or surface shall be carried out when so specified in the contract drawings or where specifically ordered by the Engineer. Where machining is specified, the plates or all sections shall be cut in the first instance to such a size so as to permit not less than 3mm of metal being removed from each sheared edge or end, in the case of plates or sections of 12mm or less in thickness and not less than 6mm of metal being removed in the case of plates and sections exceeding 12mm in thickness.

2.5.20.4 The butting ends of all booms and struts where spliced shall be faced in an end milling machine after members have been completely fabricated. In the case of compression members the face shall be machined so that the faces are at right angle to the axis of the members and the joint when made, will be in close contact throughout. At the discretion of the Engineer, a tolerance of 0.4mm may be permitted at isolated places on the butting line.

2.5.21 Flame Cutting

2.5.21.1 Flame cutting by mechanically controlled torch/torches shall be accepted both in the case of mild steel and high tensile steelwork. Provided the edge as given by the torch is reasonably clean and straight, plates may be cut to shape and beams and other sections cut to length with a gas cutting torch, preferably oxyacetylene gas should be used.

2.5.21.2 All flame cut edges shall be ground to obtain reasonably clean square and true edges. Draglines produced by flame cut should be removed.

2.5.21.3 Unless machining has been specifically provided for, special care is to be taken to ensure that ends of all plates and members are reasonably in close contact and the faces are at right angles to the axis of the members and joints, when made, are also reasonably in close

contact.

2.5.21.4 Use of multi-head flame cutting machine having multiple oxy acetylene torches is desirable for higher productivity and reducing the distortion due to cutting operation. Plasma-arc cutting method can also be employed. This process offers less heat input causing less distortion.

2.5.22 Method of fabrication

Considering the length and height of span, jigs and fixtures shall be used to guide and support drilling of holes and fixtures during entire fabrication work.

Jigs after manufacture shall be checked and approved by Engineer or any other Inspecting agency as nominated by CPM, DFCCIL. Only approved and stamped jigs shall be used for fabrication.

2.5.22.1 Tack Assembly

Tack assembly is the next step in fabrication which assembles the components to get the form of component or girder. This activity is to be done carefully so that the final components/ girders are fabricated to correct geometric shape and the size is within the tolerance specified.

For tack assembly, the components shall be kept on a firm hard bed and shall be held in position using suitable fixtures so that once the measurements are taken to set a component at proper location, these shall not move till the final tack assembly is done. The entire work shall be done in area where arrangements for manipulating the member such turning over, shifting etc can be conveniently done using EOT or other type of cranes and suitable covered shelter for sufficient protection against the weather is available.

Quality of tack Welds : as per clause 24 of Welded Bridge Code,

(i) Tack welds shall be not less than the throat thickness or leg length of the root run to be used in the joint.

(ii) Length of the tack weld shall not be less than four times the thickness of the thicker part or 50mm whichever is the smaller.

(iii) Where tack weld is incorporated in a welded joint, the shape, size and quality shall be suitable for incorporation in the finished weld and it shall be free from all cracks and other welding defects. Tack welds, which have poor quality and can crack, shall be cut out, ground and re-welded.

(iv)Tack welds shall not be made at extreme ends of joints.

(v) Tack welds are equally important in the overall quality and performance of the girder and these shall also be made by qualified welders.

(vi) After the tack assembly is complete, the girder./ component shall be checked for dimensional accuracy as per clause 13 of IRS B1. Drilling Jig and tacked members shall be clamped to a fixture to avoid shifting of jig during handling and drilling.

Tack welding may be permitted only at ends or locations, which will eventually be cut and removed. No active part of the component shall be tack welded as this would initiate crack formation in service.

2.5.23 Template

The contractor shall supply and provide templates at his own cost. **No separate payment shall be made for this and accepted rates shall be deemed to include this aspect.** The templates throughout the work shall be of steel of similar category. The templates shall be used for marking of cutting materials and as well as for profile machining for girders. Templates shall be used for marking of drilling holes in steel structure. In case where actual materials from a bridge have been used as templates for drilling similar pieces the Engineer will decide whether these are fit to be used as part of finished structure.

2.5.24 Template Shop

Fully covered template shop consisting of uninterrupted steel or concrete floor as approved having true and correct level covering adequate area shall be provided by the contractor.

2.5.25 Drilling and Sub punching

All holes shall be drilled but the Contractor may, if he/she so prefers sub-punch them to a diameter 6mm less than that of finished holes, e.g. a punched hole which is to be drilled out to 25mm in diameter shall not exceed 19mm in diameter at the die end. When the bolt holes are to be sub-punched, they shall be marked with a centre punch and made with a nipple punch or preferably, shall be punched in a machine in which the position of the hole is automatically regulated. The punching shall be so accurate that when the work has been put together before drilling, a gauge 1.5mm less in diameter than the size of the punched holes can be passed easily through all the holes.

Holes for turned bolts, should be 1mm under drilled in shop and should be reamed at site to suit the diameter of turned bolt.

The steel bushes shall be case hardened by an approved process and checked for diameter after the heat-treatment. The bores of bushes shall initially have a tolerance of -0mm, 0.1mm. The tolerance shall be checked from time to time and when the bores exceed a tolerance of, -0mm, +0.4mm, the bushes shall be rejected. For this purpose, go and no-go gauges are to be used. Tolerances for checking jigs from master plates shall be +0mm-0.13mm.

The work shall be taken apart after drilling and all burrs left by the drill and the sharp edges of all the bolt holes completely removed.

Drifting to enlarge unfaired holes is prohibited. The holes required to be enlarged shall be reamed provided the Engineer permits such reaming after satisfying himself about the extent of inaccuracy and the effect of reaming on the soundness of the structure. The Engineer reserves the right to reject all steel work if the holes are not properly matched.

On completion of drilling of holes in each component and before shifting the jig, it shall be ensured that all holes are drilled to their correct diameter to reconfirm quality of work.

2.5.26 Temporary Bolts, Nuts & Washers:

Refer Cl.28.1 to Cl.28.8 of IR Fabrication specification Serial No. IRS-B1-2001 issued by RDSO.

2.5.27 Alterations in the Work:

The Contractor shall not in any case or in any circumstances have authority to make any alterations in, modifications of, substitution for, addition to, or omission of work or any method or system of construction, unless an alteration order in writing directing such alteration, modification, substitution, addition, omission or change shall have been given by the DFCCIL prior to the commencement of the work or part of work nor shall the Contractor be entitled to any payment for or in respect of any such alteration, modification, substitution, addition, omission or change may have been actually made and executed and no course of conduct

shall be taken to be a waiver of the obligation and conditions hereby imposed.

All altered, modified, substituted, additional and changed work, labour and materials and all omitted work shall be valued by the Purchaser on the basis of the rates specified in the schedule.

2.5.28 Welding

Welded construction work shall be carried out generally in accordance with the provisions of Indian Railway Standard Welded Bridge Code and subject to further specifications given in the following paragraphs.

All welds should be done by submerged-arc welding process either fully automatic or semi-automatic. Carbon di oxide welding or manual metal-arc welding may be done only for welds of very short runs or of minor importance or where access of the locations of weld do not permit automatic or semi-automatic welding.

Except for special types of edge preparation, such as single and double 'U' single and double 'J' the fusion edges of all the plates which are to be joined by welding may be prepared by using mechanically controlled automatic flame cutting equipment and then ground to a smooth finish. Special edge preparation should be made by machining or gouging.

Site welding should not be undertaken except in special circumstances with the approval of the Chief Bridge Engineer. Site welding should be confined to connections having low stresses, secondary members, bracings etc.

Manual metal arc welding may be done taking adequate precautions as per IS:9595 and under strict supervision.

2.5.29 Welding Procedure

The welding procedure shall be such as to avoid distortion and minimize residual shrinkage stresses. Properly designed jigs should be used for assembly. The welding techniques and sequences, quality, size of electrodes, voltage and current required shall be as prescribed by manufacturers of the material and welding equipment. The contractor should submit full details of welding procedure in proforma given at Appendix-V of IRS B1-2001.

2.5.30 Sequence of welding and welding pass

For fabrication of welded composite girders, channel shear connectors shall be welded on top flange plate prior to assembly of I-section. This facilitates correction of any distortion of flange plate developed during the welding of channel shear connectors.

In making a typical I-section four fillet welds are to be made. The welding sequence to be followed is indicated by number 1 to 4 as shown in the Fig. 3 of IR Fabrication specification Serial No. IRS-B1-2001 issued by RDSO.

Whenever a square butt weld in a 10 or 12mm thick plate is required to be made, the sequence to be adopted is shown in Fig. 3 of IR Fabrication specification Serial No. IRS-B1-2001 issued by RDSO.

2.5.31 Procedure Trials for welding and cutting

Where required by the Engineer, welding and flame cutting trials as per following shall be carried out and completed before fabrication on representative samples of materials to be used in the work, as follows.

(i) The samples of material shall be selected and marked by the ENGINEER when the materials for the work are inspected at the mills.

(ii) The trials of flame cutting shall be carried out in material representative of all thicknesses to be used in the work.

(i) The welding & flame cutting trials shall be commensurate to the satisfaction of Engineer and the procedures to be adopted in the fabrication of work which shall include:

(a) Welding procedure in accordance with IRS Welded Bridge Code supplemented by IS 813 and IS 1980.

(b) Heat control techniques required to ensure that the flame cut surface of steel are suitable for inclusion in welds.

(ii) The trials shall include specimen weld details from the actual construction which shall be welded in a manner simulating the most unfavourable instances of fit-up and preparation. After welding the specimens shall be held as long as possible at room temperature but in any case not less than 72 hours, and then shall be sectioned and examined for cracking. Six representative samples of each weld joint similar to joint used in fabrication of all components shall be prepared by qualified and certified welding operators.

(v) Procedure trials: Testing shall be to relevant IS code or if approved to BS 709. The following groups of tests shall be carried out with the type of welds.

(a) Butt welds: Transverse tensile test, transverse & longitudinal bend test with the root of weld in tension and compression respectively, charpy V-notch impact test.

(b) Fillet welds: Fillet weld fracture test.

(c) Track welds: Inspection for cracking.

(d) All welds: Macro examination.

Additional tests may also be carried out as per requirement and instruction of Engineer, the cost of which shall be borne by the contractor.

Shop welded joints will be radiographically examined for 100 %.

Following tests are normally performed on welds.

(a) Non Destructive Tests (NDT):
- Visual inspection/profile gauge for dimensional check of size and throat thickness of weld.
- Etching test for penetration of joint.
- Magnetic particle or Ultra Sonic Pulse Velocity (USPV)
- Gamma Radiography & x-ray (only for butt welds)
- Dye penetration of all welds joints.

(b) Destructive Test :
- Tensile test
- Bend test
- Impact test
- Load test.

Once samples representing the weld joint used in fabrication of all components are tested and test results are found satisfactory, then approval shall be taken from the Engineer for the welding of built up components by approved welding operators. Welding Procedure Qualification Records (WPQR'S) shall include joint details, welding consumables (i.e. electrode/wire & flux combination), weld parameters (i.e. welding current, wire feed speed), welding position, welding equipment carriage speed (for SAW process), are Length, arc voltage etc.

2.5.32 Preparation of Faces

Preparation of joint face: Except for special types of edge preparation such as single or double 'U' & 'J' joints, the fusion edges of all plates which are to be joined by welding shall be prepared by using mechanically controlled automatic flame cutting equipment with the cutting allowance.

It shall be ensured by Non-destructive tests that the fusion face and adjacent surface are free from cracks, notches or other irregularities that are likely to cause defects during service or interfere with deposition of the weld.

Fusion faces and the surrounding surface up to 50 mm shall be free from mill scale, moisture, oil, paint dirt or any other substance which may affect the quality of the weld, and same shall be removed by grinding or flame cleaning/grit blasting.

Details of joint, fusion faces, root face and gap shall be as per details given in fabrication drawing or as stipulated in IS:9595.

2.5.33 Welding Operation

Parts to be welded shall be assembled such that the joints to be welded are accessible and visible to the operator. Assembly jig and fixture shall be used for accuracy.

Manipulators should preferably be used to execute the sequence of welding without disturbance, in the most suitable position. Fixture shall maintain the alignment with minimum restraint in order to reduce the possibility of locked up stresses.

Run in and run out plate shall be provided for fabrication of built up members or truss to ensure that weld will start on run in plate and weld will stop on run out plate and thus avoid crater defects on the components.

The size and length of weld shall not be less than those specified in the drawing nor shall they be in excess of the requirement without prior approval of the Inspecting Officer. The location of weld shall not be changed without prior approval o the Engineer.

During design and detailing of component lengths, care is to be taken to avoid butt weld in built up members of truss. Therefore it is essential to use only nearest size and length or rolled sections that have been procured to scheduled sizes and lengths by proper planning. No butt weld shall be carried out without approval of Engineer.

Fabrication of components subject to dynamic loading in the structure need careful inspection during fabrication by qualified, experienced and certified Engineer from contractor's side and final approval by Inspecting Officer. This inspection shall be carried out as stipulated in Indian Railway Welded Bridge Code before, during and after welding.

2.5.34 Precautions during welding

The Contractor shall submit list of weld joints of different combined thickness for approval of welding procedure for all members.

The welding of built up component shall be carried out only by approved welding operators and in accordance with Welding Procedure Qualification Records. WPQR's shall be prepared in advance and approved by the Engineer. Proper welding sequence shall be followed to avoid distortion and minimize residual shrinkage stress, and surface defects, within acceptable tolerance limits.

To ensure sound and defect free welding of built up members, record of welding adopted as per approved qualifying procedure shall be maintained in Performa prescribed in guidelines for welded fabrication issued by TPIA (Third Party Inspecting Agency) specifically approved in prior by CPM, DFCCIL.

Any change during welding for fabrication of built up member, such as welding sequence, welding process, positioning, wire and flux combination joint details, increase or decrease in combined thickness of joint by 5 mm etc. shall be carried out only after representative samples test and procedure qualification, is accepted. **In no case deviation from WPQR's without approval of Engineer shall be adopted.**

2.5.35 Additional Precautions during Welding

Following precautions shall further be observed during fabrication.

(i) All equipments shall be provided with calibrated gauges to observe limits of variation for parameters prescribed in WPQR'S for welding current, arc voltage, speed of travel of equipment etc.

(ii) Covered shed for environmental control (particularly against dust, moisture and water) shall be provided to avoid entrapment of hydrogen which is likely to cause crack initiation in weld or under bed of weld (i.e. Heat Affected Zone HAZ). Also baking of flux use for submerged arc welding in oven for an hour at 200 degree C shall be carried out o ensure that no moisture is contained in flux during welding.

(iii) All tack weld shall be carried out by qualified and approved welder only. As tack weld will become part of the final weld, it shall be free from all cracks and other welding defects.

(iv) If multiple runs are used for fabrication of built up member, inter run cleaning shall be carried out and subsequent weld bed made only after approval of inspecting officer or his authorized representative. This is to check free defects in the weld. Also visible defects such as cracks, cavities, if any, shall be removed by grinding. It shall be ensure during welding that craters are avoided.

(v) Stray arcing of components, which cause local hard spots or cracking of parent metal, shall be avoided.

(vi) Flux of approved quality will be permitted for use.

(vii) The Auto melt grade wire spools of wires for Submerged Arc Welding and Carbon Dioxide (CO_2) consumables of only the approved quality will be permitted.

(viii) Pre Heat Treatment will be given to the consumables to remove the moisture if any.

(ix) No violation of welding procedure will be permitted on any account.

2.5.36 Technical Organisation/tools, equipments and plants

(A) Contractor should have qualified and trained manpower suitable to do the work in terms of technical specifications and contract conditions.

(B) Contractor should have suitable and adequate plants, machinery and equipments required to execute the work like:

(i) Cutting machine
(ii) Radial drilling machine.
(iii) Edge milling machine, end milling machines.
(iv) Plate/structural steel straightening machine.
(v) Pneumatic grinding machine, drilling machines, chipping machines and wrenches etc.
(vi) Sand blasting equipment and metalizing equipments.
(vii) Welding machines.
  (a). SAW
  (b). MIG/MAG
(viii) Welding transformers3+
(ix) Cranes of adequate capacity.
(x) Suitable Jigs and fixtures.
(xi) To test the raw material and girders to conform to relevant specification, testing facilities, for the following should be available either in house or through outsourcing.
  (a). Elcometer for measurement of thickness of paints.
  (b). Steel measuring taps duly calibrated.
  (c). Ultrasonic flow detection testing facilities for checking internal flaws.
(xii) Suitable Welding manipulator.
(xiii) Macro etching/DP or MP testing facilities.
(xiv) Tongue tester for measuring current and voltage.
(xv) Gauges for checking weld size throat thickness and edge preparation etc..
(xvi) All equipments must meet the requirements of corresponding IS, IRS or other international specifications.

(C) **Manpower:** Adequate No. of trained qualified welders shall be available with the contractor. The welder must be trained in accordance with the provision of IS: 817. They must be trained either from recognized welding institutes or by in house training, where proper training facilities exist. The welder must be tested as per requirements of IS: 7310 and proper records maintained.

List of equipments mentioned above is only indicated and not exhaustive. The firm shall be required to deploy all other machineries, tools & plants etc. required for successful completion of the work of fabrication, assembly and launching of the girders.

2.5.37 General : Bolting & Welding

Qualified trained, and experienced supervision is essential at all times during fabrication, and for maintenance of records.

After welding of welded components, they shall be finished finally by grinding or matching with the help of a profile template. All the butting ends of components shall be faced in milling machine after members haven completely fabricated. In the case of compression members, the face shall be machined so that the faces are of proper angle as shown in drawing and the joint when made will be in close contact throughout within a gap tolerance of less than 0.15 mm. The Engineer may permit a tolerance of (-) 0.4 mm at isolated points in butting line.

2.5.38 PAINTING

Specification for metalizing and painting will be done as per Clause no 39.2.1 of Indian Railway Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turn-Tables (Serial No B1-2001).

2.5.38.1 Surface Preparation

This is the most important factor in ensuring good performance of the steel girder. The surface should be clean, dry and free from contaminants and it should be rough enough to ensure adhesion of the paint film. However it should not be so rough that the film cannot cover the surface peaks.

The cleaning of the surface shall be done initially with the use of emery paper, wire brushes, scrapers etc. for spot cleaning to remove rust, scale etc. Subsequently, sand blasting of the surface shall be done to remove rust, mill scale along with some of the base metal. This will be achieved by high velocity impact of abrasive material against the surface in accordance with the provisions of IS: 6586, which will also create a base for good adhesion. The abrasive material once used for cleaning heavily contaminated surface should not be reused even though re-screened. Washed salt free angular silica sand of mesh size 12 to 30 with a minimum of 40% retained on a 20 mesh screen shall be used for blasting. The material specifications and other requirements shall be as provided in Indian Railways Bridge Manual, 1998.

All site bolts, nuts and washers shall be thoroughly cleaned and dipped in boiled linseed oil. All machined surfaces are to be well coated with a mixture of white lead conforming to IS: 34 and Mutton tallow conforming to IS: 887 as per specifications before despatch to site. Nothing extra shall be payable to contractor on this account.

All the components in the floor and deck system in open web girders and all members in plate & composite girders shall be metalized as IRS specifications.

2.5.38.2 Metal Spraying

The metal spraying shall be carried out as soon as possible after surface preparation but in any case within such period that the surface is still completely clean, dry and without visible oxidation. If deterioration in the surface to be coated is observed by comparison with a freshly prepared metal surface of similar quality which has undergone the same preparation, the preparation treatment should be repeated on the surface to be coated

The wire method shall be used for the purpose of metallising the diameter of the wire being 3mm or 5mm. Specified thickness of coating shall be applied in multiple layers and in no case less than 2 passes of the metal spraying unit shall be made over every part of the surface. At least one layer of the coating must be applied within 4 hours of blasting and the surface must be completely coated to the specified thickness within 8 hours of blasting.

2.5.38.2.1 Purity of Aluminium

The chemical composition of aluminium to be sprayed shall be 99.5% aluminium conforming to IS: 2590.

2.5.38.2.2 Appearance of the Coating

The surface of the sprayed coating shall be of uniform texture and free from lumps, coarse areas and loosely adherent particles.

2.5.38.2.3 Thickness of the Coating

The nominal thickness of the coating shall be 150 µ(microns).The minimum local thickness, determined in accordance with procedure given in clause 2.5.38.3 below, shall be not less than 110 µ(microns).

2.5.38.3 Shop Painting

Any oil, grease or other contamination should be removed by thorough washing with a suitable thinner until no visible traces exist and the surfaces should be allowed to dry thoroughly before application of paint. The coatings may be applied by brush or spray. If sprayed, pressure type spray guns must be used. One coat of wash primer to IS:5666 shall be applied first. After 4 to 6 hours of the application of the wash primer, one coat of Zinc chrome primer to IS:104 with the additional proviso that zinc chrome to be used in the manufacture of primer shall conform to type 2 of IS:51 shall be applied. After hard drying of zinc chrome primer, one coat of Aluminium paint to IS:2339 (brushing or spraying as required) shall be applied.

2.5.38.4 Site Painting

After the steel work is erected at site a second cover coat of Aluminium paint to IS: 2339 (brushing or spraying as required) shall be applied after touching up the primer and the cover coat given in the shop if damaged in transit

2.5.38.5 Method for the Determination of Local Thickness

2.5.38.5.1 Equipment

Any magnetic or electro-magnetic thickness meter that will measure local thickness of a known standard with an accuracy of ± 10 percent.

2.5.38.5.2 Calibration of Instrument

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

(i) (Applicable to magnetic and elecro-maganetic meters other than the pull-off type) A soft brass shim , free from burrs, in contact with the grit-blasted surface of the base metal prior to its being sprayed. The thickness of the shim shall be measured by micro meter and shall be approximately the same as the thickness of the coating.

(ii) A sprayed metal coating of uniform known thickness approximately the same as the thickness of the sprayed coating to be tested, applied to a base of similar composition and thickness to the article being sprayed, grit-blasted in accordance with Clause 2.5.38.1.

2.5.38.5.3 Procedure

For each measurement of local thickness, make an appropriate number of determinations, according to the type of instrument used.

With instrument measuring the average thickness over an area of not less than 0.645 sq cm, the local thickness shall be the result of the one reading.

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

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

2.5.38.6 Method Of Test For Adhesion

Using a straight edge and hardened steel scriber which has been ground to a sharp 30

degree point, scribe two parallel lines at a distance apart equal to approximately 10 times the average coating thickness. In scribing the two lines, apply enough pressure on each occasion to cut through the coating to the base metal in a single stroke.

2.5.38.7 Inspection

2.5.38.7.1 Determination of Local Thickness

The minimum local thickness shall be determined by the method described above.

2.5.38.7.2 Adhesion

The sprayed metal coating shall be subjected to an adhesion test using the method described above. If any part of the coating between the lines breaks away from the base metal, it shall be deemed to have failed the test Articles, which have been rejected shall have the defective sections blasted clean of all sprayed metal prior to re-spraying. Where the rejection has been solely due to too thin a coating, sprayed metal of the same quality may be added provided that the surface has been kept dry and is free from visible contamination.

2.5.39 Paints: Source & Quality

Paint and other accessories including those for metallising work will be supplied by the contractor. Paints manufactured by the following firms (or more) may be used subject to their being in the approved list of RDSO and final approval by the Engineer.

M/s. Jenson Nicholson. Paints
M/s. British / Barger paints.
M/s. Shalimar Paints
M/s. I.C.I. paints
M/s. Nerolac. Paints

The contractor shall furnish to the Engineer, the date of manufacture of paint as certified by the manufacturers with the necessary container marking and test certificate for paint conforming to relevant IS code. In addition to this, he shall also submit the necessary vouchers in respect of paint purchased by him.

The Engineer reserves the right to get the paint tested at contractor's expenses as considered necessary by the Engineer. It the test results do not conform to relevant IS specifications fully, then the lost of paint shall be rejected and got removed from the contractor(s) storage. If the paint has already been applied it shall be removed.

In addition to above, the following tests are required to be carried out in the field.
-Weight per litre
- Consistency test
- Scratch test.
- Flexibility and adhesive test.

The Engineer reserves the right to reject the lot of paint even on the basis of field results.

2.5.40 Painting - General Instructions

Painting shall not be commenced till the surface preparation has been approved by the Engineer or his representative.

Sealed containers of paint of approved brand shall be used. The paint drums must be rolled,

turned upside down and shaken before opening. The paint must be stirred well before use. Over stirring which results in invisible air bubbles etc, shall be avoided.

Where brush painting is accepted, the paint must be applied by means of flat brushes not more than 75 mm in width having soft flexible bristles conforming to IS: 384.

Round and oval brushes of approved quality conforming IS: 487 may also be used as per the instructions of the Engineer or his representative or inspecting officer.

All new brushes should be soaked in raw linseed oil conforming to IS: 77 for at least 24 hours before use.

The date of painting shall be marked with paint on the member.

2.5.41 Care during Painting

Paint should be mixed in small quantities sufficient to be consumed within one hour in the case of red lead paint.

The applied coat of paint shall be uniform, and free from brush marks, sack marks, blemishes, scratching, non-uniform thickness, holes, log marks, fuel staining, cracking, scaling, and other defects.
Paint shall be applied only on dry and clean surface free from moisture or dust (including scrapping dust).

Paint should be used within the prescribed life from the date of manufacture.

2.5.41.1 Each coat of paint shall be left dry till it sufficiently hardens before the subsequent coat is applied. Each coat of paint shall be inspected by the Engineer and certified as satisfactory before applying subsequent coat.

2.5.42 ASSEMBLEY & ERECTION

2.5.42.1 General

The contractor shall provide at his own cost all tools, machinery, equipment and erection material, including all temporary works and shall assemble all components in every respect as stipulated in the contract and in accordance with approved drawings and specifications.

Before starting the work the contractor shall seek the Engineer's approval as to the method he proposes to follow and the type and suitability of equipment he proposes to use for assembly of girder components and launching of girder. The approval of the Engineer shall however not in any way relieve the contractor of the responsibility for the adequacy and safety of methods and/or equipments he proposes to use for carrying our work in full accordance with drawings and specifications.

All temporary work shall be properly designed and substantially constructed for the loads, which it will be called upon to support. Adequate allowance and provision of a lateral forces and wind loads shall be made according to local conditions and ensure that support shall not settle during erection.

When chains are used for lashing care must be taken to protect the edges of members from twisting and distortion, damage to paint and similar effects.

Temporary bracing shall be provided to take care of stresses caused by erection equipment or

other incidental loads during erection.

The method use for lifting and slinging flexible members shall be brought to the notice of the Engineer and shall be subject to his approval.

The contractor shall observe sufficient accuracy in the assembly of every part of the work to ensure that all parts fit accurately together.

2.5.42.2 Procedure for Assembly in Workshop & Site

The contractor is required to undertake test assembly of the girders in his fabrication workshop to prove accuracy of templates and Jigs. This assembly can be done in horizontal position. In case the fabrication workshop is set up by the contractor at bridge site itself the test assembly may be done at assembly platform and after testing of accuracy of jigs, fixtures & templates and the same assembly can be launched after bolting.

The test assembly shall be certified by Inspecting agency of the Engineer.

Launching of girders: once sufficient number of girders are assembled and the sub structure has been certified to be ready, launching of girders shall be taken up. The scheme for launching shall be approved beforehand by RITES LTD and any statutory clearances such as CRS sanction must be obtained. Launching can be done by any of the various methods such as using single crane, using multiple cranes, end launching or using derricks.

2.5.43 Care during Assembly at Workshop

2.5.43.1 Drilling & Drifting of Holes

Drilling of joints shall be avoided as far as possible and when necessary should be done with great care and under expert supervision. Hammers not exceeding 1kg (2 lb) in weight may be used with turned barrel drifts and a number of holes drifted simultaneously, the effect of drifting shall be checked by observation of adjacent unfilled hole.
Any apparent error in shop work which prevents the assembling and fitting of the mating parts by the proper use of drifts, shall be investigated immediately.
As all work is rigidly inspected at the fabrication shop before dispatch, these difficulties should not arise and the cause could possibly be due to the use of incorrect components. It is usually important that parts be correctly handed. Should errors still persist, the matter shall be immediately reported to the Engineer who will decide what action is to be taken.

2.5.43.2 Inspection, Testing & Marking

All components shall be offered for inspection prior to painting. All approved components shall be stamped defect free, painted as per specifications prior to dispatch to bridge site.
On final finishing of each component, it shall be marked distinctly with paint with shipping mark for guidance, during assembly of component.

2.5.43.3 Stud shear connectors shall be subjected to the following tests:

The appearance test and test to check the fixing of shear studs shall be as per RDSO drawings No RDSO/B-11757/2R and RDSO/B-11756/2R.

2.5.44 Transports from Workshop & Stacking at Site

All items fabricated in the workshop shall be marked and packaged with accompanying package list. The items after fabrication shall be transported by contractor to site by Rail/Road in a manner as to cause no damage to the components. Contractor shall be liable for all

losses and damages in transit for the materials consigned by him till materials are erected and work completed and taken over by the Engineer. Insurance against loss or damage in transit, if any, shall be the responsibility of the contractor.

After identification & correct marking, all components of each girder shall be dismantled & similar components shall be grouped together & labelled; bolts and plates of each size shall be packed separately, after approval by the Engineer.

The packages shall be of such size by length & weight that they are safely transportable by Rail/Road. The components shall be provided with necessary packing to avoid damage to painting & members in transit.

Dimensions for transport shall be as per standard schedules.

2.5.45 Assembly at site

2.5.45.1 Holes

After drilling holes in temporary tack assembled components, the components shall be taken apart after match marking and all burrs left by drill and sharp edges of all holes shall be removed by spot grinding to ensure full contact when assembled.

Assembly fixture shall be used to build components for turned bolt connection. These connections will help realize correct position of member and matching of coaxial holes in opposite members besides true alignment and level.

After assembly, all blank holes shall be checked with plug gauge of diameter 0.8mm less than hole diameter, to check fair matching of holes before riveting / bolting.

2.5.45.2 Drifts

Drifts as per IRS specifications may be used for drawing light members into position, but their use on heavy members should be restricted to securing them in their correct position. In no case shall drifting be allowed to such an extent that holes are distorted. Drifting to enlarge unfaired holes is prohibited.

2.5.45.3 Making of joints

Cleaning of permanent contact surfaces:- Surfaces which will have permanent contact shall be removed of paints and mill scale down to bare metal, clean and dried and immediately a coating of zinc chrome red oxide priming to IS:2074 shall be applied. Care shall be taken to see that all burrs are removed and no surface defects exist before the parts are assembled.

2.5.45.3.1 Reaming

No reaming shall be undertaken without the written authority of Engineer or his authorized representative except for under drilled holes meant for turned bolts. The contractor shall supply special bolts to fill reamed hole, where reaming is approved. Record of all such variations shall be kept. However, these provisions should not apply for under drilled holes meant for turned bolts. Copies of all correspondence pertaining to the recourse of reaming and the use of oversize bolts shall be sent by the contractor for information to Engineer.

2.5.45.3.2 Service Bolts & Drifts

Joints shall normally be made by filling not less than 50% of the holes with service bolts and barrel drifts in the ratio of four to one. The service bolts are to be fully tightened up as soon as the joint is assembled.

2.5.45.3.3 In cases where the joints have to withstand stresses arising from special methods of erection, provision is to be made to take the whole stress that will or may occur. Cylindrical drifts and turned bolts shall be used to withstand such stresses and no reliance is to be placed on service bolts for this purpose. Up to a maximum of 40 percent of the holes of each member of the joint are to be filled with drifts and balance of strength required is to be attained with turned bolts. The position and number of the drifts and bolts will be decided by Engineer.

2.5.45.4 Painting of Joints

All surfaces, which are in permanent contact, shall be thoroughly cleaned down to the bare metal, to remove mill scale, grease etc. They shall be painted immediately before assembly with one coat of suitable primer and raw linseed oil freshly ground and the surface prepared for painting as per painting specification at Clause 2.5.38.

2.5.46 Assembly and Launching

The launching of girders shall be done as per approved drawings. For this purpose, the contractor shall submit in triplicate, detailed launching schemes of all the girders including design calculations, safety procedures and method statement with such plans, sketches and other details as may be necessary to determine the suitability and adequacy of the schemes proposed. The scheme will be checked by RITES Ltd. The methods adopted shall not, under any circumstances, cause the stresses in various members of girder spans to exceed permissible and safe limits at any stage of launching. One copy duly approved by the Engineer shall be returned to the contractor.

For the Engineer's use and record, the contractor shall supply free of charge, four sets of prints of approved detailed drawings of assembly and launching schemes on strong paper with back of linen for use at site and one set of neatly executed tracings.

The launching system & procedure shown on enclosed drawings are purely indicative of the method proposed for launching for which the permanent members of the girders are designed. The contractor shall provide full structural details of the temporary members and their connections to the girder, along with necessary design calculations not only justifying member's sizes but also for the entire launching system adopted. Contractor will be responsible for getting approval of launching scheme submitted by him from the Engineer.

In order to ensure perfect fit of the temporary components, holes may be carefully drilled for the connecting members in between the girders in situ and T & F High tension grip bolts used.

The launching system shall be test tried if directed by the Engineer and no separate payment for this shall be made.

Nothing extra will be paid to the contractor for adopting any scheme for launching. All temporary members shall be removed after launching and may be taken back by the contractor. Erection gussets provided for connecting the members may be cut and edges ground as required by the Engineer.

2.5.47 Field Bolts, Nuts and Service Accessories

2.5.47.1 The work is to include supply of all units, bolts, nuts, washers etc. required to complete erection at site with an allowance for wastage etc. 12.5% of the net number of field bolts and washers required subject to a minimum number of five in each item.

2.5.47.2 The Contractor shall be responsible for supplying site rivets/bolts of approved length. The

length of such bolts shall be verified by snapping a few bolts of each length in the presence of the Engineer.

2.5.47.3 Black hexagonal bolts (Service bolts) with nuts and ordinary platter's washers and drifts for use in the erection of the work shall also be supplied at 60% (45% bolts and 15% drifts) of the number of field bolts per span in each size (this includes wastage).

2.5.48 Temporary Strengthening

The launching arrangement may include fabrication of launching nose or restraining girders, sway restraining devices such as sway ropes, restraining cables etc. the supply and fixing of members for temporary strengthening of girder members to take care of erection stresses and strains and other relevant components for satisfactory and successful completion of the defined scope of work. Erection stresses must be kept within safe and permissible limits at every stage of erection.

The contractor has to make arrangements at his own cost for the steel for temporary arrangements including sway restraining devices for launching and temporary strengthening of girder, as may be required for the launching operations. The rate quoted should take into account these factors as nothing extra shall be paid.

2.5.49 Inspection and Rectification

During erection of girders, the contractor shall provide all facilities and permit the Engineer to inspect the field assembly, site bolting and erection of spans.

After inspection by the Engineer, the contractor shall identify cause of any defect, imperfection and/or fault noticed during such inspection and initiate corrective action as per the direction of the Engineer. All defects, imperfections of faults for which the contractor is liable under the contract, shall be made good by the contractor to Engineer' satisfaction and the cost of identifying and rectifying such defects, imperfection or faults shall be borne by the contractor.

A neat casting bearing the name of the contractor, the place and date of manufacture, the contact number and the standard of loading to be specified by the Engineer shall be bolted conspicuously on all girders. The drawing of the name plate shall be approved by the Engineer.

2.5.50 Erection & Equipment:

2.5.50.1 The Contractor shall provide at his/her own cost all tools, machinery, equipment and erection material necessary for the expeditious execution of the work and shall erect the structural steel and iron work, in every respect as covered by the contract and in accordance with the drawings and specifications.

2.5.50.2 If any labour, material, plant staging haulage and storage facilities are to be provided by the Engineer, details of such items and the conditions under which these are to be supplied shall be clearly specified in the contract agreements. In the absence of any such provisions in the agreement, the Contractor shall make his/her own arrangement for such items.

2.5.50.3 Before starting the work, the Contractor shall advise the Engineer fully as to the method he/she proposes to follow and the amount and character of equipment he/she proposes to use, which shall be subjected to the approval of the Engineer. The approval of the Engineer shall not be considered as relieving the Contractor of the responsibility for the safety of his/her method or equipment or from carrying the work in full accordance with the drawings and specifications.

2.5.50.4 All temporary work shall be properly designed and substantially constructed for the loads, which it will be called upon to support. Adequate allowance and provision of a lateral forces and wind loads shall be made according to local conditions and ensure that support shall not settle during erection.

2.5.50.5 Careful and periodical inspection of plants shall be made by the Contractor to ensure that all tackle, ropes, chains and other important lifting gear and machinery are in good order and fit for service and well up to the capacity for which they are required.

2.5.50.6 When chains are used for lashing, care must be taken to protect the edges of members to avoid the marking and distortion otherwise caused.

2.5.50.7 Span erected upon staging shall be supported upon suitable blocks, which shall ensure that the girders shall be at the correct elevation and alignment when completed. If other methods of erection be adopted where staging in situ is not employed, special means shall be used to ensure this.

2.5.50.8 The method used for lifting and slinging flexible members shall be brought to the notice of the Engineer and shall be subject to his/her approval.

2.5.50.9 Temporary bracing shall be provided to take care of stresses from erection equipment or other loads carried during erection.

2.5.51 ADDITIONAL SPECIAL CONDITIONS:

2.5.51.1 Land:

DFCCIL will at its discretion, and, if available, arrange land free for use for contractor's office at sites, field workshop, stores, assembly and erection yard. Land required by the contractor for labour or staff colony or other purpose will have to be arranged by him at his own cost.

2.5.52.2 Further Drawing and Instructions:

(i) CPM, DFCCIL shall have full power to make and issue further drawings or instructions or direction from time to time as may appear necessary and proper to the contractor for efficient construction, completion and maintenance of the works . The contractor shall be bound by the same as fully as be if they had been mentioned or referred to in the contract, and the contractor shall not be entitled to any extra payment in respect of any work or materials shown or directed to be done supplied by such further drawings or instructions required for completion of unless the CPM, DFCCIL have given an extra order for the same in writing.

(ii) The tenderer's rate should provide for cutting M. S. Plates for making out M. S. Flats from plates, in case M. S. Flats are not available, No extra payment for such cutting and grinding that may be necessary for converting M. S. Plates to Flats will be admissible.

(iii) If the works are required to be done in Railway Yards and Tracks are to be crossed, the tenderer shall inspect the site and make himself thoroughly acquainted with site condition and quote rate considering these aspects.

(iv) The work shall have to be done in such a manner that the normal working of the Railway within the railway yard does not get disturbed. No material/temporary structures should be kept adjacent to the running track which may infringe rail traffic. The contractor shall take

necessary precaution to prevent/cause damage to the Railway property & staff during the execution of the work.

2.5.52.3 Commencement of the Erection Work at site:

The contractor shall commence the erection work when and as soon as, but not until, he receives instructions from Engineer to do so. On such order being given, possession of site/authority shall be given to the contractor of such portion or portions of the site as the Engineer may determine.

2.5.52.4 Contractor to Study Drawing & Specification etc. and His Liability:

The contractor shall be responsible for close scrutiny of the approved drawings supplied by the DFCCIL, For any discrepancies, error or omission in the drawings or other particulars indicated therein, the contractor shall approach the DFCCIL immediately for rectification of indicated therein, the contractor shall approach the DFCCIL immediately for rectification of such discrepancies, errors and omission. If any dimension/figure/features etc. on approved drawings or plans differ from those drawings or plans issued to the contractors at the time of calling the tender, the dimensions as figured upon the approved drawings or plans shall be taken as correct.

2.5.52.5 Contractor to Submit His Time Table:

The contractor shall submit a monthly progress of work done during the month by the 4th day of the following month. He will also give the programme of coming month by 25th of each month. The programme will be subject to alteration at the discretion of the DFCCIL officials.

2.5.52.6 Any Doubted Points to be referred to the CPM/CGM,DFCCIL:

Should there be any doubt or obscurity as to anything to be done or not to be done by the contractor or as to these instructions or as to any matter or thing, the contractor must set forth such doubt or obscurity in writing and submit the same to CPM, DFCCIL. Only such reply as the said CPM, DFCCIL may be in writing given shall be taken as the authoritative interpretation of the point in doubt or obscurity.

2.5.52.7 Contractor'(s) Liability:

Any fitting, accessory or apparatus which may not have been mentioned in this specification or the drawings, but which are usual or necessary in the execution of such work, are to be provided by the Contractor without extra payment. The whole work must be completed in all details, whether mentioned in this specification or not, with the exception of such work as has been specified in the schedule of items to be separately provided for in the Contract.

Notwithstanding the specifications and conditions stated in the contract, the contractor shall keep the Engineer/ Employer authority 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 all standards and specifications.

2.5.52.8 DFCCIL desires that successful contractor should establish (at his own cost) the fabrication workshop near the site only for close monitoring of all the quality aspects of this contract work. Contractor's request for establishing workshop/using workshop proposed/located away from the bridge site shall require prior approval.

2.5.52.9 Contractor shall establish fully equipped laboratory for all the tests required on materials/processes/products as per provisions of the contract, Specifications and the direction/approval of the Engineer. Costs of these are deemed to be included in the quoted

rates. Prior approval of the Engineer shall be obtained for non installation of such testing equipments which can not be installed in normal course due to any reason. However, Engineer's decision (for installation and non-installation) in this regard shall be final binding and conclusive.

2.5.52.10 Site Facilities by the Contractor:

Contractor shall provide office / site facilities at the bridge site / other locations for ensuring smooth and efficient communication and work execution. Cost of these facilities deemed to be included in the quoted rates and nothing extra shall be paid for this item.

(i) Contractor shall supply round the clock electricity in site offices of DFCCIL located at the bridge during the entire contract work. Contractor shall also maintain the electric fittings/wirings/plants of both the offices in the good condition.

(ii) To provide proper communication the contractor shall (at his own cost) establish inter office communication system between DFCCIL office, fabrication workshops and contractor's offices at site. Adequate number of intercom / telephone/ mobile sets or are similar suitable equipments as decided/approved by Engineer fully communicable shall be established in each of the above fabrication shops & at site of bridge work. The entire expenditure incidental to running and maintenance of above shall be borne by the contractor within quoted rates.

(iii) Contractor shall (at his own cost) depute / nominate safety officers(s) for supervising safety aspects of all works/process including enabling arrangements for execution and inspection of the work. Safety systems/arrangements should be made for each activity of fabrication/erection and its inspection and same should be certified by nominated safety officer. Special care/arrangements are required to be made for supervising the erection/launching process of such high girders and concreting in road deck: arrangements should facilitate satisfactory and fearless inspection of each activity of launching / erection.

2.5.52.11 Declaration of designed fabrication/assembly yard as a part of site:

DFCCIL may issue necessary declaration on specific request of the contractor subject in the condition that the workshop area are earmarked exclusively for fabrication of girder components for this bridge with separate entry/exit arrangements. This is with further stipulation that such an arrangement should be acceptable to excise department by way of a no objection certificate. Necessary follow up with Excise Department will be solely the contractor's responsibility. In the event of excise department not agreeing to such an arrangement , the contractor shall not have any claims whatsoever, and shall pay excise tax and other extant taxes as per extant rules within quoted rates and nothing extra would be payable to them on this account.

2.5.53 METHOD OF MEASUREMENT FOR PAYMENT

2.5.53.1 Measurement

For the purpose of payment, quoted rates apply to the weights of structural steel work calculated from final working drawings based on theoretical weights given in the producer's hand books / IRUSS (W &M),2010-Volume-I and using minimum square overall dimensions, no deductions being made for skew cuts, holes or notches. Each gusset shall be measured as equivalent to the dimension of the smallest enclosing rectangle. The rates items quoted by the tenderer shall include all wastage. **The wastage of steel in the form of skew cuts etc shall be the property of the contractor.**

Payment shall be made on the weight to be calculated in the accordance with the nominal weight of the sections as specified on the drawings. No deduction for holes and no addition for rivets/botls/welds etc shall be made.

The drawing office dispatch lists (D.O.D.Ls) when prepared according to procedure shall be submitted by the contractor to the Engineer for approval.

The payment for steel work as per item in the schedule of items shall be released in stages of accepted item rates for quantities executed, as mentioned in the tender schedule. The payment after receipt of material in fabrication shop shall be made on the basis of measurements contained in the supplier's vouchers, if required, these measurements shall be further verified by the representative of Engineer in charge by measuring dimensions/sizes of the sections and multiplying the same by standard weight. Sampling for actual weight of the sections shall also be done by him as per procedure and frequency prescribed by Engineer.

The payment for complete metallizing / painting of all components of girders including all accessories, painting of contact surface etc including all labour and material, tools and plants, machinery required for all operations of work is included in the accepted rates of item in the schedule. Nothing extra shall be paid.

In the event of a dispute arising as to a portion of steel work, weightment shall be made in the presence of the Engineer.

No separate payment shall be made for the field bolts, nuts and service accessories for temporary works.

The cost of temporary erection and testing at the Contractor's workshop, marking, packing and delivery at the site of work is to be included in the price quoted on the tender.

Rate include fabrication of all the types of battens, bracings, ties, stiffeners, packing, diaphragms, shop bolts / welding, T&F bolts, drifts, shop welds, templates, jigs, fixtures, back up supports, accessories, transporting various components from fabrication shop to site including loading, unloading, lift and taxes complete including assembly of girders .

Rate of girder item includes assembling of temporary support for side slewing, raising of girders to the bed block level, providing sliding arrangements and slewing the girder in position and lowering of girder on bearings.

Grouting of holes with epoxy based compounds in the bed block for fixing of HD bolts/anchor pins of bed plates as directed by Engineer are included in the bearing rates.

Rate of girder item includes the Assembling, bolting with contractor's own material, erection, launching, lowering, aligning and placing at exact position as per approved scheme of steel plate girder for required span in proper level and alignment, grip bolts and with all necessary works like making holes.

The rate of girder item will inclusive of supplying /erection and dismantling of staging, scaffolding and other temporary arrangement required for assembling, erection, launching and lowering of the girder.

The rate shall be also inclusive of cold straightening of deformed bent girder parts before the assembling including contractor's all labour, materials T & P, testing etc. complete.

2.5.54 BEARING

POT and POT-PTFE bearings is applicable here as per RDSO drawings No RDSO/B-11757/6R for 24 m and RDSO/B-11755/6R2 for 30 m composite girder respectively. Contractor shall arrange these bearings as per these drawings. Its specification shall be referred to para 22.4 of Indian Railway Unified Standard Specifications (Works and Materials), Volume - II, 2010.

The bearing sets will be paid separately as per relevant item, but it includes the cost of H. D. Bolts also.

2.5.55 DEFLECTION TEST:

The deflection test shall be carried out as per additional specifications. Load testing will be paid separately as per relevant item.

ADDITIONAL TECHNICAL SPECIFICATION

ADDITIONAL TECHNICAL SPECIFICATIONS

3.1 STUD SHEAR CONNECTOR

3.1.1 Material:-

The stud shear connector and ceramic ferrules shall conform to type SD1/UF as per BS EN ISO 13918-2008. The diameter of ceramic ferrule D 7 as per Figure 13/Table 18 of BS EN ISO 13918 shall be 26. Mechanical properties of stud shear connectors shall be as per ISO 6892/BS EN ISO 13918–2008. Shape of tip of stud shear connectors may be chosen by manufacturer. The stud tip shall be supplied with flux in the form of press fitted aluminium ball or Aluminium spray coating

3.1.2 Welding:-

The welding of stud shear connectors shall be done by “Drawn arc stud welding with ceramic ferrule” Technique. The stud and the surface to which studs are welded shall be free from scale, moisture, rust and other foreign material. The stud base shall not be painted, galvanized or cadmium plated prior to welding. Welding shall not be carried out when temperature is below 10 degrees Celsius or surface is wet or during periods of strong winds unless the work and the welder are adequately protected. The welds shall be visually free from cracks and shall be capable of developing at least the nominal ultimate strength of studs. The procedural trial for welding the stud shall be carried out when specified by the Engineer

3.1.3 Testing:-

(a) Appearance test

1. The weld to a stud shear connector should form a complete collar around the shank and free from cracks, excessive splashes of weld material, free from injurious laps fins, seams, twist, bends or other injurious defects.
2. Weld material should have a `Steel Blue’ appearance.

(b) Test to check the fixing of shear studs
All studs need to be checked by a ring test.

1. Ring Test : Involves striking the side of the head of the stud with a 2 kg hammer. A Ringing tone achieved after striking indicates good fusion whereas dull tone indicates a lack of fusion (BS 5400 – 6).
2. Bend Test : Test requires the head of a stud to be displaced laterally by approximate 25% of its height using a 6 kg hammer.

- The weld should then be checked for signs of cracking or lack of fusion
- Stud should not be bent back as this is likely to damage the weld.
- The testing rate should be 1 in 50 (BG 5400 – 6).

3.1.4 Measurements:- The work shall be enumerated. It's unit is as detailed in tender Schedule-A.

3.1.5 Rates:- The rate shall include the cost of material, labour, equipments, tools and plants, etc. complete required for all operations as described in Schedule-A.

3.2 Load Testing of Bridge

3.2.1 General

These guidelines cover testing of superstructures, excluding arches for evaluation of their flexural capacity. Testing for shear capacity is not considered. This test is not intended to assess ultimate load carrying capacity of bridge superstructure.

3.2.2 Test Procedures – Method of Loading

The method of loading should be such as to either simulate the specific class of vehicle or induce in the member(s) the calculated forces, viz., the bending moments at critical sections. The test loads may be in the form of static loads on wheel/ track imprints of the specific class of vehicle.

3.2.3 Static Loads

3.2.4 Simulation of the specific IRC vehicle

The load effect on a span can be produced by building up pre weighed units on loading imprints spaced as per codal provisions. The imprints are built either with brick masonry or concrete and rolled steel sections placed across pairs of imprints, so that platforms could be built on a group of four imprints for placement of pre weighed units. The area of each platform depends on the magnitude of the load and unit weight of individual unit. A pre weighed unit normally comprises sand or soil filled gunny bags, concrete cubes, bricks etc., which can be carried manually. Otherwise, large concrete blocks, containers of water or (stone) ballast or steel ingots could be used if mechanical handling facilities are available to load and unload them from test vehicles. Fig. below shows a scheme for building up 2 lanes of IRC Class A loading on the carriageway of a bridge. The loads are placed eccentrically on the carriageway of a bridge in such a way that maximum bending moment is produced in any longitudinal.

ssss

3.2.5 Other types of static loads

Any configuration which produces the design forces (load effects) in the member(s) could be adopted, for instance uniformly distributed load. Any of the appropriate methods of load distribution between the girders can be adopted in arriving at the test load and its configuration on the span. But the method of distribution of loads should be the same as adopted in the approved design. However, where the approved designs are not available the owner of the bridge should specify the appropriate method of load distribution. In the case of multiple girders, it is possible that the design moments are simultaneously induced in more than one girder. It may well happen that the magnitude of the test load on the span is greater than that of the design IRC vehicle but the forces induced in any member should be always equal to the specified design force of the load test.

3.2.6 Loading and Unloading Sequence

3.2.6.1 The test load shall be applied in stages so that timely action, such as stopping the test, can be taken if any untoward distress is observed at any stage. In most cases, the design live load effect would be equal to or less than that due to dead load. The dead load is already acting the test load it some specified multiple of live load more than one. The suggested stages of test load placement are 30 percent, 50 percent, 70 percent, 80 percent, 90 percent and 100 percent. Unloading should also be in the same stages. The next incremental loading should be added only after the deflections under the previous load have stabilized and all the stipulated observations are completed.

3.2.6.2 The selection of first stage of loading depends on the general condition of a bridge and the load carrying capacity theoretically assessed. It is advisable to monitor the appearance and widening of flexural cracks at every stage of loading, so as to decide about placement of next incremental load. It is expected that the load deflection characteristics at every increment are linear and any abnormal behavior is reflected in the load v/s deflection data. It the deflection observed exceeds the limit prescribed in the code the further loading shall be stopped. Subsequent actions shall be taken in consultation with appropriate authorities. Occasionally, crackling sounds at the locations of expansion joints are heard when the rotation capacity is exceeded, particularly, in balanced cantilever bridges. Spalling of delaminated concrete is also possible during load tests.

3.2.7 Preparatory Work

- All visual defects should be measured, mapped and plotted.
- It should be ensured that bearings are functional.

- Expansion gaps, joints should be cleared of all debris.
- It will be useful to give the surface of the superstructure a coat of white wash, so that appearance of cracks becomes immediately perceptible.

3.2.8 Precautions

- Staging should be stable and safe.
- Staging for instruments and that for observers should be quite independent.
- Staging for instruments should be rigid.
- Due to temperature change, the superstructure may tend to hog or sag; therefore, it should be ensured that when this occurs, contact with the spindle of the dial gauge is not lost. Spindle extensions should be fixed to take care of this.

During the 24 hour retention period of built up load, care shall be taken to cover the pre weighed units with tarpaulin, so that rain or strong winds do not affect the stacking on the platforms.

3.2.9 Observations

The following should be observe, measured and recorded at regular intervals of one hour over a period of 24 hours:

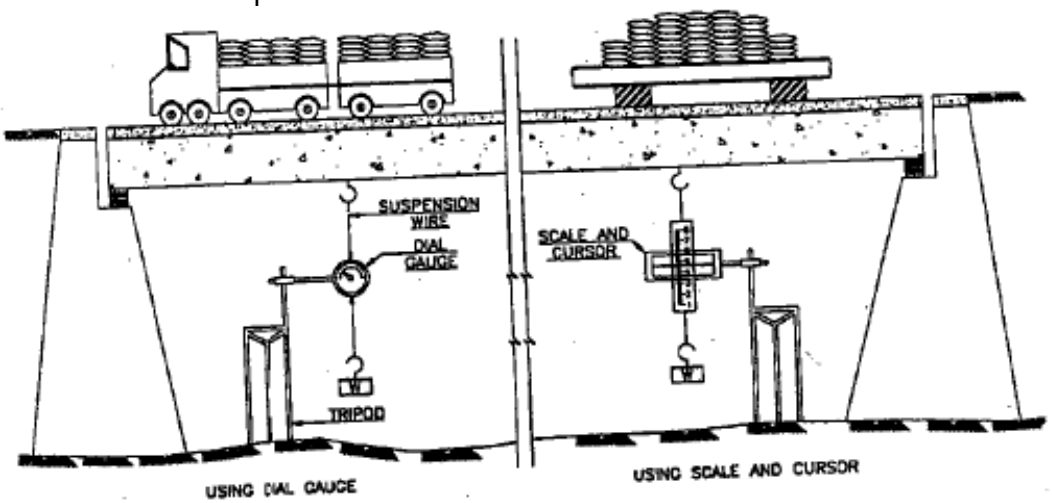
- Deflections at critical sections (for instance for simply supported spans at mid-span and at quarter-span. In box girders, it will be useful to record deflections under each of the external ribs).
- Appearance of cracks and their development, length, width, location, orientation correlated with load.
- Deformation of bearings.
- Ambient temperature and related temperature in the body of the structure.

3.2.10 Measurement of deflections

Deflections could be measured with the following devices:

(a) Dial gauges
(b) Scale and cursor
(c) Deflectometers
(d) Precision level
(e) Water level

The methods (a) to (c) could be used wherever dry bed is available under the span. Otherwise, methods (d) and (e) can be used by using a reference station at the nearby abutment. When girder bridges are subjected to load tests, it is essential to clear debris in the expansion gaps and lubricate steel bearings to permit free translation and rotational movements of the spans.



The deflection measurement can be done by suspension wire method at the required locations using dial gauges (Fig.). In this method trestles or posts 1.5m tall would be

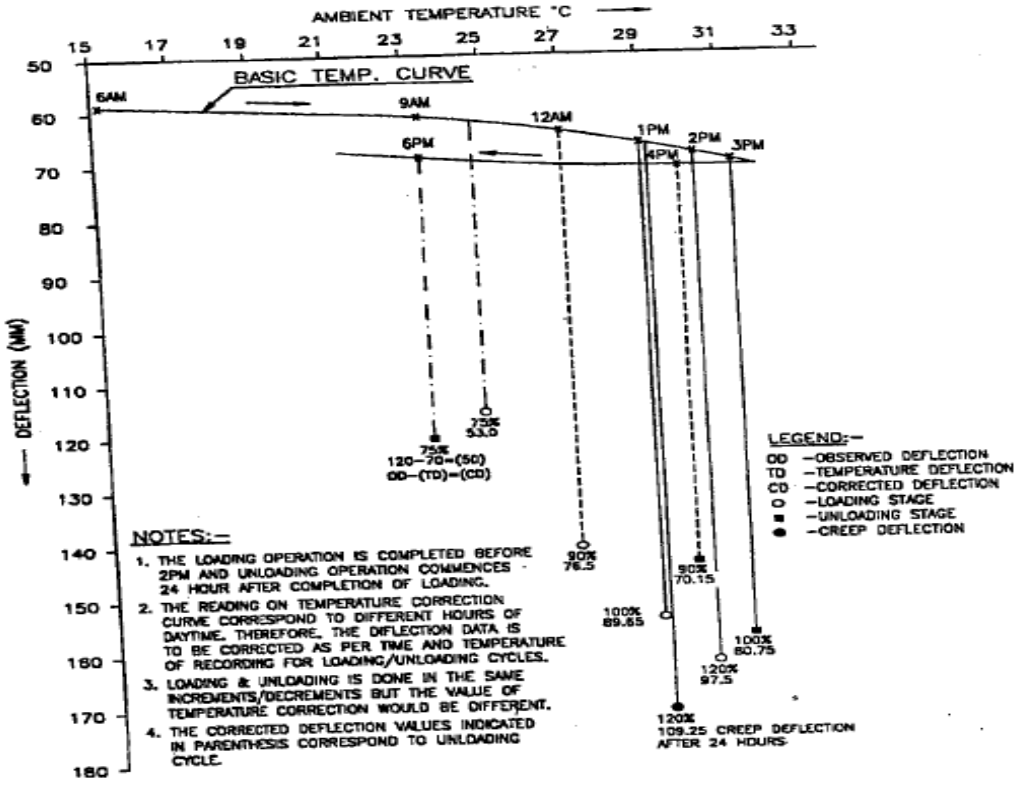
embedded in firm ground and dial gauges of least count 0.01 mm are clamped to them. The spindles of the dial gauges are connected by a pair of adapters in plumb line with a GI or Invar wire. The wire is made taut by attaching a weight at the end. The method could be partly modified by using a (steel) scale and cursor instead of dial gauge, when the order of anticipated deflection exceeds 100mm. Fig. 2 also shown the scale and cursor method for measurement of large defections.

3.2.11 Procedure for Temperature Correction

A set of thermocouples are to be fixed at different locations of deflection measurement for monitoring temperature of the bridge deck. In absence of thermocouples, hand held instruments could be used wherein a probe could be inserted in a preformed hole in concrete surface, for recording temperature. As a last resort, thermometers could also be suspended from trestles used for deflection measurement to measure the shade temperature. The number of thermocouples/thermometers/probes used could be about half the total number of locations for deflection measurement.

The superstructure tends to hog or sag due to variation in ambient temperature and it is necessary to apply correction to the deflection data during static load test. This is so since the duration of loading or unloading operation in static load test could be for 4-5 hours.

For this purpose, the platforms on masonry imprints meant for building up static loads should be placed in respective positions for observing thermal response of the bridge deck prior to load test. The deflection values and ambient temperature data are generally collected from dawn to dusk for two or three consecutive days at 1 hour intervals. The temperature vs. deflection data are collected on these days and a curve drawn for each station (dial gauge location), which is taken as basic curve for temperature correction. Usually the temperature – deflection characteristic would be a best fit obtained from a cluster of readings. The deflection reading at any location and temperature during load test, is super-imposed on the basic curve. The difference between the two values give the true deflection for the location under reference, corresponding to the same temperature. Fig. below shows typical characteristic of thermal response, super imposed on load vs. deflection data during a proof test.



Precaution

The bridge deck temperature gets affected due to variation in humidity and strong winds on the day. Also, the data gathered on sunny and cloudy days would be different, although the ambient temperature is same.

Therefore, to avoid inconsistencies in the data, it is preferable to choose two identical spans, one for load test and the other for temperature – deflection data and should be monitored simultaneously. This approach reduces the total period of load testing by at least two days.

3.2.12 Percentage Recovery of Deflection

The percentage recovery could be calculated for values of deflection. The percentage recovery is calculated at 24 hours after removal of load.

The calculation is done as follows after effecting temperature and/or rotation correction to deflection data:

Initial value (on dial gauge) … R1
Final value after placement of test load … R2
[Thereafter, measurements are to be taken at regular intervals of one hour].
Value at 24 hours after placement of test load ... R3
Value immediately after removal of test load … R4
[Thereafter, measurement are to be taken at regular intervals of one hour]
Value at 24 hours after removal of test load R5
Total deflection …R3-R1
Total recovery 24 hrs after removal of test load R3-R5
Percentage of recovery of deflection … $\frac{(R3-R5) \times 100}{(R3-R1)}$
24 hrs after removal of test load

3.2.13 Acceptance Criteria

3.2.13.1 The criterion of acceptance is based on recovery of deflection after removal of test load. It is necessary to specify the quantum of applied load, the duration of the load on the span and the percentage recovery of deflection on removal of load.

3.2.13.2 For bridges designed for IRC Standard loadings, criteria for load testing of steel, PSC and RCC superstructures are given in table below :

Table Acceptance Criteria

Sr. No.	Type of Bridges	Live Load Intensity for Testing	Duration of Retention of Test Load (Hrs.)	Minimum percentage recovery of Deflection at 24 hrs after removal of Test Load
1	Reinforced concrete	*	24	75
2	Prestressed concrete	*	24	85
3	Steel	*	24	85
4	Composite	*	24	75

(* 1.0L plus corresponding impact as per IRC Codes)

A general acceptance criterion for the behavior of a structure under test load is that it shall not show “visible evidence of failure” which include appearance of cracks of width more than 0.3mm, spalling or deflections which are excessive and incompatible with safety requirements.

3.4 NON-DESTRUCTIVE INTEGRITY TESTING OF PILE

3.4.1 SCOPE

This specifications covers the methods on non-destructive testing as per IS: 14893 of all types of concrete piles covered in IS 2911 (Part I/Sections 1, 2, 3 and 4).

3.4.2 SITE INFORMATION REQUIRED FOR THE TESTS

The following information is generally required to carry out integrity tests:

(a) Location of site

(b) Pile types including size, material and reinforcement
(c) Layout of piles
(d) Details of pile installation (including construction and driving sequence and rest periods)
(e) Number of piles to be tested;
(f) Subsurface profile/driving details of the piles
(More if variations are noted)
(g) Depth of water table and soil investigation report, if any
(h) Density of concrete; Strength of concrete
(i) Abnormal conditions noted while driving/boring or concreting of piles. The normal daily report produced by the piling site should contain this information. In addition, any other information concerning planning and conducting the tests including relevant past experiences covering similar test(s) in the area, and
(j) Details of test piles(s), if any.

3.4.3 TYPES OF TESTS

Various methods are available for checking the integrity of concrete piles after installation. In the most widely used method, impulses or vibrations are applied to the pile and measurements made of timings and attenuation of reflected signals.

The commonly used sonic methods, vibration methods, sonic logging techniques, etc, have been tried within the last 15-20 years in different parts of the world. However, the methods based on One Dimensional Stress Wave approach known as Sonic Integrity Testing, a Low Strain Integrity testing or Sonic Echo Testing have been used successfully in various parts of the world. The method is simple and quick enabling dozens of piles to be examined in a single working day without much interference in site activities.

The work carried out on sonic integrity testing of pile in the country has shown its efficiency; in assessing the structural quality of piles and therefore it is appropriate to frame in this code the salient features of this method.

3.4.3.1 The Low Strain Integrity Testing

This is a system of assessing the integrity of piles by the use of low stress wave imparted to the pile shaft and is also known as Sonic Integrity or Sonic Echo Test..A small metal/hard rubber hammer is used to produce a light tap on top of the pile. The shock travelling down the length of the pile is reflected back from the toe of the pile and recorded through a suitable transducer/accelerometer (also held on top of the pile close to the point of impact) in a computer disk or diskette for subsequent analysis.

The primary shock wave which travels down the length of the shaft is reflected from the toe by the change in density between the concrete and sub-strata. However, if the pile has any imperfections or discontinuities within its length these will set up secondary reflections which will be added to the return signal. *(See* Fig.).

By a careful analysis of the captured signal and knowledge of the conditions of the ground, age of concrete, etc, a picture of the locations of such problems can be built up. The reflected stress wave can be monitored using either processing technique; the observed signals are amplified and converted into digital display as velocity versus length or frequency versus mobility records, providing information on structural integrity of piles.

The stress wave velocity and approximate pile lengths are provided as input for the integrity testing. The stress wave velocity is dependent on the Young's modulus and mass density of pile concrete. This value generally lies between 3000-4000 meter per second depending on the grade of concrete used (M15-M25).

3.4.3.2 Normally more than one recording of signals is done until repeatability of signals is achieved. If necessary, averaging of signals is also done to achieve more informative signals. In a suspected pile the test should be repeated at more than one location on top of the pile.

3.4.3.3 The tests shall be conducted on piles whose length is correctly recorded or on test piles where available, to determine the value of stress wave velocity and characteristic or reference signal for comparing the signals for testing subsequent piles.

3.4.3.4 The method of testing involves high skill and use of computerized equipment. Therefore, the

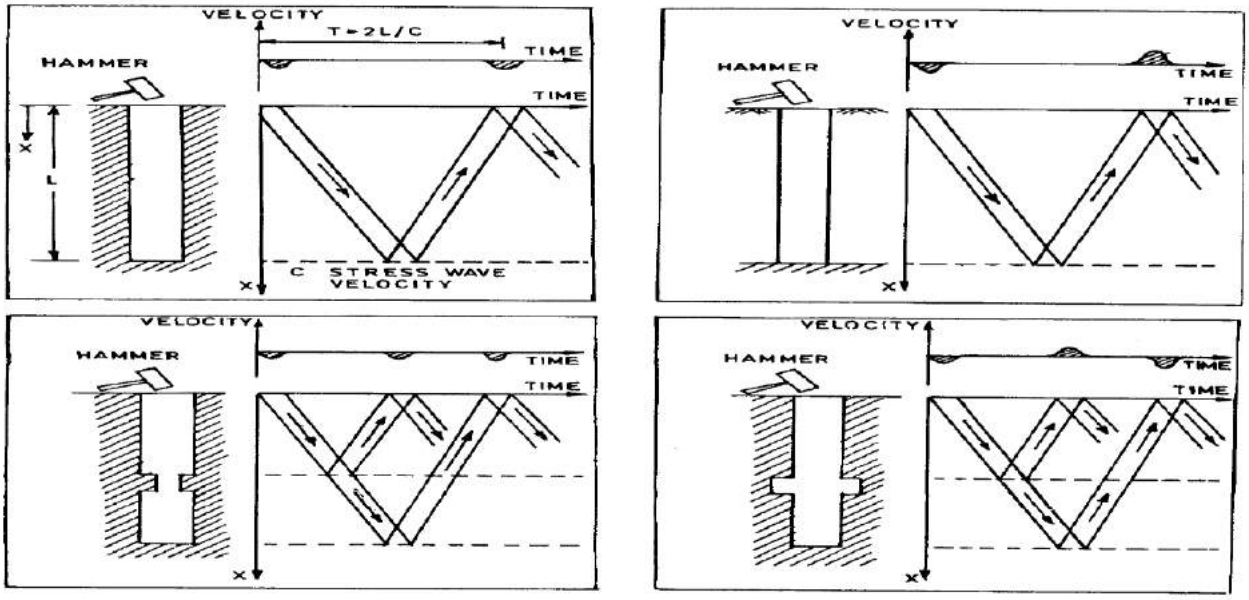
tests should be performed and interpreted by trained and experienced personnel..

3.4.4 Data and Reporting

(i) The assessment of structural integrity is based on two equally important aspects:
   a) Quality of signals, and
   b) Accurate analysis and interpretation of signal.

(ii) Piles requiring remedial measures should be so marked immediately on completion of the field integrity testing, and rectification, measures selected.

(iii) The final report should include signals of each integrity test and reflect on the structural condition of piles.



3.4.5 GENERAL REQUIREMENTS OF THE TESTS

(i) Piles shall be trimmed to cut off level or sound concrete level before the test with all laitance removed. No pile cap blindage work should be undertaken prior to the test.

(ii) The area surrounding the pile should be free from standing water and kept dewatered during the tests.

(iii) The pile head should be accessible.

(iv) Testing should be free of work likely to cause disturbance.

(v) The cast-in-situ piles should not be tested normally before 14 days of casting.

(vi) The test piles, if available at site, can be used to determine the pulse velocity and characteristic or reference signal generated. Where no test pile is available information can be obtained from cast piles whose length is accurately recorded.

3.4.6 LIMITATIONS OF NDT METHODS

(i) Non-Destructive Testing of piles does not provide the load carrying capacity of piles.

(ii) It does not provide information regarding verticality or displacement in position of piles.

(iii) Minor deficiencies like local loss of cover, small intrusions or type of conditions of materials at the base of piles are undetectable. Integrity testing may not identify all imperfections, but it can be useful tool in identifying major defects within the effective lengths. The test may identify minor impedance variations that may not affect the bearing capacity of piles. In such cases, the Engineer should use judgment as to the acceptability of these piles considering other factors such as load redistribution to adjacent pile, load transfer to the soil above the defect, applied safety factors and structural load requirements.

(iv) Based on the latest information available, the limitations relating to the depths up

to which the integrity tests can be carried on piles depends on the surrounding strata and damping within the concrete.

(v) The present experience of Non-Destructive Testing of piles is up to a diameter of 1500 mm.

(vi) Soil stiffness or founding on rock of similar density as the pile will attenuate the signals such that there will be little or no toe reflection.

(vii) The low strain integrity method is applicable to cast – in – situ concrete bored and driven piles. Conclusive results are rarely obtained in case of segmented precast reinforced concrete driven piles or precast piles in pre bored holes.

3.4.7 METHOD OF MEASUREMENTS: It will be measured as detailed in tender schedule..

3.4.8 PAYMENTS: The rate includes cost of all materials, labour, equipment & operations required to do this test.

4.0 Works for precast RCC Box segments and placing by Cut & Cover or providing Service Span Girder Technology for : (The Specification related to RUB excepted and deleted in this Para) if required.

4.1 The dimensions given wherever in tender document 1 x 4.5 Meter X 2.50 Meter are internal only and external dimensions are to be designed by the tenderer

4.2 Contractor will have to collect the site details required for design of cast in situ and precast segmental RCC box, Casting yard, wing /return walls, approaches etc. all activities to complete are covered in this contract.

4.3 Design and development of structural drawing of cast in situ and precast segmental RCC box, Casting Yard, wing/return walls , approaches etc as per approved General Arrangement Drawings (GAD) of the shall be got done by the contractor from a designer/consultant. Design calculation in 6 copies and original structural drawings tracing on A0 size along with 8 photo prints and two tracing copies shall be submitted to this office within Four weeks from the date of issue of acceptance letter duly proof checked by IIT/NIT/Any other approved consultant nominated by DFCCIL and Forwarding & Obtaining approval from North Western Railway Head Quarter, Ajmer within subsequent two weeks time. All design /drawing should be submitted at one time. Contractor should note that no separate payment will be made for design and drawing, hence rate should be quoted considering this aspect. The contractor will also submit 8 copies of each drawing in A2 size for use at site & reference. Execution of work shall be done as per approved drawing and schedule of works.

4.4 Tenderer shall prepare and submit a schedule network in the form of PERT or CPM CHART or any other approved form of scheduling network to serve as a guide line for carrying out the various items of work, so as to complete the work in stipulated time.

4.5 Necessary & accurate survey shall be carried out at the site of work with Employer's/ Railway's representative with Total station & leveling instruments for collection of all data for preparation of structural design/drawing of cast in situ and deciding precast segment of RCC box, casting yard, wing/return walls, Approaches etc. that all covered in this contract including reconfirmation of subsoil data for obtaining soil characteristics required for designing the structure at the proposed location. The loading has to be taken as MBG loading of 1987 and design has to be done as per codal provisions including IRS codes.

4.6 The detail structural drawing/design of cast in situ as well precast segmental RCC box and wing/return walls will be prepared by the contractor at his own cost and got approved at no extra cost to employer. No work shall be carried out within Railway Limits unless and until all drawing are approved by railways with all design calculations, clarifications required are furnished and got approved. The structural design/drawings and construction for precast Segments and it's placing arrangement in notified block period including dismantling and linking of railway track shall be done by contractor for carrying out the work.

4.7 Procurement of plants, Transportation and Placing equipments, etc. shall be done by contractor at his on cost. The placing of precast RCC box segments with suitable arrangement has to be made by contractor such to place in position and it's jointing shall be completed within block period including track linking complete. The tenderer shall submit necessary test certificate at his own cost for material as well P&E to be used in the construction for lifting & placing the precast box segments to form the opening under the railway track in running traffic conditions. Maximum allowable deviations at any time from the theoretical alignment

will be limited to 200mm horizontally and 100mm vertically. Any deviation beyond this tolerance will have to be rectified by the Tenderer at their own cost. The necessary scheme for placing segmental boxes shall have to be developed by the contractor and has to be approved by Engineer / Railways.

4.8 Grouting of all joints after completion of placing with approved epoxy compound so as to make them water tight with no leakage at no extra payment. To arrange the removal of all existing & leftover underground , on ground and overhead utilities/obstruction within railway limits, approaches & entire construction area related to work, which are likely to obstruct the work of Construction has to be carried out before & during Construction operations, by the contractor. The actual cost will be reimbursed under relevant BOQ item upon production of proofs and receipts. During the box placing under the existing railway track, contractor shall ensure that there should be no disturbance to track after completion of placing. The track has to be dismantled and linked within same notified block period. To achieve this , all suitable arrangements of Required Man power & P&M e.g. Cranes of suitable capacity/ epoxy paint at top of box shall be arranged well in advance by contractor and that all is inclusive in the quoted rates. If the track gets disturbed during the box segments placing operations, should be rectified by contractor under Railway's supervision & to their satisfaction at no extra cost to employer. Necessary provision on the slab top of box segments for draining out percolated water shall be made at no extra payment.

4.9 The removal / Disposal of earth & waste/scrap material after the excavation /execution shall be done by the contractor as per the instruction of Engineer.

4.10 Payment will be made only for approved finished section of concrete. Poorly executed concrete shall have to demolished and repair shall not be allowed to carry out.

The main, temperature and other reinforcement of required quantity as per the approved design and drawing for RCC work has to be fixed in position by the contractor within quoted rates. No extra payment will be made work not mentioned specifically, all temporary staging & construction etc. otherwise required to be carried out by the contractor to complete. The safety of the Work men and Railway track lies with the contractor during the working upto the completion of work, Therefore, the contractor shall take all the precautions and satisfy the Engineer at site to ensure that, at all time the work carried out is ensured in safe conditions.

4.11 All the temporary works, safety arrangements, shall be the property of the contractor and after completion of the work, the contractor can take away the materials after obtaining written consent of the Engineer at the time of clearance of the site. if the contractor doesn't remove within 15 days from a notice by employer, then there will be no right for him to claim towards any of the materials afterwards.

5.0 Stage payment for Pre cast PSC Girder under RUIDP SOR-2013 item 14.18.1 will be as under:-

(a) 40% after casting in casting yard/site of PSC Girder.
(b) 20% after Ist Stage stressing and transported PSC Girders at ROB site.
(c) 40% after launching, stressing & completion of item.

6.0 Stage payment for Pre cast RCC facia Panel under RUIDP SOR-2013 item 14.23 will be as under:-

(a) 45% after casting in casting yard/site of facia Panels.
(b) 55% after placing, erecting and completion of item at ROB.

SPECIAL CONDITIONS FOR SCHEDULE-B(NON-SCHEDULE ITEMS)

1. NS/1: Providing vehicles of SUV category INNOVA/ SCORPIO or equivalent with Driver and POL for requirement of Employer/ client as directed for any single day purpose movements limited to 150 kms per day & 12 hours average duty complete. (No other payment will be admissible except Toll tax and that will be reimbursable separately as per actual receipts).

Special Conditions

1. if any vehicle is asked for any specific day purpose, the contractor shall also arrange the same as desired. The vehicle supplied in category of Innova/ Scorpio or equivalent (AC Model not older than 2019), shall be paid daily rental all inclusive POL, Driver Mobile etc. complete under relevant BOQ item. The contractor shall also to provide well behaved and experienced driver with mobile connection, POL (Fuel & lubricant) & maintain the vehicle in good running condition all times. These Vehicles shall be considered for an average running of 300 kms per day and approximate 12-14 hours of duty for that day.
2. The payment shall be claimed by the contractor along with monthly bill under contract. Any toll charges will be reimbursed as per actual upon production of receipts. In case of any

occasional excess running and/or working hours during any month, nothing extra shall be paid. Providing this vehicle & it's running and maintenance cost is incidental & inclusive in the quoted price for this contract. These facilities are to be provided within one month from date of issue of LOA as and when required by DFC for inspection. This facility will continue till commissioning of ROB and/or as decided by the Engineer. In case services to be provided by the contractor are interrupted/ affected due to any reasons, the Engineer will have a right to set it right at the cost of contractor. Any cost arisen out for the purpose will be recovered from any money due to contractor.

2. NS/2:Providing vehicles of category Bolero/INDIGO/SWIFT or equivalent with Driver and POL for requirement of Employer/ client as directed limited to 3000 kms per month & 12 hours/day average duty complete. (No other payment will be admissible except Toll tax and that will be reimbursable separately as per actual receipts). This item is additional to supply of vehicle mentioned in the tender document anywhere as incidental to the work.

Special Conditions

One SUV vehicles of category Bolero/INDIGO/SWIFT or equivalent (AC Model not older than 2019) for each ROB site, shall be provided and maintained by the contractor for personnel of the Employer at desired locations. The contractor shall also to provide well behaved and experienced driver with mobile connection, POL (Fuel & lubricant) & maintain the vehicle in good running condition all times. Monthly running for this vehicle will be considered average 3000 kms per month and an average 12-14 hours minimum working on all the days of month. In case of any occasional excess running and/or working hours during any month, nothing extra shall be paid. Providing this vehicle & it's running and maintenance cost is incidental & inclusive in the quoted price for this contract. These facilities are to be provided within one month from date of issue of LOA. This facility will continue till commissioning of ROB and/or as decided by the Engineer. In case services to be provided by the contractor are interrupted/ affected due to any reasons, the Engineer will have a right to set it right at the cost of contractor. Any cost arisen out for the purpose will be recovered from any money due to contractor.

Special conditions/specification of NS items for Detailed Design and Drawing

NS/3: Detailed Design and Drawing Preparation Consultancy work for ROB

1. Contractor will execute the work in accordance with the description of item as given in BOQ. Where the BOQ is silent on any aspect, the following & all relevant codes and standards shall be adopted in consultation with the Engineer. For execution contractor has to submit three sets of paper prints along with original tracing for approval. The required drawings & design for ROB & related works as considered necessary by DFCCIL, will be submitted by contractor for approval duly proof checked by IIT/NIT, as approved by DFCCIL and if any type of amendment required by DFCCIL, the same shall be carried out by contractor at their own cost. Nos of revision of drawings may be multiple times as required by DFCCIL for successful completion of work and nothing extra shall be paid for the same. This item shall be paid after completion of work and submission of one set of all the original drawings of work(as built) on double matt tracing film with six sets of coloured paper prints and soft copies of all the drawings/design in Pen Drive/Hard Disc.
2. Following codes and standards shall be applicable for execution of the work:

(a) Indian Road Congress (IRC) Code and Standards;

(ii) Ministry of Road Transport and Highways(MORTH) Specifications;

(iii) RDSO standard specifications for railway works; and

(IV) Codes & Practice from BIS publications.

3. All as applicable to National Highways and Railways shall include policy circulars, guidelines, and special publications, issued in respect thereof by IRC or MoRT&H, as the case may be, from time to time and shall incorporate all amendments and/or modifications to such codes and standards which are available to public 30 days before the submission of offer by the bidder, unless otherwise specified in this Schedule.

4. The term "Ministry of Surface Transport"(MOST) and "Ministry of Road Transport and Highways" (MORTH) shall be considered as synonymous to each other.

5. Where the aforesaid codes, standards and specifications are silent on any aspect, the following standards in. order of preference shall be adopted in consultation with Engineer, unless otherwise specified in this Schedule:

   (a) Bureau of Indian Standards (BIS)

   (b) American Association of State Highway and Transport Officials (AASHTO).

   (c) Geometric Design Standards for Ontario Highways.

   (d) American Society of Testing Materials (ASTM).

   (e) British Standards (BS)

   (f) Suitable specification/standard devised by the Engineer/ Independent Engineer (IE/IC)

6. All materials and specifications for works shall be consistent with IRC/MoRT&H Specifications. Where these are silent, the standards in the same order of preference as shall be used.

7. For items other than road and bridge works, where the specifications are not available, the same shall be finalized by Engineer in consultation with the Independent Engineer (IE/IC).

8. A brief list of IRC/MORT&H codes is provided in Appendix to this schedule.

APPENDIX TO TECHNICAL SPECIFICATIONS & STANDARDS
List of IRC/MORT&H codes and Specifications

A) IRC Codes

IRC 2 -1968	Route marker Signs for National Highways (First Revision)
IRC 3 -1983	Dimensions and weight of Road Design vehicles. (First Revision)
IRC 5 -1998	Standard Specification & Code of Practice for Road Bridges, Section I - General Features of Design (7th Revision)
IRC 6-2000	Standard Specifications & Code of Practice for Road Bridges, Section II -Loads and Stresses (Fourth Revision)
IRC 7 -1971	Recommended Practice for Numbering Bridges and Culverts (First Revision)
IRC 8 -1980	Type Designs for Highway Kilometer Stones (Second Revision
IRC 9 -1972	Traffic Census on non urban roads (First Revision)
IRC 10-1961	Recommended Practice for Borrow pits for Road Embankments Constructed by Manual Operation
IRC 11-1962	Recommended practice for the design and layout of cycle tracks
IRC 12-1983	Recommended Practice for Location and Layout of Roadside Motor- Fuel Filling and Layout of Roadside Motor-Fuel Filling -cum-Service Stations (Second Revision)
IRC 14 -1977	Recommended Practice for 2cm Thick Bitumen and Tar Carpets (Second Revision)
IRC 16 -1989	Specification for Priming of Base Course with Bituminous Primers (First Revision)
IRC 17-1965	Tentative Specification for Single Coat Bituminous Surface Dressing
IRC 18 -2000	Design Criteria for pre-stressed Concrete Road Bridges (Post-Tensioned Concrete)

	(Third revision)
IRC 20-1966	Recommended Practice for Bituminous Penetration Macadam (Full Grout)
IRC 21 -2000	Standard Specifications and Code of Practice for Road Bridges.
Section-III	Cement Concrete (Plain and reinforced) (Third revision)
IRC 22 -1986	Standard Specifications and Code of Practice for Road Bridges. Section-VI Composite Construction (First Revision).
IRC 44 -1976	Tentative guidelines for cement concrete mix design for pavements (for non air entrained and continuously graded concrete) First Revision.
IRC 47 -1972	Tentative specifications for built up spray grout. IRC 48 -1972 Tentative Specification for Bituminous Surface Dressing Using Precoated Aggregates
IRC 52-2001	Recommendation about the alignment survey and geometric design of hill roads. (Second Revision)
IRC 54 -1974	Vertical Clearances at Underpasses for Vehicular Traffic.
IRC 56 -1974	Recommended Practice for Treatment of Embankment Slopes for Erosion Control
IRC 66 -1976	Recommended Practice for Sight Distance on Rural Highways
IRC 67 -2001	Code of Practice for Road Signs (First Revision)
IRC 69 -1977	Space Standards for Roads in Urban Areas
IRC 70 –1977	Guidelines on regulations and control of mixed traffic in urban areas
IRC 71 -1977	Recommended practice for preparation of notations
IRC 72 -1978	Recommended Practice for Use and Upkeep of Equipment, Tools and Appliances for Bituminous Pavement Construction
IRC 73 -1980	Geometric Design Standards for Rural (Non-Urban) Highways
IRC 78 -2000	Standard Specifications and Code of Practice for Road Bridges. Section-VII Foundations & Sub-structure (Second Revision)
IRC 79 -1981	Recommended Practice for Road Delineators
IRC 83 -1999	Standard Specifications and Code of Practice for Road Bridges- Section-IX Bearings, Part-I: Metallic Bearings.
IRC 83 -1987	Standard Specifications and Code of Practice for Road Bridges, (Part-II) Section-IX Bearings, Part-II: Elastomeric Bearings
IRC 83 -2002	Standard Specifications and Code of Practice for Road Bridges, (Part-II) Section-IX Bearings, Part-III :POT, POT-CUM-PTFE, PIN AND METALLIC GUIDE BEARINGS
IRC 87 –1984	Guidelines for the design and erection or false work for road bridges.
IRC 89 -1997	Guidelines for Design & Construction of River Training & Control Works for Road Bridges (First Revision)

B) Ministry of Surface Transport Publications

i. M0RT&H Specifications for Road and Bridge Works, 2001 (Fourth Revision)

ii. MORT&H Pocketbook for Highway Engineers, 2002 (Second Revision)

iii. M0ST Handbook on Road Construction Machinery, 1985

iv. MORT&H Pocketbook for Bridge Engineers, 2000 (First Revision)

v. MOST Manual for Maintenance/of Roads, 1983

vi. MOST Standard Plans for 3.0 m Span Reinforced Cement Concrete Solid Slab superstructure with and without Footpaths for Highways 1991

vii. MOST Standard Plans for Highways Bridges R.C.C. T -Beam & Slab Superstructure - Span from 10m to 24 m with 12 m width, 1991

viii. MOST Standard Plans for Highway Bridges PSC Girder and RC Slab Composite superstructure for 30 m Span with and without Footpaths, 35 m Span with footpaths and 40 m Span without Footpaths, 1991

ix. MOST Standard Drawings for Road Bridges - R.C.C. Solid Slab Superstructure (15* 30* SKEW Span 4.0 m to 10.0 m (with and without Footpaths), 1992

x. MOST Type Designs for Intersections on National Highways, 1992

xi. MORT&H Standard Data Book for Analysis of Rates, 2003 (First Revision)

xii. MOST Addendum to Ministry's Technical Circulars and Directives on National

xiii. Highways and Centrally Sponsored Road & Bridge Projects (Aug. 88 to Dec. 92), 1993

xiv. MOST Standard Drawing for Road Bridges R.C.C. Solid Slab Superstructure (22.5*SKEW) R.E.Span 4M to 10M (with and without Footpath), 1996

xv. MOST Addendum to Ministry's Technical Circulars and Directives on National Highways and Centrally Sponsored Road & Bridge Projects (Jan. 93 to Dec" 94), 1996

xvi. MOST Addendum to Technical Circulars & Directives on National Highways & Centrally Sponsored Road & Bridge Works Projects (Jan 1995 to Dec 1997)

xvii. MOST Standard Plans for Single, Double and Triple Cell Box Culverts with and Without Earth Cushion

xviii. Manual for Safety in Road Design

xix. MORT&H Report of the Committee on Norms for Maintenance of Roads in India, 2001

xx. MORT&H Manual for Construction and Supervision of Bituminous Works, 2001

9. For completion of Railway span & other construction in Railway limits, all relevant RDSO standards and consequent circulars etc. will be regarded.

10. For completion of ROB / under this contract, any relevant, CODE, otherwise not mentioned elsewhere but applicable, will be regarded & treated as an integrated part of this contract.

11. The design shall be carried out in terms of specifications of latest editions (and up-to-date correction/amendment/errata) of IRS (Indian Railways Standards), IRC (Indian Road Congress) and ISI (Indian Standard Institution) now BIS (Bureau of Indian Standards), international codes wherever applicable and as desired by the Client/Employer.

12. Vertical Clearance for further electrification (if not existing) shall be provided corresponding to ONE requirements or any future track re-profiling in vertical frame, as desired by Railway.

13. The girder may be of Precast pre-stressed concrete (Post tensioned), steel or composite or R.C.C/PSC Beams/Slabs etc. depending upon the field conditions and economy. End launching/crane erection of Girders from the approach road may be preferred.

14. The approaches of the bridges may be Reinforced earth work or earth slopes or viaduct depending upon the site conditions and requirements of the Client. The decision of the Engineer-in-charge shall be final in this regard. The consultant shall provide alternatives with cost benefit analysis and full justification for the proposed alternatives.

15. The Engineer shall supply GAD prepared for the ROB/ to the contractor. The contractor shall design, prepare all detailed and working drawings & upon obtaining its approvals, carry out the work in accordance with these drawings and/or any modification thereof as decided by the Engineer. In case, there is some discrepancy in the drawings or some drawings/details, the contractor shall inform & bring in notice of the Engineer in advance.

16. The Contractor shall supply three complete sets of "As Built/ completion Drawings" on approved polyester tracing film 75 micron thick and also on computer Hard Disk & Pen Drive(Soft Copy)and six prints showing details of all the works "As Executed" finally. The

drawings and prints shall be delivered to the Engineer within one month of completion of the various sections of the work or at such other times as directed by the Engineer. The drawings shall be fully dimensioned with the Engineer's standard title block as approved by the Engineer. The cost of making the "As Built drawings" shall be deemed included in the rates quoted in the Bill of Quantities. **Submission of "As built / Completion drawings" will be a pre condition for acceptance of any completion.**

MILESTONES AND TIME SCHEDULE

4.1.1 Time Schedule:

4.1.1.1 Time of start and completion:

The time allowed for execution of the works is 06 (Twenty months) from the date of issue of letter of acceptance from DFCCIL for ROB.

The contractor shall be expected to mobilize to the site of works and commence execution of the works within 7 (days) from issue of Acceptance Letter by DFCCIL on all the three ROBs simultaneously.

If the contractor commits defaults in commencing execution of the works as afore stated, DFCCIL shall without prejudice to any other right to remedy, be at liberty to forfeit fully the Earnest Money Deposit and performance guarantee of the contractor.

4.1.1.2 Progress of works:

The contractor shall submit a programme of work in the form of a Bar Chart of all the activities in consistence with milestone target envisaged below. In case this bar chart requires to be modified, the Engineer and the contractor shall agree upon a time and progress chart. The chart shall be prepared in direct relation to the time stated as 06 months for the completion of the works as the milestone targets specified below of these special conditions. It shall indicate the forecast of the dates of commencement and completion of various activities of the work and may be amended as necessary by agreements between the Engineer and the contractor within the limitation of 06 months as overall completion period.

4.1.2 Achievement of milestone progress:

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

TABLE - A : Mile Stones For Completion of ROBs

Sl. No.	**Activity Schedule** (Here "D" stands for date of LOA and plus numerals for days to complete scheduled activity	Comp. Time 06 Months for ROBs
1 a	Mobilization including establishment of office & Camp, Laboratory, deployment of P&M (Hydraulic Piling Rig, Batching Plant, Excavator, Transit Mixer etc.)	D+15
1 b	Preparation of casting yard for PSC/RCC Girders including Shuttering	D+20
2	Completion of Foundation if required	D+30

3	Sub Structure including pier cap wherever applicable	D+50
4 a	Completion of Super structure including Deck slabs etc.	D+90
4 b	Completion of RE wall work & Approaches filling upto granular sub base level	D+120
5	Completion of all physical work of ROB including Road work over Bridge and Approaches, Service road, Drain, Electrification, kerb, Crash barrier, Painting, Traffic Safety signs and signals etc.	D+170
6	Testing, Commissioning and handover	D+180

TABLE - B : ROB - Mile Stones For Completion of Design & Drawing Works along with Approvals

Sl. No.	Activity Schedule (Here "D" stands for date of LOA and plus numerals for days to complete scheduled activity	Comp. Time 06Months for ROBs
1	Drawings of Sub &Super Structures alongwith launching Scheme	D+15
2	All balance Design and Drawing	D+60
3	As built /Completion Drawing and Designs	D+170

Note: "D" is the date of issue of Letter of Acceptance by DFCCIL to the contactor.

TENDER FORMS
(INCLUDING SCHEDULE OF ITEMS)
&
ANNEXURES

PART- VII

TENDER FORMS

FORM No.	SUBJECT
FormNo.1	Schedule of Items
FormNo.2	Standing indemnity bond for on account payment.
FormNo.3	Format of Integrity Pact
FormNo.4	Anti-profiteering

FORM No. 1

SCHEDULE OF ITEMS

(Schedule-A)

SCHEDULE-A : RUIDP SOR 2013 ITEMS						
Sr. No.	**Refer (RUIDP SOR 2013)**	**Particulars**	**Unit**	**Qty**	**Rate (Rs.)**	**Amount**
	1.1	Carriage of material by mechanical transport including loading, unloading and stacking				
1.	1.1.1	Earth@lead for 5 Km	Cum	9500	88.98	845310.00
2.	1.1.3	Stone,boulders, gravelly material@lead for 5 Km	Cum	300	83.74	25122.00
3.	1.1.5	Brick Tiles @ lead for 5 Km	Cum	100	113.89	11389.00
	2.1	Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 mtrs and earth filling in the depression/pit to required compaction as per MoRT&H specification clause 201. (Measurment of girth to be done at height of 1 m above ground level)				
4.	2.1.1	Girth from 300 mm to 600 mm	each	15	938	14070.00
5.	2.1.2	Girth from 600 mm to 900 mm	each	10	1180	11800.00
6.	2.1.3	Girth from 900 mm to 1800 mm	each	15	1880	28200.00
7.	2.1.4	Girth from 1800 mm to 2700 mm	each	5	3390	16950.00
8.	2.1.5	Girth above 2700 mm	each	1	6410	6410.00
9.	2.2	Clearing Grass and Removal of Rubbish (Maximum 150mm) by manual means and disposal at a lead of 50 metres as per MoRT&H specification clause 201	Sqm	28500	1.71	48735.00
	2.3	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to a lead of 50 metres from road boundary including removal and disposal of top organic soil not exceeding 150 mm in thickness as directed by Engineer				
10.	2.3.1	In area of light jungle	Sqm	2500	5.12	12800.00
	2.4	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 50 metres as directed by Engineer				
11.	2.4.1	Lime Concrete, cement concrete grade M-10 (1:5:10) and below	cum	200	317	63400.00
12.	2.4.2	Cement concrete M-15 & M-20 and PCC blocks	Cum	200	771	154200.00
	2.4.4	Dismantling Brick / Tile work				
13.	2.4.4.2	In cement mortar	Cum	100	249	24900.00
	2.4.5	Dismantling Stone Masonry				
14.	2.4.5.2	Rubble Stone Masonry in cement mortar	Cum	100	249	24900.00

	2.9	Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 50 metres, stacking serviceable and unserviceable materials separately as directed by Engineer.				
15.	2.9.1	Bituminous courses	Cum	40	1020	40800.00
16.	2.9.2	Granular Course	Cum	125	682	85250.00
17.	2.10	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately as per MoRT&H specification clause 202.	Cum	75	976	73200.00
18	2.16	Removal of telephone / electric poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and upto lead of 1000 meters and stacking serviciable material and unserviceable material separately as per MoRT&H specification clause 202.	each	10	717	7170.00
	4.2	Earth work in excavation for roadway, including trimming bottom and side slopes in accordance with requirement of line, grades and cross sections, including disposal of surplus material with all lift and lead upto 1.0km as per MoRT&H specification clause 301.				
19	4.2.1	In all type of soil.	cum	3375	171	577125.00
20	4.4	Construction of embankment with approved material obtained from borrow pit with all lifts and leads, transporting to site, spreading, grading to required slope and compacting by vibratory roller 8-10 tonne to meet requirement of table 300-2 including cost of compensation for earth taken from private land complete as per MoRT&H specification clause 305. (Lead taken upto 5 km)	cum	3800	196	744800.00
21	4.6	Construction of subgrade and earthen shoulders with approved material obtained from borrow area with all lifts & leads, transporting to site, spreading, grading to required slope and compacted in layers not exceeding 200mm thickness at OMC, with vibratory roller of 80-100 KN static weight or more to attain a density 97% maximum dry density to meet requirement of table No.300-2 as per MoRT&H specification clause 305. (Lead taken upto 5 km)	cum	3800	223	847400.00
	4.8	Compacting original ground				
22	4.8.2	Loosening and recompacting original ground below embankment including Loosening levelling and recompacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling by vibratory roller 8-10 tonne so as to achieve	Cum	2150	23	49450.00

		minimum dry density as given in table 300-2 for embankment construction as per MoRT&H specification clause 305.3.4.				
	4.9	Earth work in excavation in foundation, trenches etc. including dressing of sides and ramming of bottoms, including getting out the excavated material, refilling after laying pipe/ foundation and disposal of surplus excavated material at a lead upto 50m suitable site as per direction of Engineer for following depths, below natural ground / Road top level				
	4.9.1	In all types soils/ saturated soil such as moorum, sand, sandy silt, clay, black cotton soil, kankar, etc.				
23.	4.9.1.1	Depth upto 1.5m .	Cum	39800	169	6726200.00
24.	4.9.1.2	Add extra for over all depth of excavation above 1.5 m and upto 3.0m over item no 4.9.1.1	Cum	20000	25.5	510000.00
25	4.9.1.3	Add extra for over all depth of excavation above 3.0 m and upto 4.5m over item no 4.9.1.1	Cum	9950	54.5	542275.00
26	4.9.1.4	Add extra for over all depth of excavation above 4.5 m and upto 6.0m over item no 4.9.1.1	Cum	200	88	17600.00
	4.9.2	In ordinary rock				
27	4.9.2.1	Depth upto 1.5m .	Cum	6000	730	4380000.00
28	4.9.2.2	Add extra for over all depth of excavation above 1.5 m and upto 3.0m over item no 4.9.2.1	Cum	350	109	38150.00
29	4.9.2.3	Add extra for over all depth of excavation above 3.0 m and upto 4.5m over item no 4.9.2.1	Cum	100	236	23600.00
30	4.9.2.4	Add extra for over all depth of excavation above 4.5 m and upto 6.0m over item no 4.9.2.1	Cum	50	380	19000.00
	4.9.3	In hard rock (required blasting) including Blasting materials				
31	4.9.3.1	Depth upto 1.5m .	Cum	1150	1190	1368500.00
32	4.9.3.2	Add extra for over all depth of excavation above 1.5 m and upto 3.0m over item no 4.9.3.1	Cum	375	239	89625.00
33	4.9.3.3	Add extra for over all depth of excavation above 3.0 m and upto 4.5m over item no 4.9.3.1	Cum	50	525	26250.00
34	4.9.3.4	Add extra for over all depth of excavation above 4.5 m and upto 6.0m over item no 4.9.3.1	Cum	50	869	43450.00
	4.9.4	In hard rock (Blasting prohibited)				
35	4.9.4.1	Depth upto 1.5m .	Cum	150	2360	354000.00
36	4.9.4.2	Add extra for over all depth of excavation above 1.5 m and upto 3.0m over item no 4.9.4.1	Cum	100	472	47200.00
37	4.9.4.3	Add extra for over all depth of excavation above 3.0 m and upto 4.5m over item no 4.9.4.1	Cum	75	1040	78000.00
38	4.9.4.4	Add extra for over all depth of excavation above 4.5m and upto 6.0m over item no 4.9.4.1	Cum	50	1720	86000.00
39	4.10	Add extra over item no 4.9.1, 4.9.2, 4.9.3 and 4.9.4 in RUIDP SOR for excavation in saturated soil, silt and sludge where pumping or bailing out of water is required including shoring strutting where required and dewatering, where width is upto 6 metre				
	5.18	**SITE OFFICE**				

40	5.18.1	Providing, arranging, managing and maintaining 500 sqft. well furnished office and well equipped Laboratory with 3 tables, 10 chairs, 2 steel almirah, one computer with printer & operator, sufficient number of display etc. to the satisfaction of the Project Manager including Electrical, Water expenses etc. For execution of this item the date of start shall be considered only when the Contractor has actually rented/constructed the required premises established the office & Laboratory as per requirement. This item shall remain valid only for original contact period; no additional payment shall be made for whatsoever reason even if time extension if provided or date of completion is extended. This office and laboratory including furniture and all other equipment shall be property of contractor after completion of Project.	month	8	18000	144000.00
	7.1	Providing, laying, spreading and compacting of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per MoRT&H specification clause - 401 including all material, labour, machinery, lighting, guarding and maintenance of diversion.		-	-	-
41	7.1.1	Grading - I Material	Cum	5000	1080	5400000.00
	7.5	Providing laying, spreading and compacting stone aggregates of specific sizes as per Table 400-7 to Water Bound Macadam specification including spreading in uniform thickness; hand packing, rolling with power roller 8-10 tonnes, in stages to proper grade and camber, applying and brooming requisite type of screening (Table 400-8) binding materials to fill up the interstices of coarse aggregates, watering (with water browser) and compacting to required density, making necessary earthen bund to protect edges as per clause 404 of MoRT&H specification including all material, labour, machinery, lighting, guarding and maintenance of diversion complete				
42	7.5.4	Crusher Broken Grade III (53-22.4mm)	Cum	1400	1480	2072000.00
43	7.6	Providing, laying, spreading (with paver finisher only) and compacting wet mix macadam (WMM) base course comprising of graded stone aggregate and granular material conforming to MORT&H specifications (Table 400-II) in layers of equal compacted thickness each consolidated, including pre-mixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tippers to site, laying in uniform layers in base course on a well prepared sub-base/ base course and compacting with power vibratory-roller to achieve the desired density complete as per MoRT&H specification clause - 406 including all	Cum	2500	1300	3250000.00

		material, labour, machinery, lighting, guarding and maintenance of diversion.				
44	8.1	Providing and applying priming coat over prepared surface of granular base with bitumen emulsion as per IS;8887 and approved quality @ 0.60kg/sqm with the help of spray set fitted on bitumen container (boiler) after cleaning the surface including removing of binding material and other foreign matter with wire brushes and small picks, sweeping with brooms or soft brushes and finally dusting with old gunny bags and compressed air to receive bituminous treatment complete as per clause 502 of MoRT&H specification including all material, labour, machinery, lighting, guarding and maintenance of diversion.	sqm	10000	27	270000.00
45	8.2	Extra for additional bitumen emulsion used in above item for every 1kg per 10 sqm	sqm	5000	4.5	22500.00
46	8.3	Providing and applying tack coat on the prepared surface with bitumen emulsion as per IS;8887 and approved quality @0.2kg/ sqm with the help of spray set fitted on bitumen container (boiler) after cleaning the surface with brooms or soft brushes and finally dusting with old gunny bags and compressed air to receive bituminous treatment complete as per clause 502 of MoRT&H specification including all material, labour, machinery, lighting, guarding and maintenance of diversion.	sqm	10000	9.5	95000.00
47	8.4	Extra for additional bitumen emulsion used in above item for every 1kg per 10 sqm [for 0.015kg/Sqm Rate 4.5x0.15=0.675]	sqm	1500	4.50	6750.00
	8.8	Providing and laying 50-75 mm compacted thick design mix (approved by Engineer) Dense Bituminous Macadam on prepared surface with specified graded crushed aggregates as per Table 500-9, 500-10 with bitumen binder set (including cost of anti-stripping compound wherever required) for base/ binder course including loading of material with F.E. loader, heating and mixing of stone aggregate, filler and bitumen in computerised hot mix plant, transporting the mixed material by tippers to paver and laying with paver finisher fitted with electronic sensor control as per clause 504.3.5 to the required level and grade, compacting by power rollers and vibratory rollers or 150 to 250 KN pneumatic tyred roller with TP=0.7Mpa to achieve the desired density (approximately 2.3 tonne /cum) complete as per clause 507 of MoRT&H specification but excluding primer/tack coat, including all material, labour, machinery, lighting, guarding and maintenance of diversion.				
48	8.8.2	Grade-II with Bitumen VG-grade 30 @ 4.50 %, lime filler @ 2% (percent by weight of total mix)	Cum	835	7130	5953550.00

	8.10	Providing and laying 30-45 mm compacted thickness Bituminous Concrete as per design mix (approved by Engineer) on prepared surface with specified grade stone aggregate as per Table - 500-18 with bitumen for wearing course including loading of aggregate with F.E. loader and hot mixing of stone aggregate and bitumen (including cost of anti-stripping compound wherever required) in computerised hot mix plant, transporting the mixed material by tippers to paver and laying with paver finisher fitted with electronic sensing device (as per clause 504-3.5) to the required level and grade and compacting by power rollers and vibratory rollers or 150 to 250 KN pneumatic tyred roller with TP=0.7Mpa, to achieve the desired density complete as per clause 509 of MoRT&H specification including all material, labour, machinery, lighting, guarding and maintenance of diversion but excluding primer/tack coat.				
49	8.10.2	Grade-II with bitumen of grade CRMB-60 @ 6% (percent by weight of total mix)	Cum	520	8870	4612400.00
50	8.16	Providing and laying 25 mm thick bitumen mastic asphalt wearing course with paving grade bitumen meeting the requirements given in table 500-29 (including cost of anti-stripping compound wherever required) @ 14-17% (by weight) as per job mix formula, coarse aggregate as per Table 500-32, fine aggregate as per Table 500-31 and lime stone powder as filler, prepared by using mastic cooker and laid to required level and grade after cleaning the surface, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of 13.2 mm nominal size @ 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100 degree Centigrade, protruding 1 mm to 4 mm over mastic surface, all complete including all material, labour, machinery, lighting, guarding and maintenance of diversion complete as per clause 515 of MoRT&H specification.	Sqm	900	544	489600.00
51	10.1	Providing and fixing precast cement concrete M-20 grade (Using mechanical Concrete Mixer) kerb stone top and bottom width 115 and 165 mm respectively, 250 mm high on 150 mm thick PCC M-10 grade foundation as per design, including fixing at site as per clause 408 of MoRT&H Specification including all material, labour, machinery, lighting, guarding and maintenance of diversion.	metre	2000	244	488000.00
	10.5	Painting two coats on specified surface with synthetic enamel paint of approved brand and shade, after thorough cleaning and necessary filling to give even shade as per clause 803 of MoRT&H Specification including all material, labour.				
52	10.5.1	On New Plastered concrete Surface	Sqm	2500	83	207500.00

53	10.8	Providing and laying marking of center line and stop line etc with hot thermoplastic compound 2.5 mm thick on road/ plain surface, including reflectorising glass beads @ 250gms per sqm area with special applicator machine, as per IRC:35 including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control involved. The finished surface to be level, uniform and free from streaks and holes as per clause 803 of MoRT&H Specification including all material, labour, machinery, lighting, guarding and maintenance of diversion.	Sqm	450	803	361350.00
	10.9	Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67 made of encapsulated lens type reflective sheeting vide clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 3 metre long and size 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing including all material, labour.				
54	10.9.1	90 cm equilateral triangle	each	20	4130	82600.00
55	10.9.3	60 cm circular	each	20	3660	73200.00
56	10.9.4	80 mm x 60 mm rectangular	each	20	5050	101000.00
57	10.9.7	90 cm high octagon	each	10	6390	63900.00
	10.13	Providing and erecting overhead signs with a corrosion resistant 2mm thick aluminium alloy sheet reflectorised with high intensity retro-reflective sheeting of encapsulated lens type with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans.				
58	10.13.1	Truss and Vertical Support	tonne	12	86900	1042800.00
59	10.13.2	Aluminium alloy plate for over head sign	Sqm	85	1300	110500.00
60	10.17	Providing and fixing 50 mm dia G.I. steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 metres high above ground, 2 m centre to centre, complete as per approved drawings including all material, labour.	Metre	100	2210	221000.00
61	10.19	Providing and fixing CAT's eye made of aluminium alloy size 75x100x22mm having 21 biconvex lenses embedded in circular disk of AS plastic on each side on road surface complete including allmaterial, labour, diversion.	Each	720	195	140400.00
62	10.22	Providing and fixing "SWISS" type bollard 134cm height made out of 1.25mm thick M.S. sheet welded in conical section having upper dia 15cm and lower dia 20cm with another attachment of mandatory 7mm thick plate and fixed with the help of 7cm long, 30cm dia chrome plated MS tube, this part is fixed	Each	60	1480	88800.00

		on the body with another attachment of a cap 30x7cm, whole body is painted in black stove enamel and mandatory plate in azure blue with one compulsory keep left arrow with 10mm border reflective strip each of 7.5cm on body complete in all respect including all material, labour, diversion.				
63	10.23	Providing and fixing of hazard marker made out of 2mm thick MS angle iron 25×25×3mm and fixed on channel posts 75×75×6 mm and hold fast at bottom whole body is painted in white stoving enamel and 6 nos. 5cm dia reflective sheet on white reflective background with additional border of 1.25cm all around it complete in all respect including all material, labour, diversion	Each	26	495	12870.00
64	12.1	Filling of Pot- holes and patch repairs with Built up Spray Grout in two layers with 53-22.4mm size of aggregate upto 75mm depth and removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 506, compacting with 8-10 tonne power roller, trimming and finishing the surface to form a smooth continuous surface complete using Bitumen VG-grade 30 as per clause 503, 506 & 3004.2 of MoRT&H specification including all material, labour, machinery, lighting, guarding and maintenance of diversion..	Sqm	2000	262	524000.00
65	12.2	Filling of Pot- holes and patch repairs with open graded premix surfacing 20mm thick compacted with bitumen binder VG-grade 30 @ 14.60 kg/10 sqm and aggregate in Hot mix plant, transporting the mixed material with tipper and laying manually to the required level and grade, rolling with power roller, 8-10tonne, removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 511, compacting, trimming and finishing the surface to form a smooth continuous surface complete as per clause 3004.2 of MoRT&H specification including all material, labour, machinery, lighting, guarding and maintenance of diversion..	Sqm	1500	120	180000.00
	13.4	Providing, laying and compacting plain/ reinforced cement concrete of specified grade in foundation/ leveling course/ pile cap using concrete mixer and vibrater complete including cost of form work, as per drawing and technical specifications and as per clause 1100, 1500, 1700, 2100 of MoRT&H specification including all scaffolding material, labour, machinery				
66	13.4.1	PCC Grade M -15	Cum	210	3840	806400.00
67	13.4.2	PCC Grade M -20	Cum	1140	4310	4913400.00

	13.5	Providing, laying and compacting design mix plain/ reinforced cement concrete of specified grade in foundation/ leveling course/pile cap using batching plant, transit mixer and concrete pump and vibrater including cost of form work, complete as per drawing and technical specifications as per clause 1100, 1500,1700,2100 of MoRT&H specification including all material, labour, machinery, and maintenance of diversion				
68	13.5.8	RCC Grade M -35	Cum	450	5100	2295000.00
69	13.24	Providing and laying TMT bar reinforcement at any level in foundation/ pile/ pile cap complete as per drawing and clause 1600 of MoRT&H Specification including all material, labour and machinery.	tonne	45	64600	2907000.00
	14.6	Providing and laying structural plain/ reinforced cement concrete (design mix) of specified grade in substructure at all levels using concrete mixer and vibrater, including cost of form work, as per drawing and technical specifications complete as per clause 1500, drawing and technical specifications complete as per clause 1500, 1700 and 2200 of MoRT&H specification including all material, labour, scaffolding etc.				
70	14.6.5	RCC Grade M -25	Cum	100	5150	515000.00
71	14.6.7	RCC Grade M -35	Cum	100	5250	525000.00
	14.7	Providing and laying structural plain/ reinforced cement concrete (design mix) of specified grade in substructure at all levels using batching plant transit mixer , concrete pump and vibrater, including cost of form work, as per drawing and technical specifications complete as per drawing and clause 1500,1700and2200 of MoRT&H specification including all material, labour, scaffolding ,machinery etc.				
72	14.7.2	RCC Grade M-25	Cum	100	5460	546000.00
73	14.7.4	RCC Grade M-35	Cum	370	5560	2057200.00
	14.8	Providing weep holes in brick/ stone masonry/ Plain/ Reinforced concrete abutment, wing wall/ return wall with following dia AC pipe, extending through the full width of the structure with slope of 1V : 20H towards drawing face complete as per drawing, technical specifications and clause 2205 of MoRT&H Specification including all scaffolding, material, labour, machinery etc.				
74	14.8.1	100 mm dia	metre	450	104	46600.00
75	14.9	Supplying, fitting and fixing in position true to line and level Elastomeric Bearing conforming to IRC:83 (Part-II) section IX and clause 2005 of MoRT&H specification complete including all accessories as per drawing and technical specification and as per clause 2000 & 2200 of MoRT&H Specification including all scaffolding, material, labour, machinery etc.	Cubic centim etre	11700	0.75	8775.00

76	14.10	Supplying, fitting and fixing in position true to line and level POTPTFE bearing consisting of a metal piston supported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel/fabricated structural steel, metal and elastomer elements to be as per IRC: 83 part-I & II respectively and other parts conforming to BS: 5400, section 9.1 & 9.2 and clause 2006 of MoRT&H Specifications complete as per drawing and approved technical specifications and as per clause 2000 & 2200 of MoRT&H Specification including all scaffolding, material, labour, machinery etc.	MT	5000	308	1540000.00
77	14.11	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRT&H specifications with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and technical specification including all material, labour, machinery as per clause 710.1.4 of IRC:78 and clause 2200 of MoRT&H specification.	Cum	20600	1150	23690000.00
	14.12	Back filing in foundation, trench behind abutment, wing wall and return wall etc and below pipe bed in layers not exceeding 20cm in depth, consolidating each deposited layer compacted by mechanical means with all lead and lift as per drawing and technical specification including all material, labour, machinery as per clause 2100 and 2200 of MoRT&H specification including all material, labour, machinery.				
78	14.12.1	Using selected granular material (as per clause 2200 of MoRT&H).	Cum	620	836	518320.00
79	14.14	Providing and laying precast cement concrete M-30 Grade 100mm thick paving blocks of approved shape and size (not less than 0.20 sqm), over 100mm thick PCC M-10 Grade bedding (duly compacted) including filling of joints with cement sand mortar (1:3) complete as per drawing and specification and as approved by Engineer.	Sqm	1960	975	1911000.00
80	14.16	Fabrication, Welding, Riveting, bolting by HSFG bolts wherever required, supply, transportation to site, Assembling, Launching, Erecting of steel girder spans as per drawings and specifications approved by Railway and department for composite construction i.e. (Steel +RCC) of superstructure of the Road Over Bridge with contractor's own mild steel confirming to IS: 2062 Grade 250(B) with all welds, rivets, nuts bolts rivet materials, weld materials, HSFG bolts, service bolts, with other ancillary steel structures fixed to the girder where necessary in proper level and alignment and as per	kg	298200	136	40555200.00

		technical specifications etc. with contractor's own materials, fabrication, machinery, templates, fixtures, equipments tools and plants, transportation to site, skilled/ unskilled labour, excise duty., Octroi, sales tax and other taxes, all leads and lifts, descent, loading, unloading, crossing one or more Railway track if required etc. complete and as per technical specifications. The rate shall also be inclusive of cold straightening of deformed and bent girder parts before their assembly. The structural steel to be used should be manufactured by SAIL/ RINL/ TISCO/ ESSAR/ JINDAL only. For Painting prior approval for superior brand/ make of the paint should be taken from engineer in charge				
		The rate shall be inclusive of supply, erection and dismantling of staging and scaffolding and other temporary arrangements required for the purpose of assembly, erection and launching of girders. The rate shall also be inclusive of cold straightening of deformed and bent girder parts before/after their assembly Metalising girder/ girder component such as cross girder, top chord channels, bracing etc of BG new steel girder as directed by engineer with epoxy paint spray not less than two layers after preparing surface by sand/grit blasting as per provision laid in Appendix VI of IRS B-1179 code (latest alteration) including one coat wash primer one coat epoxy zinc crome primer and two coat of epoxy paint with approved paint conforming to IS specification for fabrication & erection of steel girder bridge (RS B 1-79) as corrected up to date with contractor's own materials, tools, plants, labour, handling, rehandling if any including all lead, lifts descents, crossing of track/ obstruction etc. complete in all respect and as per direction of the engineer.				
		Note: 1. The fabrication of girders must be got done from RDSO approved firms only. 2. For Payment purpose, nominal weight of the girder as per drawing will only be considered.				
	14.17	Providing and laying structural reinforced/ prestressed cement concrete (design mix) of specified grade using batching plant, transit mixer, concrete pump and vibrater in superstructure at all levels including cost of steel form work complete as per clause 1500, 1600 and 1700 of MoRT&H specification including all scaffolding, material, labour, machinery etc				
	14.17.4	RCC/PSC Grade M -40				
81	14.17.4.2	For T-beam & slab	Cum	1750	6410	11217500.00

	14.18	Providing, precasting, transportation and placing in position at all level precast pre/post-tensioned specified grade girders complete as per drawing and clause 1800 & 2300 of MoRT&H specifications including all material, labour, machinery including suitable crane etc.				
82	14.18.1	RCC M-40	Cum	120	21200	2544000
	14.21	Providing and laying structural Reinforced cement concrete (design mix) of specified grade using mechanical concrete mixer and vibrater in approach slab, friction slab, edge beam, footpath and kerb as per approved drawing and specification as directed by the Engineer as per clause 1500 &1700 of MoRT&H specification including all scaffolding, material, labour, machinery etc.				
83	14.21.1	RCC M-30	Cum	50	5980	299000.00
84	14.21.2	RCC M-35	Cum	50	6010	300500.00
	14.22	Providing and laying structural Reinforced cement concrete (design mix) of specified grade using batching plant, transit mixer, concrete pump and vibrater in approach slab, friction slab, edge beam, footpath and kerb as per approved drawing and specification as directed by the Engineer as per clause 1500 &1700 of MoRT&H specification including all scaffolding, material, labour, machinery etc				
85	14.22.2	RCC M-35	Cum	2093	6340	13250600.00
86	14.22.3	RCC M-40	Cum	44	6410	288450.00
87	14.23	Designing, providing and erection of Precast RCC facia panels of thickness 180mm made with M-35 Grade concrete batching plant, transit mixer, concrete pump and vibrater for retaining earth with all elements and accessories including reinforcing element, complete as per approved drawing and clause 3100 of MoRT&H specifications including all material, labour, machinery etc. (Scope of work includes designing, getting approval, casting in yard including reinforcement, curing, storing, transporting, lifting, placing in position, erection with all necessary fasteners etc complete)	Sqm	11200	4620	51744000.00
88	14.24	Providing, placing and compacting to desired density approved backfill material in layers as per approved methodology including testing for reinforced fill portion and random fill portion in the approaches between the Reinforced Soil (RS) wall panels as pre approved drawings as per clause 3103 of MoRT&H specification The soil should be predominately coarse grained not more than 10% of	Cum	125000	383	47875000.00
		particle should pass 75 micron sieve The item shall be measured and paid for the finished volume of backfill and sub-grade placed in position excluding the volume of filter media at base and behind the RS walls.				

89	14.25	Supplying, fitting and placing TMT bar reinforcement in sub structure/ superstructure at all level complete as per drawing and clause 1600 & 2200 of MoRT&H Specification including all material, labour, machinary etc.	tonne	750	65700	49275000.00
90	14.27	Providing and laying reinforced cement concrete wearing coat M-30 grade at any level including formwork and reinforcement @ 75kg/cum complete as per drawing and technical specification and as per clause 2702 of MoRT&H Specification including all material, labour, machinary etc.	Cum	130	9720	1263600.00
	14.28	Providing and laying Precast Reinforced cement concrete slab for footpath and median with approved finish, constructed with specified grade concrete as per dimensions in the approved drawing and at locations directed by the Engineer including form work and excluding reinforcement and complete as per clause 1500 & 1700 of MoRT&H specification including all material, labour, machinery.				
91	14.28.2	RCC M-25	Cum	100	5200	520000.00
92	14.28.3	RCC M-30	Cum	50	5220	261000.00
93	14.29	Construction of precast/ cast-in-situ RCC railing M-30 grade, true to line and grade, center to center spacing between vertical post not to exceed 2000mm leaving adequate space between vertical post for expansion, complete as per drawing and technical specification and as per clause 1500, 1600, 1700 & 2703 of MoRT&H Specification including all material, labour, machinary etc.	Metre	60	1590	95400.00
94	14.30	Providing and fixing Mild steel railing including painted, complete as per drawing and technical specification and as per clause 1900 & 2703.2 of MoRT&H Specification including all material, labour, machinary etc.	Metre	100	2870	287000.00
95	14.32	Providing, laying and fixing of strip seal expansion joint catering to maximum horizontal movement upto 70 mm complete as per approved drawings and as per clause 2600 of MoRT&H specifications to be installed by manufacturer's authorized representative ensuring to compliance to manufacturer's instruction for installation including preparing the edges of bridge, welding to exposed reinforcement, concreting with design mix of grade of bridge or M-35 whichever is richer including all material, labour, machinery etc complete.	Metre	80	9060	724800.00
96	14.33	Providing and erecting Drainage Spouts with 0.15m long GI pipe 150mm dia and GI bolt 10mm dia with Galvanised MS flat clamp complete as per drawing and Technical specification as per clause 2705 of MoRT&H specifications including all material, labour, machinery etc.	Each	40	862	34480.00

	14.35	Providing and constructing of Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with specified grade concrete using mechanical mixer and vibrator with 450 mm long at expansion joints filled with pre-moulded asphalt filler board, keyed to the structure on which it is built and installed as per design and dimensions in the approved drawing and at locations directed by the Engineer, all as specified as per clause 809 of MoRT&H specification including all material, labour scaffolding etc				
97	14.35.3	RCC M-35	Cum	2200	5790	12738000.00
98	14.38	Providing and erecting a "Thrie" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 85 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 2 m high with 1.15 m below ground level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a space of channel section 150 x 75 x 5 mm, 546 mm long complete as per clause 810 of MoRT&H specification including all material, labour machinery etc.	Metre	100	4240	424000.00
99	14.39	Providing and fixing G.I. Pipes railing of 80 mm dia. (Class B) over brackets of 16 mm thick MS plate with 200 mm at bottom & 120 mm at top with 200 mm height welded to 16 mm thick MS Plates of size 200 X 175 anchored with 400 mm long 4-12 mm dia.steel bars at the top of RCC crash barrier @1.0m c/c including fixing arrangement as per the drawing, clause 800 of MoRTH specification and as per the direction of the Engineer.	Metre	2365	1170	2767050.00
100	14.41	Providing and applying elastic, elastomeric membrane foming system with anti carbonation and breathing properties. The system should be based on solvent free acrylic polymer with selected minerals fillers and should be ultra violet resistant, crack bridging type, carbonation resistant, breathable, environment friendly, water proofing coating. for anti carbonation equivalent air layer thickness denoted as R or SDCO2 >= 50mm and for breathability equivalent air layer thickness denoted as SDH2O shall be <= 4mm for vapour transmitting barrier. The system consist of one coat primer namely PREMIX 250 or equivalent @ 75-100 g/sqm. The consumption of main polymer namely EMCECOLORFLEX or equivalent to give film thickness of 200-225 microns(solid content,70% +-3%)should be	sqm	20	355	7100.00
		application (either by roller or brush)and surface smoothness of concrete. The total dry film thickness of the coating should be min. 200 microns for the above system. Polymer coating should be in				

		suitable shades, including cost of materials, cleaning, chipping and removing the dirt particles of the concrete slabs with wire brush & water, labour charges for filling the bug holes, cracks, joints etc. with one component polymer modified fine repair and cosmetic mortar, labour for applying above coating, scaffolding charges, all inclusive taxes.				
101	14.42	Providing, fixing, maintaining, shifting & refixing, barricading of minimum 2.0 mtr height at stipulated active site of the same project site, made with angle iron frame of 50x50x5mm and GI sheet of 0.63mm thick including primer painted initialy, painting, lettering & border with reflective paint at the time of every shifing, traffic diversion arrangement, safety guard, suitable lightning arrangement during night, complete in all respect till completion of the project as per technical specification and direction of Engineer-In-charge and same shall be possessed by the contractor after completion of the Project. Payment under this item will be released: (1) 50% At the time of Providing new barricading at the time of start of project at location and plan as approved by the Engineer & certification. (2) 50% After completion of project including shifting re-erecting and maintaining the barricading in position, during entire construction tenure with requisite manpower /flagman etc. complete for guiding traffic and safety etc and dismantling after completion of project.	Sqm	1900	2650	5035000.00
	19.6	Providing, lowering, laying in trenches, aligning, fixing in position and double flanged (welded) centrifugally (spun) Ductile iron ISI marked K-9 grade pipes as per IS:8329-2000 (amended upto date), (including jointing and jointing material) complete including all material, labour, hydraulic testing and commissioning as per Technical Specifications and as per direction of Engineer				
102	19.6.2	150 mm	Metre	50	3490	174500.00
	19.14	Providing, lowering, laying, aligning, fixing in position at and jointing at all level/ depths ISI marked HDPE pipes of PE-100 grade & PN-6 for potable water as per IS 4984 (amended upto date) in trenches in complete including all material, labour, testing and commissioning as per Technical Specifications and as per direction of Engineer.				
103	19.14.1	90 mm dia	metre	1000	218	218000.00
104	19.14.5	160 mm dia	metre	1000	664	664000.00
105	19.14.9	250 mm dia	metre	60	1610	96600.00
106	29.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete:	Kg	16000	74.5	1192000.00

	29.25	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
107	29.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	Kg	3200	88.5	283200.00
	30.20	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).				
108	30.20.3	Dark shade using ordinary cement.	sqm	1850	660	1221000.00
	31.41	Providing and fixing on wall face Unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion. (i) Single socketed pipes				
109	31.41.2	110 mm diameter	metre	3000	220	660000.00
	32.35	Finishing walls wit Acrylic Smooth exterior paint of required shade				
110	32.35.1	New work (two or more coat applied @ 1.67 ltr./10 sqm over and including base coat of water proofing cement paint applied @ 2.20 kg / 10 sqm.)	Sqm	19390	77	1493030.00
	32.41	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.				
111	32.41.1	On steel work	sqm	50	118	5900.00
112	32.41.2	On concrete work	sqm	100	122	12200.00
	32.50	Painting with synthetic enamel paint of approved brand and manufacturer of required colour to give even shade.				
113	32.50.1	Two or more coats on new work	sqm	350	66.5	23275.00
114	32.68	Add extra over items of Cement Plaster / Cement Concrete Flooring/ Plain or RCC work providing and mixing admixture of synthetic fibre 6 mm / 12 mm @ rate of 125 gm. pack per 50 kg.of Cement or in the ratio of as specified by manufacture specification and direction of the Engineer with all leads and lifts. Only for this item (Unit i.e. Each= Per Pack 125 gm)	Each	40000	53	2120000.00
	35.22	Cleaning and removal of earth, silt, sludge, kankar, boulder, building material and garbage in existing nallah/drains including construction of bye pass arrangement to bye pass water with 1.5m lift from ground level and lead upto 50 m including foul & saturated condition where pumping out or bailing out of water is required, including shoring, shuttering				
		where required and dewatering. Making access for disposal and dressing disposal side as per the				

		directed of the Engineer.				
115	35.22.1	Depth upto 1.50 m	Cum	1500	286	429000.00
116	39.1	Trenching in specified soil up to adepth of 60 cm .including removal and stacking of serviceable materials and then disposal by spreading and neatly leveling within a lead of 50 meters and making up the trenches area to proper levels by filling with earth or earth mixed with sludge or/and farm -yard manuare before and after flooding with water(excluding cost of imported earth and sludge or farm yard manure)	Cum	50	170	8500.00
117	39.3	Supplying and stacking good earth at site of work.Note: 1) Loading, unloading and carriage to be paid extra as per actual lead.2) Earth measured in stacks will be reduced by 20% for payment	Cum	50	167	8350.00
118	39.4	Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stacking.	Cum	10	847	8470.00
	39.12	Grassing with 'Doobs' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving including supplying good earth if needed.				
119	39.12.2	In rows 7.5 cm apart in either direction	sqm	200	26	5200.00
120	39.22	Planting permanent hedges including digging of trenches, 60 cm wide and 45 cm deep, refilling the excavated earth mixed with farmyard manure, supplied at the rate of 4.65 cum per 100 metres and supplying and planting hedge plants at 30 cm apart.	Metre	200	219	43800.00
121	39.23	Maintenance of Hedge for one year	Metre	200	181	36200.00
122	39.24	Planting Flowering Plants and Shrubs in Central Verge	Km	0.2	80300	16060.00
123	39.25	Maintenance of Flowering Plants and Shrubs in Central Verge for one Year.	Km	0.2	176100	35220.00
124	39.30	Planting of trees by the road side (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, planting the saplings, backfilling the trench, watering, fixing the tree guard and maintaining the plants for one year.	Each	200	1040	208000.00
125	39.36	Providing and fixing MS iron tree guard 60 cm dia and 2 metre high above ground level formed of 4 Nos (25 x 6 mm) and 8 Nos (25 x 3 mm) vertical MS riveted to 3 Nos (25 x 6 mm) iron rings in two halves, bolted together with 8 mm dia and 30 mm long bolts including painting two coats with paint of approved brand over a coat of priming, complete in all respects	Each	200	1990	398000.00
		Electrical Items for Road Light				

	43.4	S&F following sizes of ISI marked steel conduit along with heavy duty accessories in surface /recessed using saddles, clamps, fasteners as required including cutting the wall and making good the same as required.				
126	43.4.5	50 mm Group 1	R. mtr.	200	298	59600.00
	44.1	Supplying and drawing FR PVC insulated & unsheathed flexible copper conductor ISI marked (IS:694) of 1.1 kV grade and approved make in existing surface or recessed conduit/casing capping including making connections etc. as required.				
127	44.1.7	2 x 2.5 sq.mm group 1	Mtr.	1500	36	54000.00
128	44.1.9	3 x 2.5 sq.mm group 1	Mtr.	100	55	5500.00
	46.1	P&F 240/415 V MCB of breaking capacity not less than 10 KA (B/ C/ D tripping characteristic) ISI marked IS 8828(1996)]/ conforming to IEC 60898 in existing board/sheets including making connections with lugs, testing etc. as required.				
	46.1.2	Double pole MCB				
129	46.1.2.1	6 A to 32 A rating group 1	Each	100	488	48800.00
	46.5	P&F Recessed/ Surface mounting heavy duty horizontal type sheet steel Distribution board phophatised/ powder painted complete with copper bus bar, shorting link ,neutral link, earth link and din bar, conforming to IS13032 & IS8623 including making internal DB terminations with copper lugs , testing etc. as required				
	46.5.6	Double door (Three phase) Per phase isolation				
130	46.5.6.2	2+12 Way	Each	6	9750	58500.00
	46.10	P&F recessed/ surface mounting heavy duty Vertical type sheet steel Distribution board with provision of 8 way incomer, phophatised ,powder painted complete with insulated copper bus bar , neutral link, earth link and din bar, conforming to IS13032 & IS8623 including making internal DB terminations with copper lugs ,testing etc. as required				
	46.10.2	Double door (Three phase)				
131	46.10.2.4	12 Way	Each	6	8740	52440.00
	48.22	P&F of thermoplastic/ PVC cable junction boxes of following minimum sizes with IP65/ IP55 protection including threaded cable glands made of polyamide material, terminals complete in all respect.				
132	48.22.4	150 x 110 x 70 (mm)) (10 Sq. mm)	Each	20	642	12840.00
	51.1	P/Laying XLPE insulated / P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor Armoured of IS:7098-I/1554-1 approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, IInd class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size.				
	51.1.2	4.0 Sq.mm				

133	51.1.2.1	2 core group-2	Mtr.	700	104	72800.00
	51.1.4	10.0 Sq.mm				
134	51.1.4.3	4 core group-2	Mtre	9280	149	1382720.00
	51.1.6	25 Sq.mm				
135	51.1.6.4	4 core, group-I	Mtre	250	221	55250.00
	51.1.7	35.0 Sq.mm				
136	51.1.7.4	3.5 core, group-I	Mtre	100	245	24500.00
	51.1.8	50.0 Sq.mm				
137	51.1.8.4	3.5 core group-2	Mtre	4500	263	1183500.00
	51.1.11	120.0 Sq.mm				
138	51.1.11.4	3.5 core group-2	Mtre	2500	505	1262500.00
	51.1.13	185.0 Sq.mm				
139	51.1.13.4	3.5 core group-I	Mtre	4170	834	3477780.00
	53.1	P & Laying XLPE insulated IS:7098/II/85 of approved make H.T.cable for working voltage 11 K.V.Earthed direct in ground including excavation of 30cmx100cm size trench, 25cm layer of river sand, IInd class bricks covering, refilling earth, compaction of earth, making necessary connection testing etc.as required of size.				
140	53.1.7	3 core 185.0 Sq.mm	Metre	1800	1280	2304000.00
	53.2	Providing & making heat shrinkable type indoor/outdoor/straight through terminations/joint kit of approved make suitable for XLPE insulated 11 KV cable, with required components, preparation of cable ends, testing etc. as required of following sizes .				
	53.2.2	Outdoor				
141	53.2.2.3	3 core 120/150/185/225 Sq.mm	Set	16	3465	55440.00
	53.2.3	Straight Through				
142	53.2.3.3	3 core 120/150/185/225 Sq.mm	Set	4	8160	32640.00
143	55.1	Pipe Earthing as per IS:3043 with perforated 3.0 Mtr. Long, 40 mm dia. ' B ' class G.I. Pipe including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and C.C. finished chamber covered with hinged type with locking arrangement C.I. Cover, C.I. Frame of size 300mm x 300 mm and embodying the pipe complete with alternate layers salt and coke/ charcoal, testing of earth resistance as required.	each	20	1650	33000.00
	55.4	S & Laying following size earth wire/strip in horizontal or vertical run in ground/surface/ recess including riveting, soldering, saddles, making connection etc. as required.				
144	55.4.5	8 SWG G.I. Wire	Metre.	250	8	2000.00
	59.3	P & F IP-65 protected street light luminaire on existing bracket suitable for HPSV/ MH LAMP, made out from powder coated single piece die cast aluminium housing, electrochemically brightened and anodized POT optics aluminium reflector, heat resistant and toughened glass cover and accessories like copper ballast, electronic ignitor,				

		capacitor, holder prewired up to terminal block etc. as required including making connection testing etc. as required (without lamp)				
145	59.3.3	1 X 250 Watt group-I	Each	20	5740	114800.00
	59.12	P & F high pressure sodium vapour/ High pressure mercury vapour/ Metal halide/ halogen lamp as required				
	59.12.1	HPSV Elliptical lamp normal output				
146	59.12.1.3	250 watt group-I	Each	50	578	28900.00
	59.21	Supply and erection of Octagonal pole of following length and dimension as per table E-20 with base plate on the cement concrete foundation of M-15 grade (1:1.5:3) with the help of anchor bolts of grade 6.8 (IS 1367 P III). The pole shall be made of S-355JO grade steel sheet , folded lengthwise to obtained Octagonal shape, having single longitudinal seam weld and hot dipped galvanised internally & externally in accordance with IS 2629. The pole shall have a weatherproof flush door and locking arrangements. The complete work shall be supervised and certified by the manufacturers for satisfactory supply, erection, testing and commissioning.(SEE TABLE)				
147	59.21.4	10 Mtr. Group 1	Each	120	19600	2352000.00
	59.22	Supply, Erection and Fixing of hot dipped galvanised Overhang (60 X 3.25 mm) with cap (250 x 137.9 x 4.05 mm) over the existing poles				
148	59.22.1	Single arm overhang group 1	Each	120	935	112200.00
	59.34	P/ F IP-65/ IP-66 protected street light luminaries on existing bracket. Fixture made from powder coated single piece pressure die cast aluminium housing with heat dissipation fins on housing with high power LEDs of CREE/ NICHIA/ OSRAM/ PHILIPS make. Diffuser /glass cover for ensuring IP-65 protection for lamp and control gear compartment, system lumen output of 1500—8500 high power LED. Integrated driver shall be high efficiency having efficiency more than 85 % and in compliance to IEC standards. System life of 25000 burning hours with 70 % of initial lumens maintained. Fixture shall be in CE compliance.				
	59.34.1	IP-65 protected LED street light luminaries				
149	59.34.1.4	LED street light fixture 110-120 watt group-I	Each	120	43000	5160000.00
	60.3	Supply and erection of P.C.C./R.C.C. pole as per REC manual no 15/1979 conforming to IS: 2905/1966 as per requirement of sec3 in alignment, including excavation of pit and back filling with stone aggregate/boulders and soil in 0.45m consolidating each deposited layer of 0.45m by ramming and watering etc complete in all respect				
150	60.3.2	9.0 Mtr long as per Discom specification	Each	8	3220	25760.00

	60.4	Supply and erection of GI stay set as per Discom specification complete with long stay rod with anchor plate including stay clamps turn buckle and G.I stay wire tightened through strain insulator, in cement concrete 1:3:6 including excavation of pit-re-filling etc as reqd.				
151	60.4.2	Stay set of dia 16mm,1.8m long stay rod and anchor plate 300x300x6.4mm	Each	16	785	12560.00
	60.9	Supplying and drawing overhead steel core Aluminium conductor (ACSR) ISI marked(IS 398 part II-1996) on existing cross arms through insulator with all necessary T&P required including binding and twisting etc. complete in all respect as required as per Discom specification.				
152	60.9.5	100sqmm of (6/4.72 mm+1/1.57 mm) (Dog)	Mtr	100	89	8900.00
	60.18	Supply and fixing 11kV Disc insulator (IS 731/ 1971) with minimum creepage distance of 300mm on existing bracket including all accessories like hot dipped GI spindle and nuts etc (as per specification of Discom).				
153	60.18.1	B & S type hardware & insulator	Each	15	965	14475.00
154	60.18.2	T & C type hardware & insulator	Each	30	650	19500.00
155	60.20	Supplying and laying earth conductor from electrode to source in ground/ floor/ wall on iron saddles etc as required including making connection duly soldered or crimped 7/3.15 mm hot dipped stay wire.	Mtr	240	20	4800.00
156	60.22	Supply and fixing of piller box made of 2mm CRCA MS sheet of 415 volts 3 phase 4 wire triple pole and neutral type, complete in all respect as required. Including knife switch, HRC fuses with copper one piece U contacts base, brass studs and nuts, copper busbar for main and interconnection, MS angle frame of 50 x 50 x 6 mm grouted with C.C. of M-10 grade to achieve the height of 1.5 feet above the road level suitable for four outgoing.(400Amp capacity)	Each	2	42500	85000.00
157	60.23	Supply and fixing 100 Amp, 11kV Horn gap fuse set IS 9385 on existing DP structure with 6 nos 24kV/22kV post insulator (IS:5350 part III), hot dipped hard ware,fuse wire of required size etc. complete in all respect as per specification given by Discom. (Type tested by ERDA/CPRI)	Each	3	6050	18150.00
158	60.24	Supply and fixing of 11kV, 400 Amp 3pole, central pot rotating double break type isolator (IS:9921 part I toV) without earth blade operating mechanism with GI spring loaded reverse loop type fixed contact, solid hard drawn electrolytic copper tubular moving contact with silver/ nickel plated at end points, 9 nos post insulator of 12 kV (IS:2554 & IS 5350 part III), hot dipped galvanising hard ware, nut, bolts etc complete in all respect as per specification of Discom.(Type tested by ERDA/CPRI.)	Each	3	13200	39600.00

159	60.25	Supply and fixing of distribution type Lightening arrestor 9 kV, 5 kA (IS:3070) with mounting breaking to be installed on existing DP structure. (Type tested by ERDA/CPRI.)	Each	10	2390	23900.00
160	60.26	Supply and fixing double pole structure for 11/0.4 Kv substation as per Discom specification complete in all respect as required including nuts and bolts etc (excluding the cost of poles) made of MS channel of 4 nos 100 x 50 x 6mm and 4 nos 75 x 40 x 6mm and MS flat 50 x 6mm as per Discom specifications.	Each	5	8570	42850.00
	60.31	P&F of thermoplastic/ PVC cable junction boxes (United/ HPL make) of following sizes including clamps for holding the box, cost of DIN rail for MCB mounting, connectors for cables terminals, threaded cable glands made of polyamide material etc. complete in all respect.				
161	60.31.5	supply and installation of spike of M.S rod 20mm dia 3.0 mrt long for earthing of (tower/pole) drive into earth by mechanical means structure connecting the spike with cross arm top hamper PCC pole, lattics tower to earth etc. complete as per technical specification of DISCOM.	Each	10	650	6500.00
	71.1	Dismantling of existing LT/HTelectric lines including poles/towers, ACSR conductors, guard wires, stay wire, insulators and other electrical items of the pole coming along the alignment of the road or in the plant premises and removal and transportation as well as disposal of all the items as per the direction of engineer incharge.(Serviceable material or can-dum material.)				
162	71.1.1	Dismantling of 33KV Lattice Tower (580 kg/520kg) with all accessories brackets, tophamper, chakri, V-Cross arms guard bracket, stay, insulators (pin /disc) etc.	Each	2	3000	6000.00
163	71.1.6	Dismantling of LT line /joist/rail pole (PCC 8/9 mtr height) with existing street light fixtures, brackets, top hamper, earth guarding bracket, insulators, stay etc with ACSR conductor, 3 phase/ single phase, one neutral one earthwire and one street light phase)	Each	20	1200	24000.00
164	71.1.9	Dismantling and rerolling of 11KV conductor any type	Rmt	300	8	2400.00
165	71.1.13	Dismantling and reinstallation of 11KV Feeder pillar box any type	Each	8	3000	24000.00
	71.2	Fabrication supply and erection of new 11 KV line poles structures with all necessary required items for stringing the ACSR conductors insulators, V - cross arms, chakri, top hamper, brackets, stay and other items including reconnection of existing service lines of service connections.				
166	71.2.2	11 KV pole 10 mtr height. (single phase/3 phase) R.S joist	Each	8	10000	80000.00

167	71.4	MAIN CUBICAL PANEL / STREET LIGHT CONTROL PANEL P/F testing & commissioning of kiosk type weather proof out door main cubical panel size 750 mm X 1250 mm X 500 mm (app.) made out of 14 gauge MS sheet front and back both side openable duely hinged door with locking arrangement by providing both side held draft and all required hard wares. The cubical should be dust and vermin proof followed by coat of zimpholite primer and finally two coats of enamal gray paint. The cubical should be mounted with hard ware on angle iron frame size 50 X 50 X 6 mm and 1500 legs duly painted framed be grouted 750 mm below ground level with cement concrete 1:3:6 in 1000 X 500 X 600 mm and providing brick masonary along angle iron frame above G.L. They shall be in two section comprising as follows:	Each	5	55000	275000.00
		(i) Providing & Fixing 415 V ,TP combination double break HRC switch fuse unit ,100 Amp. Rating for incoming supply with HRC fuse 100 Amp rating and BCH/L&T/EE/ Siemens/ ABB .				
		(ii) Providing fixing timer switch TSQ 100 series 240 Volts, and full running service standered mounting with base of L & T or equivalent make including the cost of contactor and 63 amp. 50 Hz. 440/400volt.				
		(iii) P/F open busbars 25mmX3mm of required length duly covered by heat shrinkable sleeves with busbar supporters				
		(iv) Provision for residual current operated 63 Amp. 1 Pole ELCB of MA to 300 MA sensitevely as required including making connections etc.(EE/Load stop make)				
		(v) P/F Nos. 415 Volts Tpn combination double break switch fuse unit,63 Amp. Rating with HRC fuses (EE/mds/ SCHNEIDER bch/Siemens)for outgoing cable and making connection etc. also to have a provision for two nos. above switchs.				
		(vi) P/F of 3 nos. RYB phase indicator resitance type complete with lamp (Takaic/ac.). P/F HP danger plate of size 200 X 150 mm made of aluminium sheet 20 gauge.				
		(vii) P/F cable glands double compression type and Al. lugs duly crimped for incoming cable and out going up to 5mm Cables.				
		(viii) Providing 2 Nos. earth terminals including lugs and H/W duly inter connected with 8 SWG bars copper wire .				
		(ix)Inter connection of main busbar to each out going switch and swathes to cable terminal shall be with 4 sqmm PVC copper conductor duly crimped with AL lugs.				
		(x) Cable termination shall be fixed at backside of the panel with H/W and spring washers				

		(xi) Light control switch with photo senser complete unit as required				
168	71.8	Providing cut point for LT line	Each	35	800	28000.00
169	71.9	Providing cut point for 11 KV line	Each	15	1600	24000.00
170	71.12	Providing of LT distribution pillar box, LT dis connector with 400amp I/C and 200 amp 3Nos O/G with abonite 8mm sheet, size 100mmx500mmx 700mm with top tampered for distribution transformer	Each	35	8000	280000.00
171	71.14	Providing & Laying GI pipe 125mm dia B- Class	metre	170	798	135660.00
172	71.15	Providing & Laying GI pipe 150mm dia B- Class	metre	870	1050	913500.00
	72.1	Dismantling and re - erection of P.C.C./R.C.C. pole as per REC manual no 15/1979 conforming to IS: 2905/1966 as per requirement of sec3 in alignment, including excavation of pit and back filling with stone aggregate/boulders and soil in 0.45m consolidating each deposited layer of 0.45m by ramming and watering etc complete in all respect				
173	72.1.2	9.0 Mtr long as per Discom specification	Each	8	813	6504.00
	72.16	Dismantling and re-fixing11kV Disc insulator (IS 731/ 1971) with minimum creepage distance of 300mm on existing bracket including all accessories like hot dipped GI spindle and nuts etc (as per specification of Discom).				
174	72.16.1	B & S type insulator with hardware	Each	35	300	10500.00
175	72.16.2	T & C type insulator with hardware	Each	60	165	9900.00
		Machinary				
176	0168	Providing and supply of computer operator	per month	8	6000	48000.00
		LABOUR				
177	0218	Skilled Beldar	Man day	200	350	70000.00
178	0740	GI pipe 150 mm dia "B" class.	metre	100	1185	118500.00
179	RUIDP SOR 2013	Execution of items not covered in any of the schedule under tender BOQ but essentially required to complete the contractual scope of work to Complete ROB & Approaches in all respect to be executed as per site requirement and payable as per RUIDP SOR 2013 items (Civil Works)	Job	1	2000000	20,00,000.00
				TOTAL		35,95,27,700.00
				LESS 16.15% BELOW SOR		-5,80,63,723.55
				TOTAL OF SCHEDULE "A"		30,14,63,976.45

SCHEDULE - B: (NS Items)

Vehicle for Inspection

1.	NS/1	Providing One vehicles of SUV category INNOVA/ SCORPIO or equivalent with Driver and POL for requirement of Employer/ client as directed for any single day purpose movements limited to 150 kms per day & 12 hours average duty complete. (No other payment will be admissible except Toll tax and that will be reimbursable separately as per actual receipts).	Per day	50	2100	1,05,000.00
2.	NS/2	Providing One vehicles of category INDIGO/SWIFT or equivalent with Driver and POL for requirement of Employer/ client as directed limited to 3000 kms per month & 12 hours/day average duty complete. (No other payment will be admissible except Toll tax and that will be reimbursable separately as per actual receipts). This item is additional to supply of vehicle mentioned in the tender document anywhere as incidental to the work.	Per Month	8	29350	2,34,800.00
		Designing & Drawing Portion				
	NS/3	Detailed Design and Drawing Preparation Consultancy work for ROB				
3.	a	Submission of all Detailed Design, Detailed Working /Construction Drawing etc. to DFCCIL after proof checked by IIT Delhi/ NIT/any other proof checking consultant approved by DFCCIL and approved Clients and Railways for Foundation, Sub-Structure, Approaches, Launching Scheme, Super Structure and any leftover part for ROB. (Upon issue of completion certificate this item will be considered)	LS	1	220100	2,20,100.00
4.	b.	Providing design support during construction like modifications in design, redesign / clarifications as per site requirement and submission of completion drawing / report (Upon issue of completion certificate this item will be considered)	LS	1	104820	1,04,820.00
		TOTAL OF SCHEDULE "B"				**6,64.720.00**
		TOTAL COST OF WORK (Total of Schedule A & B)				**30,21,28,696.45**

Explanatory Notes for BOQ:

(i) All RUIDP SOR-2013 items contain item nos., if any discrepancy is found in nomenclature, rates, units etc. RUIDP SOR-2013will prevail.

(ii) **Contractor should bear the fact in mind while quoting the rates that rates are including all taxes (excluding GST). GST will be paid to Contractor along with on account bill** as applicable. Documentary evidence of deposition of GST will be produced by contractor.

(iii) The above quantity is approximate: -The DFCCIL reserves the right to increase / decrease the same.

(iv) The contractor should adhere to **Anti Profiteering Provisions** as per section 171 of the CGST Act. Where due to change in the rates of GST / Change in law, the contractor gets any credits / benefits, the same shall be passed on to DFCCIL by way of reduction in prices.

FORM No. 2

SAMPLE

STANDING INDEMNITY BOND FOR "ON ACCOUNT" PAYMENTS

(On paper of requisite stamp value)

We, M/s_____hereby undertake that we hold at our stores Depot/s at_____for and on behalf of the Managing Director/ DFCCIL acting in the premises through the Chief General Manager/Co/ DFCCIL/Ajmer or his successor (hereinafter referred to as "The Employer") all materials for which "On Account" payments have been made to us against the Contract for (_____) on the section DFCCIL also referred toas Group/s_____vide letter of Acceptance of Tender_____dated_____and material handed over to us by the employer for the purpose of execution of the said contract, until such time the materials are duly erected or otherwise handed over tohim.

We shall be entirely responsible for the safe custody and protection of the said materials against all risk till they are duly delivered as erected equipment to the employer or as he may direct otherwise and shall indemnify the employer against any loss /damage or deterioration whatsoever in respect of the said material while in our possession and against disposal of surplus materials. The said materials shall at all times be open to inspection by any officer authorized by the CGM,DFCCIL/Ajmer in charge of Dedicated Freight Corridor Corporation of India Limited (Whose address will be intimated in due course).

Should any loss, damage or deterioration of materials occur or surplus material disposed off and refund becomes due, the Employer shall be entitled to recover from us the 85% of supply portion of the Contract (as applicable) and also compensation for such loss or damage if any long with the amount to be refunded without prejudice to any other remedies available to him by deduction from any sum due or any sum which at any time hereafter becomes due to us under the said or any other Contract.

Dated this day_____day of_____200
For and on behalf of
M/s_____(Contractor)
Signature of witness
Name of witness in Block letter.

Address.

Form no.3

PRE CONTRACT INTEGRITY PACT

General

Thispre-bidpre-contractAgreement(hereinaftercalledtheIntegrityPact)ismadeon----------
----------day of the month of---------- , between, on one hand, the DFCCIL acting through Shri ---------- Designation of the officer, (hereinafter called the CLIENT, which expression shall mean and include, unless the context otherwise requires, his success or sin office and assigns)of the First Part and M/s----------represented by Shri---
----------Chief Executive Officer (hereinafter called the "BIDDER/SELLER" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second part.

WHEREAS the CLIENT proposes to procure (Name of the Stores/Equipment/Item, Name of the Consultancy Service, Name of Works Contract, Name of Services) and the BIDDER is willing to Offer/has offered for stores or works.

WHEREAS the BIDDER is a private company/ public company/ Government undertaking/ partnership/ registered export agency, constituted in accordance with the relevant law in the matterandtheCLIENTisaPSUperformingitsfunctionsorbehalfofthePresidentofIndia.

NOW, THEREFOR,

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

Enabling the CLIENT to obtain the desired said (Name of the Stores/Equipment/Item, Name of the Consultancy Service, Name of Works Contract, Name of Services) at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure Contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the CLIENT will commit to prevent corruption, in any form, by its Officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Commitments of the CLIENT

1.0 The CLIENT undertakes that no official of the CLIENT, connected directly or indirectly with the Contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER either for themselves or for any person, organization or third party related to the Contract, in exchange for an advantage in the biddingprocess,bidevaluation,contractingorimplementationprocessrelatedtotheContract.

1.1 The CLIENT will, during the pre-contract stage, treat all BIDDERs alike, and will provide to all BIDDERs the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERs.

1.2 All the officials of the CLIENT will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2. Incaseanysuchprecedingmisconductonthepartofsuchofficial(s)inreportedbythe BIDDER to the CLIENT with full, and verifiable facts and the same is prima facie found to be correct by the CLIENT, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the CLIENT and such a person shall be debarred from further dealings related to the Contract process. In such a case while an enquiry is being conducted by the CLIENT the proceedings under the Contract would not be stalled.

Commitments of BIDDERS

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post- contract stage) in order to secure the Contract or in furtherance to secure it and in particular committee itself to the following:-

3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission fees, brokerage or inducement to any official of the CLIENT, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the (B] in exchange for any advantageinthebidding,evaluation,contractingandimplementationoftheContract.

3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any Material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the CLIENT or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the Contractor any other Contract with the Government for

Showing or forbearing to show favour or dis favour to any person in relation to the Contract or any other Contract with the Government.

3.3 *BIDDER shall disclose the name and address of agents and representatives and Indian BIDDER shall disclose their foreign principals or associates.

3.4 * BIDDER shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.

3.5 The BIDDER further confirms and declares to the CLIENT that the BIDDER is the original manufacturer/ integrator/ authorized government sponsored export entity of the defense stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the CLIENT or any of its functionaries, whether officially or unofficially to the award of the Contract to the BIDDER nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

3.6 The BIDDER either while presenting the bid or during pre-contract negotiations or before signing the Contract shall disclose any payments he has made, is committed to or intends to make to officials of the CLIENT or their family members, agents, brokers or any other intermediaries in connection with the Contract and the details of services agreed upon for such payments.

3.7 The BIDDER will not collude with other parties interested in the Contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the Contract.

3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the CLIENT as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the, BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or Indirectly, is a relative of any of the officers of the CLIENT, or alternatively, if any relative of an officer of the CLIENT has financial.

Interest/stake in the Bidder's firm, the same shall be disclosed by the BIDDER at the time of filling of tender.

The term 'relative' for this purpose would be as defined in section 6 of the companies' act 1956.

3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or in directly, with any employee of the CLIENT.

4. Previous Transaction

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any public sector enterprise in India or any Government department in India that could justify BIDDER's from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the ender process or the contact, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

5.1 While submitting commercial bid, the BIDDER shall deposit an amount_____(to be specified in RFP) as Earnest Money/Security Deposit, with the CLIENT through any of the following instruments:-

i. Bank draft or a pay order in favour of_____.
ii. A confirmed guarantee by an Indian nationalized bank, promising payment of the guaranteed sum to the CLIENT on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the CLIENT shall be treated as conclusive proof or payment.
iii. Any other mode or through any other instrument (to be specified in the RFP).

5.2 The earnest money/Security deposit shall be valid up to a period of five years or the contractual obligations to the complete satisfaction of both the BIDDER and the CLIENT, including warranty period, whichever is later.

5.3 In case of the successful BIDDER a clause would also be incorporated in the article pertaining to performance Guarantee in the Contract that the provisions of sanctions for violation shall be applicable for forfeiture of performance bond in case of a decision by client to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

5.4 No interest shall be payable by CLIENT to the BIDDER on earnest Money/Security Deposit for the period of its currency.

6. Sanctions for Violations

6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER shall entitle the CLIENT to take all or any one of the following actions, wherever required: -

(i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the [A]. However, the proceedings with the other BIDDER(s) would continue.

(ii) The earnest money deposit (in pre-contract stage) and/or security Deposit/performance Bond (after the Contract is signed) shall stand forfeited fully and the CLIENT shall not be required to assign any reason therefore.

(iii) To immediately cancel the Contract, if already signed, without giving any compensation to the[A].

(iv) To recover all sums already paid by the CLIENT, and in case of an Indian
[A] with interest thereon at 2% higher that the prevailing prime lending rate of state bank of India, while in case of a BIDDER from the country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to BIDDER from the CLIENT in connection with any other Contract, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond, if furnished by the [A], in order to recover the payments, already made by CLIENT, along with interest.

(vi) To cancel all or any other contracts with the BIDDER. The BIDDER shall be liable to paycompensationforanylossordamagetotheClientresultingfromsuchcancellation/rescission and the client shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the CLIENT.

(viii) To recover all sums paid in violation of this pact by BIDDER to any middleman or agent or broker with a view a view to securing Contract the contract.

(ix) In cases where irrevocable letters of credit have been received in respect ofanyContractsignedbytheclientwiththeBIDDER,Theshallnotbeopened.

(x) Forfeiture of Performance Bond in case of a decision by the client to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

6.2 Theclientwillentitledtotakealloranyoftheactionsmentionedatpara6.1(i)to

(x) of this pact also on the commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the [A], of an offence as defined in chapter IX of the Indian penal code, 1860 or prevention of CorruptionAct,1988oranyotherstatuteenactedforpreventionofcorruption.

6.3 The decision of the CLIENT to the effect that a breach of the provisions of this pact has been committed by the BIDDER shall be final and conclusive on the [A]. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

7.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is foundatanystagethatsimilarproduct/systemorsubsystemswaysuppliedby BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the CLIENT ,if the Contract has already been concluded.

8. Independent Monitors

8.1 The CLIENT has appointed Independent Monitors (hereinafter referred to as Monitors) for this pact in consultant with the central vigilance commission (Names and addresses of the Monitors to begiven)

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this pact.

8.3 The monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the CLIENT

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the CLIENT including that provided by the BIDOER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid Interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be und 'contractual obligation to treat the information and documents of the

[A] With confidentiality.

8.7 The client will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the

option to participate in such meetings.

8.8 The monitor will submit a written report to the MD/DFCCIL within 8 to 10 weeks from the date of reference or intimation to him by the CLIENT/BIDDER and, should the occasion arise, submit proposal for correcting problematic situations.

9. Facilitation of investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the CLIENT or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall exte4nd all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This pact is subject to Indian law. The place of performance and jurisdiction is the seat of the CLIENT.

11. Other Legal Actions

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

12. Validity

12.1 The validity of this integrity pact shall be from date of its signing and extend up to 5 years or the complete execution of the Contract to the satisfaction of both the CLIENT and the BIDDER including warranty period, whichever is later. In case BIDDER is unsuccessful, this integrity pact shall expire after six months from the date of the signing of the Contract.

12.2 Should one or several provisions of this pact turn out to be invalid; the remainder of this pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this integrity pact at……On…….

CLIENT	BIDDER
Name of the Officer	
Designation	
Deptt./Ministry/PSU	
Witness	Witness
1._____	1.----------
2._____	2._____

Form No. 4

ANTI-PROFITEERING DECLARATION

TO WHOMSOEVER IT MAY CONCERN

I……., age……,years, Son/Daughter of……., resident of …….. Do solemnly affirm and state as under:

1) That Iam the_____<Designation of the authorized signatory> of ……. And I am duly authorized to furnish this undertaking/declaration on behalf of …… (Name of the company).

2) That …… (Name of the company) has been awarded the work …… (Name of Work) vide Letter of Award number …….. Dated ……. by M/s Dedicated Freight Corridor Corporation of India Limited.

3) That the Company is fully aware of the anti-profiteering provision under the Goods & Services Tax ("GST")Law(s),

4) That the Company …….. Has passed the benefit of input tax credit available on the……..……..(good/services)having HSN……. supplied to M/s Dedicated Freight Corridor Corporation of India Limited which it is getting on account of reduced tax liability and input tax credit because of enactment of GST Laws after introduction of Goods and Service Tax w.e.f. 1^{s1} July, 2017. The details and amounts being passed on to DFCCIL are provided in Annexure ..... Of this document and areas per applicable GST Laws. These are true and correct to the best of my knowledge, information and belief.

5) Further, it is to confirm also that in case …….. (name of the organization) will receive any further benefit in future after 1st July, 2017 by way of availment of input tax creditswhichwerenotallowedtobeavailedbefore1^{sl}July,2017orreductionintaxrates

or in any other manner which results in reduction of cost of the goods/services supplied to M/s Dedicated Freight Corridor Corporation of India Limited, then Company will pass that benefit to M/s Dedicated Freight Corridor Corporation of India Limited also.

6) That I declare that the foregoing is true and correct and the same is a legal obligation and failure to fulfil it could result in penalties under the law.

7) 1 confirm that I am aware of the implication of the above undertaking and our liability on account of incorrect/misleading declaration under the GST Laws.

Signature of the Authorized signatory/ person

Name and Designation of the Auth. Sign/person of the person

Name of the Organization and Seal

Executed on a non-judicial stamp paper of Rs.100/- duly notarized by notary public

ANNEXURE-I

(Para 16.1(a) of General Instructions) & clause No. 14 (i), (ii) Part-I of GCC-2020, with up to date correction slip

1.	Full name of the firm	:
2.	Registered Head Office Address	:
3.	Branch Office in India (If any)	:
4.	Constitution of firm (whether Sole proprietorship firm/Partnership firm/ Limited Company/Joint Venture (JV)/Registered Society/ Registered Trust /LLP/HUF etc.)	:
5.	Bank account details of the firm i.e. Account No., name of bank and bank specific code number (MICR & IFSC) to facilitate electronic payment	
6.	Detail of PAN of the firm	
7	E Mail ID	

I/we declare that the …… is not blacklisted or debarred by Railway/DFCCIL or any other Ministry / Department of Govt. of India 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. I/ We are aware that concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract.

Note:- 1. Please enclosed-
(i) Attested copy/copies of the constitution of their firm
(ii) Copy of PAN CARD.

2. Tender document has to be signed by such persons as may be legally competent to sign on behalf of the firm, company, association, HUF, LLP, trust or society as the case m

Date: Signature of Tenderer/s

With Seal

ANNEXURE-II

(Para 16.1(b) of General Instructions)
& clause No. 6.1 &11(iv) Part-I of GCC-2020, with up to date correction slip

FORMAT FOR CERTIFICATETO BE SUBMITTED / UPLOADED BYTENDERERALONGWITH THE TENDER DOCUMENTS

I…….. (Name and designation) ** appointed as the attorney/ authorized signatory of the tenderer (including its constituents), M/s……. (hereinafter called the tenderer) for the purpose of the Tender documents for the work of…… As per the tender No…… of (DFCCIL), do hereby solemnly affirm and state on the 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 Indian Railway Electronic procurement System website www.ireps.gov.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 the DFCCIL Administration 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 understand that if the certificates regarding eligibility criteria 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 tender EMD besides banning of business for a period of up to five year. Further, I/we (*insert name of the tenderer*) ** ---------- and all my/our constituents understand that my/our offer shall be summarily rejected.
8. I/we also understand that if the certificate 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 EMD/SD and Performance guarantee besides any other action provided in the contract including banning of business for a period of up to five year.

SEAL AND SIGNATURE
OF THE TENDERER

Dated:

** The contents in Italics are only for guidance purpose. Details as appropriate are to be filled in suitably by tenderer..

"ANNEXURE -III"

(Para 16.0(c)(i) of General Instructions) &
Clause No. 10.1(a) and explanation to clause 10 -part I of GCC 2020

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

SN	Name of work	Name of organization for whom work physically completed	Type of organization for whom work executed	Contract Agreement No. & Date	Original value of contract agreement	Final value of contract as completed	Payment received till opening of present tender (On account/final bill)	Time taken for completion of work		Principal feature of the work in brief
								Date of award of contract	Date of actual completion	
1	2	3	4	5	6	7	8	9	10	11
1.										
2.										

Date:

Signature of Tenderer/s
With Seal

Note:-

(i) Above detail should be given only for works which have been physically completed in all respects, for the similar nature work defined in clause 15.5 above. Part completed work shall not be considered.

(ii) Certificate from Private individual for whom such works are executed shall not be considered for eligibility of tenderers.

(iii) The tenderers should attach self-attested copy of certificate issued by the organizations for whom the work was carried out in the proforma as per Annexure-IV-A, IV-B, IV-C as applicable.

(iv) In column 4 type of organization is to be mentioned viz. Central/ State Governments /Public Sector Undertaking/Public Funded Institutions/Municipal Bodies /DFCCIL Siding owners /Concessionaire/ Public listed company.

(v) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of advertised value of the tender (for works without composite components).

(vi) No technical and financial credentials are required for tenders having value up to Rs.50 lakhs.

(vii) 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.

(viii) 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.

(ix) If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.

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

(xi) For col no 7, the value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work.

(xii) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the details of successfully completed works of similar nature (that defined for the Secondary Component), executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above performa.

Attested copy of Completion Certificate of works mentioned in para (c) above from (xiii) the Organizations with whom they worked as per performa given in **Annexure-IVA or IV-B or IV-C** as applicable**.**

ANNEXURE-IV(A)

(Para 16.1 (d) and Note to para 15 Note No.(ii) b of General Instructions)
Clause No. 11(i), and explanation to clause 10 of part I of GCC 2020

COMPLETION CERTIFICATE

Name of Organization

Postal address, Phone No., Email ID, Fax No

Letter **No**. Date:-…….

1	Name of work	
2	Contract Agreement (C/A) No. and date	
3	Name of Firm with address	
4	Nature of entity (Sole Prop./Partnership firm/company/Joint Venture firm/Registered Society /registered Trust etc.)	
5. (i)	In case of Partnership firm/JV/……. Name and % share of individual partners/members.	
(ii)	In case of Sole Proprietorship, the name of sole proprietor	
6.	Original value of contract agreement.	
7	Completion Cost of Work	
7.1	in case final payments have been made- Contract Cost in last approved variation statement plus PVC amount paid	
7.2	in case final bill is pending -	
(i)	the contract cost in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid up to last on-account bill including PVC amount and statutory deductions	
8.	Date of award of contract	
9.	Has the work physically been completed in all respect as per contract agreement?	(Yes / No)
10.(i)	If yes, then actual date of physical completion.	
(ii)	Whether extension to DOC given with penalty or without penalty	
11	Total payment made in above contract till the date of inviting of present tender along with financial year –wise break-up	
12	In case of composite work: (See note (vii) below) Payment made for relevant distinct component of the work, out of total payment made under Sr. No. 7 above.	

12.1	In case final payments for the component have been made- Cost of component in contract in last approved variation statement plus PVC amount paid	
12.2	In case final bill is pending -	
(i)	The Cost of component in contract in last approved variation statement plus PVC amount paid	
(ii)	Cumulative amount paid for the component up to last on account bill including PVC amount and statutory deductions	
13	Performance of Contractor (Satisfactory/Unsatisfactory)	

I hereby certify that above mentioned work has been physically completed in all respect as per contract agreement. Performance of the contractor while executing the work had been satisfactory.

(Signature)
Date- Name and Designation of officer
Mobile No. of officer
Seal of officer

Note:-

(i) Submission of false certificates by tenderer shall lead to, forfeiture of EMD and other action including penal action (Annexure-II).

(ii) Copy of certificate duly self-attested shall be submitted along with tender document.

(iii) Payment made as indicated in above certificate (At Sr. No. 11/ Sr. No. 12) will be considered as value of completed work for the purpose of eligibility under special technical criteria.

(iv) Above format is for guidance only. Any certificate containing information asked for shall be considered.

(v) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of advertised value of the tender (for works without composite components).

(vi) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of cost of any component of work in separate sheet (for work with composite components).

(vii) Only those works will be treated as composite works which consist of more than one distinct component of work such as Civil Engg. Works, S&T work, Electrical work, OHE work etc. and there is separate schedule for each such distinct components in the tender documents.

(vii) No technical and financial credentials are required for tenders having value upto Rs. 50 lakhs.

(viii) 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.

(ix) 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.

(x) If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.

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

(xii) For col 7 & 12 -The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work/ component.

(xiii) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the Attested copy of Completion Certificate of works executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above Performa.

ANNEXURE-IV-(B)

(Para 16.1(d) and Note to para 15 Note No.(iii) b of General Instructions)
Clause No. 11.(i), and explanation to clause 10 of part I of GCC 2020

COMPLETION CERTIFICATE

(If the work is awarded by Concessionaire)

Name of Concessionaire
Address and Contract details i.e.
Phone No. FAX, e-mail.

Letter **No**. Date:-…….

1.1	Name of work /Project executed by the Concessionaire	
1.2	Name and Address of Authority which awarded work to the Concessionaire.	
1.3	Name of work awarded by the Concessionaire to the firm.	
2.	Contract Agreement (C/A) No. and date	
3.	Name of Firm with address	
4.	Nature of entity (Sole Prop./Partnership firm/company/Joint Venture firm/Registered Society /registered Trust etc.)	
5. (i)	In case of Partnership firm/JV/……. Name and % share of individual partners/members.	
(ii)	In case of Sole Proprietorship, the name of sole proprietor	
6.	Original value of contract agreement.	
7	Completion Cost of Work	
7.1	in case final payments have been made- Contract Cost in last approved variation statement plus PVC amount paid	
7.2	in case final bill is pending -	
(i)	the contract cost in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid up to last on-account bill including PVC amount and statutory deductions	
8.	Date of award of contract	
9.	Has the work physically been completed in all respect as per contract agreement?	(Yes / No)
10. (i)	If yes, then actual date of physical completion.	
(ii)	Whether extension to DOC given with penalty or without penalty	
11.	Total payment made in above contract till the date of opening of present tender along with financial year –wise break-up	
12	In case of composite work: (See note (vii) below) Payment made for relevant distinct component of the work, out of total payment made under Sr. No. 7 above.	
12.1	in case final payments for the component have been made- Cost of component in contract in last approved variation statement plus PVC amount paid	
12.2	in case final bill is pending -	
(i)	the Cost of component in contract in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid for the component up to last on account bill including PVC amount and statutory deductions	
13.	Performance of Contractor (Satisfactory/Unsatisfactory)	

I hereby certify that above mentioned work has been physically completed in all respect as per contract agreement. Performance of the contractor while executing the work had been satisfactory.

Signature & Name of Authorized Person
of the Concessionaire with Seal and
Mobile No. of Issuing Person.

Note:-

(i) Submission of false certificates by tenderer shall lead to, forfeiture of EMD and other action including penal action (Annexure-II).

(ii) Copy of certificate duly self-attested shall be submitted along with tender document.

(iii) Payment made as indicated in above certificate (At Sr. No. 9/ Sr. No. 10) will be considered as value of completed work for the purpose of eligibility under special technical criteria.

(iv) Above format is for guidance only. Any certificate containing information asked for shall be considered

(v) A self-attested copy of LOA and concessionaire agreement executed between concessionaire & Authority at Sr. No 1 above shall be submitted along with this completion certificate.

(vi) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of advertised value of the tender (for works without composite components).

(vii) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of cost of any component of work in separate sheet (for work with composite components).

(viii) Only those works will be treated as composite works which consist of more than one distinct component such as Civil Engg. Works, S&T work, Electrical work, OHE work etc. and there is separate schedule for each such distinct components in the tender documents

(ix) No technical and financial credentials are required for tenders having value upto Rs. 50 lakhs

(x) 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.

(xi) 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.

(xii) If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.

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

(xiv) For col 7 & 12 -The value of final bill including PVC amount-if paid, or otherwise, Incase final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work/ component.

(xv) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the Attested copy of Completion Certificate of works executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above Performa.

ANNEXURE-IV-(C)

(Para 16.1 (d) and Note to para 15 Note No.(iii) c of General Instructions)
Clause No. 11(i), and explanation to clause 10 of part I of GCC 2020

COMPLETION CERTIFICATE

(If the work is awarded by Public listed company)

Name of the public listed company
Address and Contract details i.e. Phone No. FAX, e-mail.
Letter **No**. Date:-…….

1.1	Name of work /Project	
1.2	Name and Address of the public listed company	
1.3	Number as incorporated/ registered in the National stock exchange or Bombay stock exchange	
1.4	Date of getting listed in NSE/BSE (document to be attached as per note (vi) below).	
1.5	Average Annual turnover of the public listed company in last three financial years excluding current financial year. (details to be attached as per proforma in annexure VIII as per note (vii) below)	
2.	Contract Agreement (C/A) No. and date	
3.	Name of Firm with address	
4.	Nature of entity (Sole Prop./Partnership firm/company/Joint Venture firm/Registered Society /registered Trust etc.)	
5. (i)	In case of Partnership firm/JV/……. Name and % share of individual partners/members.	
(ii)	In case of Sole Proprietorship, the name of sole proprietor	
6.	Original value of contract agreement.	
7	Completion Cost of Work	
7.1	in case final payments have been made- Contract Cost in last approved variation statement plus PVC amount paid	
7.2	in case final bill is pending -	
(i)	the contract cost in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid up to last on-account bill including PVC amount and statutory deductions	
8.	Date of award of contract	
9.	Has the work physically been completed in all respect as per contract agreement?	(Yes / No)
10. (i)	If yes, then actual date of physical completion.	
(ii)	Whether extension to DOC given with penalty or without penalty	
11.	Total payment made in above contract till the date of opening of present tender along with financial year –wise break-up	
12	In case of composite work: (See note (vii) below) Payment made for relevant distinct component of the work, out of total payment made under Sr. No. 7 above.	
12.1	in case final payments for the component have been made- Cost of component in contract in last approved variation statement plus PVC amount paid	

12.2	in case final bill is pending -	
(i)	the Cost of component in contract in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid for the component up to last on account bill including PVC amount and statutory deductions	
13	Performance of Contractor (Satisfactory/Unsatisfactory)	

I hereby certify that above mentioned work has been physically completed in all respect as per contract agreement. Performance of the contractor while executing the work had been satisfactory.

Date

Signature & Name of Person Authorized
By the Public listed Company with Seal and
Mobile No. of Issuing Person.

Note:-

Following documents regarding the **Public listed company** are required to be submitted along with the certificate **(Mandatory)**

1. Details of Average Annual turnover of the public listed company in last three financial years excluding current financial year (should be 500 Cr and above) issued by Chartered Accountant. These details need to be submitted as per the proforma of Annexure VIII.

2. The copy of the documents regarding listing in the National stock exchange or Bombay stock exchange with details of status of listing as on date of opening of tender, duly self-attested.

3. The copy of the document of incorporation/ registration of the Public listed company (should be at least 5 years prior to date of opening of tender), duly self-attested.

4. The copy of document regarding Person Authorized by the Public listed Company to issue such certificate, duly self-attested.

5. 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 a copy of final/last bill paid by the public listed company in support of above work experience certificate duly self-attested.

(i) The certificate shall not be taken into consideration if any of the above conditions, prerequisites is not fulfilled or required supporting mandatory documents are found deficient. Submission of false certificates by tenderer shall lead to, forfeiture of EMD and other action including penal action (Annexure-II).

(ii) Above format is for guidance only. Any certificate containing required information asked for shall be considered

(iii) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of advertised value of the tender (for works without composite components).

(iv) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of cost of any component of work in separate sheet (for work with composite components).

(v) Only those works will be treated as composite works which consist of more than one distinct component such as Civil Engg, Works, S&T work, Electrical work, OHE work etc. and there is separate schedule for each such distinct components in the tender document

(vi) 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.

(vii) 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.

(viii) If a part or a component of work is completed but the overall scope of contract is not **completed**, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.

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

(x) For col 7 & 12 -The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work/ component.

(xi) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the Attested copy of Completion Certificate of works executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above Performa.

ANNEXURE-V

(Para 16.1 (e) of General Instructions) **(Clause No.10.3** and explanation to clause 10 of **Part-I of GCC-2020, with up to date correction slip)**

LIST OF AWARDED WORKS UNDER EXECUTIONAND/OR WORK AWARDED BUT NOT YET STARTED TILL DATE OF OPENING OF TENDER

(Mandatory for tenders more than Rs. 20 Cr value wherein eligibility criteria includes Bid Capacity also, to evaluate Bid Capacity of tenderer)

Sr. No	Name & place of work	Organization for whom work is being carried out	Date of award of contract, Contract Agreement No. & Date	Original cost of work /Revised Cost (up to latest corrigendum)	Date of Completion (Original/ Extended)	Payment Received Till Date of opening of present tender	Balance amount of the work to be executed	Balance period of work to be executed	' B' Value of work to be done in ' N' years (See note .....below)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(5)-(7)	(9)	(10)
1									
2									
3									
4									
								Total	

Date

Signature of Chartered Accountant

Signature of Tenderer/s with seal

NOTE :-

(a) This statement should be submitted duly verified by Chartered Accountant.

(b) In case of no works in hand, a 'NIL' statement should be furnished duly verified by charted Accountant.

(c) In case of JV firm, the details of works with each member of JV is required to be submitted duly verified by Chartered Accountant.

(d) In case, the tenderer/s failed to submit the above statement along with offer, their/his offer shall be considered as incomplete and will be rejected **summarily**.

(e) N for column 10 –Number of years prescribed for completion of work for which bids has been invited.

(f) 'B' is the value of existing commitments and balance amount of ongoing works with the tenderer to be completed in next 'N' years.

(g) For N equal or more than column (9) , Value of 'B'will be same as column (8)

(h) For contracts not having any defined part financial /physical completion stages /milestones, and N < column (9) then the value of 'B' will be as per formula B=(8)*N/(9)

(i) In case part financial / physical completion stages / milestone is defined in the contract's value of 'B' shall be calculated accordingly.

(j) No technical and financial credentials are required for tenders having value uptoRs. 50 lakhs

. **ANNEXURE-VI**

(Para 16.1 (g) of General Instructions)

Clause No.11(iii) Annex.I of Part-I of GCC-2020 ,
with up to date correction slip.

LIST OF PLANTS & MACHINERY AVAILABLE ON HAND AND PROPOSED TO BE INDUCTED (OWN AND HIRED TO BE GIVEN SEPARATELY) FOR SUBJECT WORK.

Sr. No.	Particulars of Plants/Machinery	No. of Unit	Kind and make	Capacity	Age & Conditions	Owned by firm	Proposed to be purchased	
							Date of placing order	Likely date of receipt
1	2	3	4	5	6	7	8	9
1								
2								
3								
4								
5								
6								
7								

Note:

(a) Indicate clearly, whether (i) Owned by firm, or (ii) To be purchased by firm giving date of placing order and likely date of receipt.

(b) Optimum Plants and Machineries required to be deployed during execution of work.

(i) Earthwork in formation of New Line / Doubling/ Gauge Conversion Project: Poclain, JCB, Vibratory Roller, Grader, Dumpers, Tractors, Water tank etc.

(ii) Concreting work for bridge work: Concrete pump, Transit mixer as per requirement, Batching plant of suitable capacity, JCB, Needle vibrator 60/40mm etc.

Signature of Tenderer/s

Dated:----------

ANNEXURE-VII

(Para 16.1 (h) of General Instructions) **Clause No.11 (iii) Annex.I of Part-I of GCC-2020, with up to date correction slip.**

LIST OF PERSONNEL ORGANIZATION AVAILABLE ON HAND AND PROPOSED TO BE ENGAGED FOR THE SUBJECT WORK.

Sr. No.	Name & Designation	Qualification	Professional experience	Remarks
1.	2	3	4	5
1				
2				
3				
4				
5				
6				
7				
8				

Signature of Tenderer/s
Dated:----------

ANNEXURE-VIII

(Para 16.1 (k) of General Instructions)

Clause No.10.2 and 11(ii) Annex.I of Part-I of GCC-2020, with up to date correction slip

(ON THE LETTER HEAD OF CHARTERED ACCOUNTANT)

To,
CPM
DFCCIL, Ajmer.

Sub: - Contractual receipts of M/s (Name of firm)…….

……

It is to certify that contractual receipts of M/s (Name of firm)…….during current financial year and preceding three financial years as extracted from audited balance sheets are as under :-

Sr. No.	**Financial year**	**Contractual Receipts**	***Extracted from Source document (Audited balance sheet/certificate issued by the employer/ client / Tax deduction at source certificate)**
1.	Current year (Say A)		
2.	A-1		
3.	A-2		
4.	A-3		

*In case the Audited balance sheet is not available for the current financial year and/or immediate preceding financial year then the contractual receipts extracted from certificate issued by the employer/ client/ Tax deduction at source certificate, shall be considered for evaluation of the financial capacity of the tenderer.

Yours sincerely,

Date: …

(Name & Sign. Of Authorized Signatory)

Seal of firm

Registration No:-
E-Mail:- Phone:-
FAX:-

Note : Client certificate from other than Govt Organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India.

ANNEXURE-IX
(Para 9.0 (ii) of General Instructions)

CERTIFICATE

(For sole proprietorship firm / Sole proprietorship firm participating as member of JV)

I……..… (Indicate Name of Sole prop) S/o ……..…(Full address of Sole prop) Proprietor of M/s…….…….. (Indicate Name of Proprietary firm) situated at ……(Full address of Sole prop firm) do hereby solemnly affirm & declare as under:-

1. That I, who is submitting the tender on behalf of the **SOLE PROPRIETOR** is the **Proprietor** of the firm working in the name & style of M/s……. ……..

(Indicate Name – Proprietary firm) at ……

Deponent

Signature and Seal

VERIFICATION

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

Deponent

Signature and Seal

Place:-

Date:-

Note: - The stamp duty shall be governed by the provision of the Law relating to stamp in Force in that State at the time when such AFFIDAVIT is being executed. Affidavit shall be affirmed before the Notary Public.

ANNEXURE-X

(Para 16.2.6 (a) of General Instructions) Clause No. 17.6 of Annex.I Part-I of GCC-2020, with up to date correction slip)

MEMORANDUM OF UNDERSTANDING FOR JV

(The Memorandum of Understanding shall be submitted in following format on the nonjudicial stamp of Rs.500/- duly notarized by Notary Public)

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 Shri……and 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 heir's 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 on ……..in 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 (DFCCIL) 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 the DFCCIL 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 Mr./Ms …… …… …… …… …….. ……..…one 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. In case the offer is submitted by the person other than those who is appointed as above and there is difference between the name of the person authorized as above and the person who digitally submitted the offer then our offer shall be deemed to be summarily rejected.

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 (DFCCIL) 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 DFCCIL 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.. I/ We are aware that concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract.

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 & full address:-

1…….

2……...

Date……

Place…….

NOTE: - Should MOU be in more than one separate page, each page shall be Signed by the authorized signatory.

Annexure-XI

(Para 16.2.6.2(b) of General Instructions)
Clause No. 17.14.1 of Annex. I Part-I GCC 2020)

"LETTER OF CONSENT"
(To be submitted by Partnership Firm participating as member of JV)

We the following partners of M/s…… (Indicate name of firm)

(1)……..…(2)……

(3)……..……(4)……

(5)……..…(6)……having its office at ……..hereby give our consent on behalf of M/s……. ……..(Indicate name of firm) in favour of Mr…….. (Indicate name of Partner), whose specimen signature are appended below, for entering into Joint Venture Agreement with M/s…… (Indicate name of other firm's)…… having office at ……. in connection with T. No……Name of work …… to sign & execute the MOU, JV agreement and all other required documents pertaining to above said tender on behalf of firm.

We have read the contents of this letter of consent & accept the same and we hereby agree to and ratify all acts, deeds & things of them or any documents executed by the said partner in the scope of this letter of consent on behalf of firm.

This letter of consent is made at ……. on ……

Name & Signature of Partner/s

(Signature of Sh……..)

DATE..... 1. .....

2. .....

3. .....

Place..... 4. .....

5. .....

Seal of the Firm

Note:- The stamp duty of Rs. 500/- or shall be governed by the provision of the Law relating to stamp in force in that State at the time.

Annexure-XII

(Para 16.2.6.1 of General Instructions) & clause No. 17.14.2, 17.14.3 © and cl.15 of Annex I Part-I of GCC-2020, with up to date correction slip

SPECIAL POWER OF ATTORNEY

(To be submitted by Private/Limited Companies, Sole Proprietor or HUF participating as member of JV)

BE IT KNOWN to all that I …….. (Indicate name of Director/Sole Prop.)…… at the Company/Proprietary firm/HUF (Indicate Name of Company / Sole Proprietary firm/ HUF)
……. having its office at …… do hereby for and on behalf of the said Company/Proprietary firm/HUF appoint Sh.…….S/o Shri ……age….. (Indicate Name of Nominee with full address) of the Company/Prop. Firm/HUF as our Attorney, whose specimen signature are appended below to execute the MOU/ JV Agreement & all other required documents with M/s ……. (Indicate Name of other Co. /Prop. firm)…….. Situated
at ……
in connection with the following tender invited by DFCCIL:-

"T.No……Name of work……
……..……""

We/ I have read the content of this Special Power of Attorney & accept the same, and we/ I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

In witness where of I……. (Indicate name of Director/ Sole Prop/ Karta.) Of M/s…… (Indicate name of Co. / Prop. Firm/HUF) the above named Director / Proprietor has executed this Power of Attorney.

For M/s……

(Sign. of Shri……) (Sign& Seal …….) Place…

Date:-…….

The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.
(For private/ limited company as member of JV- the annexure XII is required even if MOU/JV agreement is signed by the authorized/ Power of attorney holder himself as per the Copy of Resolution)
(For sole proprietor firm/HUF as member of JV- Not required if MOU/JV agreement is signed by the proprietor of the sole proprietor firm/ karta of HUF himself)

Annexure-XIII

(Para 16.2.2 (b) of General Instructions)
& clause No. 14 (a)(ii), 15 Annex I Part-I of GCC-2020, with up to date correction slip

SPECIAL POWER OF ATTORNEY
(For Partnership Firms only)

BE IT KNOWN to all that we (1) ……..…….. (2)……..…….. (3)……(4)……..……..(5)…….……. all the partners of the firm…… having its registered office at ……..……. do hereby, for and on behalf of the said firm appoint Shri…… (Name& designation) Special Attorney of the said firm and authorize the said Shri…….…… (name), whose specimen signature are appended below, to do all or any of the following acts deeds and/or things on behalf of the said firm and to represent the firm in respect for the tender No……. (Name of work)…… invited by DFCCIL.

1. To appear before office of DFCCIL related to the process of tendering for the above said tender.
2. To procure/download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.infor the said Tender. In case the offer is submitted by the person other than those who is appointed as above and there is difference between the name of the person authorized as above and the person who digitally submitted the offer then our offer shall be deemed to be summarily rejected.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL.
5. To sign the agreement and other relevant documents & receive payment on behalf of firm,
6. To co-ordinate measurement through contractor's authorized engineer, witness measurement, sign measurement books on behalf of firm.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration.

We/ I have read the content of this Special Power of Attorney & accept the same and We/I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

	Executants Partner
(Signature of Sri……)	(Name & signature)
DATE ……	1.....
	2.....
	3.....
Place :-	4.....
Seal of Firm	Seal of Firm

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.
(Required even if one or more Partners are authorized in the Partnership Firm to sign on behalf of the Firm)

Annexure-XIV

(Para 16.2.1 (b) of General Instructions) & clause No. 15 Annex I Part-I of GCC-2020, with up to date correction slip

SPECIAL POWER OF ATTORNEY

(For Sole Proprietor Firm only) BE IT KNOWN

to all that I Sole Proprietor of the firm …… having its registered office at ……..……. do hereby, for and on behalf of the said firm appoint Shri…… (Name& designation with full address) Special Attorney of the said firm and authorize the said Shri…….…… (name) whose specimen signature are appended below, to do all or any of the following acts deeds and/or things on behalf of the said firm and to represent the firm in respect for the tender No……. (Name of work)…… invited by DFCCIL.

1. To appear before office of DFCCIL related to the process of tendering for the above said tender.
2. To procure/download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.infor the said Tender.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL.
5. To sign the agreement and other relevant documents & receive payment on behalf of firm,
6. To co-ordinate measurement through contractor's authorized engineer, witness measurement, sign measurement books on behalf of firm.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to Arbitration Tribunal.

I have read the content of this Special Power of Attorney & accept the same and I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

(Signature with name of Power attorney Holder) (Name & signature of sole proprietor)

Dated ……

Place …… (Seal of Firm)

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.

(Not required if tender is uploaded by Proprietor himself)

Annexure-XV

(Para 16.2.3 (c) of General Instructions)
& clause No. 14(c) (ii) and 15 of Part-I of GCC-2020, with up to date correction slip

SPECIAL POWER OF ATTORNEY
(For Private/Limited companies only)

BE IT KNOWN To all that (Name of firm) ….. having its registered office at ……..……. do hereby, for and on behalf of the firm appoint Shri…… (Name& designation) Special Attorney of the said firm and authorize the said Shri…….…… (name) whose specimen signatures are appended below, to do all or any of the following acts deeds and/or things on behalf of the said firm and to represent the firm in respect for the tender No……. (Name of work)…… invited by DFCCIL.

1. To appear before office of DFCCIL related to the process of tendering for the above said tender.
2. To download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.infor the said Tender.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL.
5. To sign the agreement and other relevant documents & receive payment on behalf of Company,
6. To co-ordinate measurement through contractor authorized engineer, witness measurement, sign measurement books on behalf of Company.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration.

We have read the content of this Special Power of Attorney & accept the same and we hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds &things lawfully done or caused to be done by our said Attorney.

(Signature of Shri…….)

Authorized signatory of the firm

Dated……

Place …… **Seal of Firm**

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.
Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per resolution passed by Board of Directors
.

ANNEXURE-XVI

MODEL FORM OF BANK GUARANTEE BOND FOR PG

To
CPM
DFCCIL, Ajmer

1. In consideration of the President of India acting through (indicate designation of concerned
2. CPM (hereinafter called "the Government") having agreed to exempt – (Name & address)----------(hereinafter called "the said Contractor(s)" from the demand, under the terms and conditions of an Agreement dated -------- made between ---------- and ---------- for ---------- (hereinafter called "the said Agreement"), of Performance Guarantee for the due fulfillment by the said Contractor(s) of the terms and conditions contained in the said Agreement, on production of a bank Guarantee for Rs.-------(Rupees----------only) we, ---------- (hereinafter referred to as "the Bank" at the request of ----------(contractor(s) do hereby undertake to pay to the Government an amount not exceeding Rs. ---------- --against any loss or damage caused to or suffered or would be caused to or suffered by the Government by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.
3. We---------- (indicate the name of the bank) i.e. ……. (name, address and branch code) do hereby undertake 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 to or suffered by the Government by reason of breach by the said contractor(s) of any of the terms of conditions contained in the said Agreement or by reason of the contractor(s) 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. ----------
4. We under-take to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s)/supplier (s) in any suite or proceeding pending before any court or Tribunal relating thereto our liability under this present being absolute and unequivocal .

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)/supplier(s) shall have no claim against us for making such payment.

5. We……..…….. (Indicate the name of bank) i.e. ……. (name, address and branch code) further agreed with 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 or till --------- (office/Department) Ministry of ---------- certifies 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. Unless a demand or claim under this guarantee is made on in writing on or before the ---------- we shall be discharged from all liability under this guarantee thereafter.

6. We…….. (Indicate the name of bank) i.e. ……. (name, address and branch) further agree with the government that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor(s) from time to time or to post opens for any time or from time to time any of the powers exercisable by the Government against the said, Contractor(s) and to

further or enforce any of the terms and conditions relating to 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 forbearance, act or commission on the part of the Government or any indulgence by the Government to the said Contractor(s) or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

7. This guarantee will not be discharged due to the change in the constitution of the bank or the contractor(s)/Supplier(s).

8. We ---------- (indicate the name of bank) i.e. ……. (Name, address and branch code) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Government in writing.

Dated the---------- day of ---------2020

For _____(indicate the name of bank)
i.e. ……. (Name, address and branch code)

ANNEXURE-XVII

(Para 16.2.6.3 (b) of General Instructions &
Clause No. 17.14.3 (a) of Annex.I Part-I of GCC-2020, with up to date correction slip)

SPECIMEN BOARD'S RESOLUTION OF A PRIVATE/LIMITED COMPANY FORENTERING INTO JV WITH OTHER ENTITIES

Extract from the minutes of meeting of Board of Directors of the company held on …… (Date) at the office of the company situated at
……
(Address of the company).

****

RESOLVED THAT …….. (Name of the company) have decided to participate for the said tender for the work of ……. (Name of the work) in joint venture with M/s…….. (Name of the other Firm/Firms or company/companies with addresses) in name and style of the JV firm…… (Name of the Joint Venture firm).

FURTHER RESOLVED THAT Shri … ……. (Name and designation of authorized person of the company) is hereby authorized to execute & sign all necessary documents for submission of tender documents, JV Agreement and any documents in connection with present tender on behalf of company etc. For the above mentioned work on behalf of the company.

Signed by Managing Director/

Director/ Company Secretary
Of the Company Note:-

1. Stipulations in the above specimen Board's Resolution are for guidance only. Companies can incorporate other stipulation /stipulations relevant with the tender and formation of JV, if required.

2. The above Annexure should be executed on the Letter Head of the company.

Annexure-XVIII

Clause No. 16.2.6.2(c) of General Instructions & Clause No. 17.14.1 (c) and 15 of Annex. I Part-I of GCC-2020, with up to date correction slip

SPECIAL POWER OF ATTORNEY
(For Partnership Firms participating as a member of JV only)

We the following partners of M/s…… (Indicate name of firm)

(1)……..…2……

3……..……4……

5……..……6……having its office at ……..hereby give our consent on behalf of M/s……. ……..(Indicate name of firm) in favour of Mr…….. (Indicate name of Partner), whose specimen signature are appended below, for entering into Joint Venture Agreement with M/s…… (Indicate name of other firm's)…… having office at ……. in connection with T. No……Name of work …… to sign & execute the MOU, JV agreement and all other required documents pertaining to above said tender.

We have read the content of this Special Power of Attorney & accept the same and we hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

	Executants Partner
(Signature of Sri……)	(Name & signature)
DATE ……	1.....
	2.....
Place ……..	3.....
	4.....
Seal of Firm	Seal of Firm

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized. Required even if MOU/JV agreement is signed by one or more partners authorized in the Partnership Firm as per the Partnership deed, letter of consent.

ANNEXURE-XIX

Clause No. 16.1(f) of General Instructions & Clause No. 10.3 Annex.I Part-I of GCC-2020, with up to date correction slip

(ON THE LETTER HEAD OF CHARTERED ACCOUNTANT)

(Mandatory and applicable for tenders valuing more than Rs 20 Cr to calculate Bid Capacity of tenderer- For value of A)

To

CPM

DFCCIL, Ajmer.

Sub: -Construction works executed and payment received

It is to certify that construction works executed and payment received through construction works of M/s (Name of firm)…….during the previous three financial years and the current financial year (up to date of inviting tender), as extracted from, Balance sheet/ certificate **issued by the employer/ client**, Form 16 , Form 26AS etc. are as under :-

Sr. No.	**Financial year**	Work executed And Payment received through construction works
1.	Current year (Say A)	
2.	A-1	
3.	A-2	
4.	A-3	

Yours sincerely,

Date: …

(Name & Sign. Of Authorized Signatory)
Seal of firm
Registration No:-

E-Mail:-

Note :

(a) In case of JV firm details of construction works executed by each member of JV is required to be submitted

(b) In case, the tenderer/s failed to submit the above statement (for tenders valuing more than 20 Cr) along with offer, their/his offer shall be considered as incomplete and will be rejected **summarily**.

Annexure –XX

Clause No. 16.2.4(d) of General Instructions & Clause No. 14(f)(iii) and 15 of Annex.-I Part-I of GCC-2020, with up to date correction slip

SPECIAL POWER-OF-ATTORNEY
(For LLP Firm incorporated under LLP Act)

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 ……. (LLP name) have decided to participate in the tender No._____ invited by DFCCIL for the work namely "_____"

I……(name and designation) the authorized 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 respect of the aforesaid tender Invited by the DFCCIL :

1. To appear before office of DFCCIL related to the process of tendering for the above said tender.
2. To download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.infor the said Tender.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL.
5. To sign the agreement and other relevant documents & receive payment on behalf of firm,
6. To co-ordinate measurement through contractor authorized engineer, witness measurement, sign measurement books on behalf of firm.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration

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 DFCCIL.

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 WITNESSES:

Signature Name:
Address:

Signatures of authorized representative & Seal
of LLP: authorized representative
Name of (Executants):
Designation:

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)

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.
Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per resolution passed by Partners of the LLP

Annexure -XXI

Clause No. 16.2.4(d) of General Instructions & Clause No. 14(f)(iii) Annex.I Part-I of GCC-2020, with up to date correction slip

Partner's Resolution of LLP Firm incorporated under LLP Act for submitting Tender by LLP firm (To be printed on 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 Board has been described about NIT No._____ issued by DFCCIL for the work name"_____". Partners discussed the matter and after discussion following resolution was passed:

RESOLVED THAT the LLP (LLP name) shall participate in the above tender

Resolved further that the LLP/Partners authorize(s), Mr./ Ms. _____& Mr./ Ms. _____ (name and designation) of the LLP, 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 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)

Note:-

1. Stipulations in the above specimen Resolution are for guidance only. LLP firm can incorporate other stipulation /stipulations relevant with the tender and formation of JV, if required.
2. The above Annexure should be executed on the Letter Head of LLP firm.
   Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per resolution passed by Partners of LLP firm.

Annexure –XXII

Clause No. 16.2.5(c) of General Instructions & Clause No. 14(e)(iii) and 15 of Annex.I Part-I of GCC-2020, with up to date correction slip
SPECIAL POWER-OF-ATTORNEY
(For Registered Society & Registered Trust)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS M/S …… …… (Name of **Registered Society / Registered Trust**) is a **Registered Society / Registered Trust** registered under the …….. Act (Name of the act vide which registered), and having its registered office at…… …… (hereinafter called the ' **Registered Society /Registered Trust** ').

AND WHEREAS by its resolution No…… passed in the meeting held on…… of the Executive Member of the **Registered Society / Registered Trust** the **Registered Society / Registered Trust** ……. (**Registered Society / Registered Trust** name) have decided to participate in the tender No._____ invited by DFCCIL for the work namely "_____"

I……(name and designation) the authorized representative of M/S …… ……(name of **Registered Society / Registered Trust**) 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 **Registered Society / Registered Trust** as our true and lawful attorney (hereinafter referred to as "Attorney") of the **Registered Society / Registered Trust** to jointly or severally exercise all or any of the following powers for and on behalf of M/S …… …… (name of **Registered Society / Registered Trust**) in respect of the aforesaid tender Invited by DFCCIL :

1. To appear before office of DFCCIL related to the process of tendering for the above said tender.
2. To download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.infor the said Tender.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL.
5. To sign the agreement and all other required documents & receive payment.
6. To co-ordinate measurement through contractor authorized engineer, witness measurement, sign measurement books on behalf of Registered Trust/Society.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration

The **Registered Society / Registered Trust** agrees and undertakes that in the event of any change in the constitution of the **Registered Society / Registered Trust**, the rights and obligations of the **Registered Society / Registered Trust** shall continue to be in full force without any effect thereof.
The **Registered Society / Registered Trust** undertakes that it shall not cancel or amend this power of Attorney without obtaining previous written consent of DFCCIL.

AND the **Registered Society / Registered Trust** 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 **Registered Society / Registered Trust** and the **Registered Society / Registered Trust** 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 Shri……..(name and designation), on this…… day of…… 20…. , in presence of:
WITNESSES:

Signature Name:
Address:

Signatures of authorized representative & Seal of **Registered Society / Registered Trust**

Name of authorized rep (Executants):
Designation:

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:-

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.
(Required even if tender documents are submitted by the authorized/ power of attorney holder himself)

Annexure-XXIII

Information and particulars in terms of Para 11(a) and 11(b) of General Instructions and Clause No. 16 of Annexure-I Part-I of GCC-2020, with up to date correction slip.

(i) Information and particulars regarding employed retired Railway/DFCCIL Engineer (s)/ Officer(s) of the Gazetted rank.

Sr.No.	Name of retired gazette Officer/ Engineer with Designation	Date of Retirement	Details of permission obtained (wherever applicable)
1.			
2.			
3.			
4.			

(ii)Information and particulars regarding retired Railway/DFCCIL Engineer (s)/ Officer(s) of the Gazetted rank being one of the partner in the partnership Firm/ Joint venture/registered Society/ registered firm/ LLP etc

Sr.No.	Name of retired gazette Officer/ Engineer with Designation	Date of Retirement	Details of permission obtained (wherever applicable)
1.			
2.			
3.			
4.			

(iii)Information and particulars regarding retired Railway/DFCCIL Engineer (s)/ Officer(s) of the Gazetted rank being director in the company

Sr.No.	Name of retired gazette Officer/ Engineer with Designation	Date of Retirement	Details of permission obtained (wherever applicable)
1.			
2.			
3.			
4.			

Note:- 1. Details as per the above format shall be furnished by the tenderer. The format should not be left blank. In case of there being no such retired Gazetted Railway/DFCCIL Officer/ Engineer, Nil to be furnished in the format.

2 In case details are not submitted in terms of Para 11(a) by the tenderer, their offer shall be summarily rejected.

3 Also submit the document of permission from the President of India or any officer, duly authorized by him in this behalf, in case (i) where such Engineer or officer had not retired from government service at least 1 year prior to the date of submission of the tender (ii) where such Engineer or officer is a partner or director as the case, in partnership firm or an incorporated company,.

(iv)Information and particulars in terms of Para 11(b) of General instructions regarding Relative(s) employed in gazette capacity on Railway/DFCCIL

Sr. No.	Name of the relative who is employed in gazette capacity on Railway/DFCCIL with Designation	Relation
1.		
2.		
3.		
4.		

Note :- 1. Details as per the above format shall be furnished by the tenderer. The format should not be left blank. In case of there being no such relative, Nil to be furnished in the format.

2. In case details are not submitted in terms of Para 11(b) of General Instructions by the tenderer, their offer shall be summarily rejected.

Signature of the tenderer……..

Name……

Annexure-XXIV

Clause No. 16.2.6.4(b) of General Instructions 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 DFCCIL 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)

Annexure : XXV

Clause No. 16.2.6.4(c) of General Instructions

POWER-OF-ATTORNEY BY A 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 DFCCIL 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. 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 the DFCCIL 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 DFCCIL.

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:

Signature Name:
Address:

Signatures of authorized representative & Seal of LLP:

Name of authorized representative:
Designation:

Signature Name:
Address:

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)

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.

Required even if tender documents are submitted by the authorized/ power of attorney holder of the LLP firm himself

ANNEXURE-XXVI

(Para 16.2.6.5 (b) of General Instructions)

SPECIMEN RESOLUTION OF EXECUTIVE COMMITTEE OF REGISTERED

SOCIETY/TRUST (To be printed on registered society/ trust's letter head)

FOR ENTERING INTO JV WITH OTHER ENTITIES

Extract from the minutes of meeting of Executive Committee of Registered Society/Trust held on …… (Date) at the office of the Registered Society/Trust situated at …… (Address of the Registered Society/Trust).

****

RESOLVED THAT …….. (Name of the Registered Society/Trust) have decided to participate for the said tender for the work of ……. (Name of the work) in joint venture with M/s…….. (Name of the other Firm/Firms or company/companies/ Registered Society/Trust with addresses) in name and style of the JV firm…… (Name of the Joint Venture firm).

FURTHER RESOLVED THAT Shri … ……. (Name and designation of authorized person of the Registered Society/Trust) is hereby authorized to execute & sign all necessary documents for submission of tender documents, JV Agreement and any documents in connection with present tender on behalf of Registered Society/Trust etc. For the above mentioned work on behalf of the Registered Society/Trust.

Name and Signed by authorized

Executants/s of Registered Society/Trust

Note:-

1. Stipulations in the above specimen Resolution are for guidance only. Registered Society/Trust can incorporate other stipulation /stipulations relevant with the tender and formation of JV, if required.
2. The above Annexure should be executed on the Letter Head of Registered Society/Trust.

Annexure-XXVII

(Para 16.2.6.5 (c) of General Instructions)

SPECIAL POWER OF ATTORNEY

(To be submitted by Registered Society/Trust participating as member of JV) BE IT KNOWN to all that I …….. (Indicate name of Authorised signature of the Registered Society/Trust)…… at the Registered Society/Trust (Indicate Name of Registered Society/Trust) ……. having its office at …… do hereby for and on behalf of the said Registered Society/Trust appoint Sh.…….S/o Shri ……age….. ….(Indicate Name of Nominee with full address) of the Registered Society/Trust as our Attorney, whose specimen signature are appended below to execute the MOU/ JV Agreement & all other required documents with M/s ……. (Indicate Name of other Co. /Prop. firm/ Registered Society/Trust)…….. Situated at …… in connection with the following tender invited by DFCCIL:-

"T.No……Name of work……
……..……""

We/ I have read the content of this Special Power of Attorney & accept the same, and we/ I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

In witness where of I……. (Indicate name of Authorised signatory of the Registered Society/Trust) Of …… (Indicate name of Registered Society/Trust) the above named Authorised signatory has executed this Power of Attorney.

For …… (Name of
Executants/s of Registered Society/Trust)

(Name, address and Sign. of Power of Attorney holder Shri……)

(Sign& Seal …….) Place…

Date:-…….

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.
Required even if tender documents are submitted by the authorized/ power of attorney holder of Registered Society/ firm himself

ANNEXURE- XXVIII

DFCCIL CONTRACT AGREEMENT OF WORKS
(charged to EBR(IF) CONTRACT
AGREEMENT NO. ----------DATED----------

ARTICLE OF AGREEMENT made on this day_____ in the year Two Thousand and ……. between the President of India, acting through the _____(DFCCIL) Administration having its office at Ajmer hereinafter called the 'DFCCIL" of the first and part and ---------- Name of Contractor ---------- hereinafter called the 'Contractor' of the second part and Indian Railway Finance Corporation Limited hereinafter called the 'IRFC' of the third part having its office at ---------- ---------- with GSTIN ---------- (GSTIN of billing unit, IRFC).

First part, second part and third part collectively hereinafter called the 'Parties'.

WHEREAS the contractor has agreed with the DFCCIL for performance of the works---------- set forth in the schedule hereto annexed upon the Standard General Condition of Contract corrected up to latest correction slips and the Specifications of the ----------DFCCIL corrected up to latest correction slips and the Specifications of the ---------- DFCCIL, corrected up to latest correction slips and the Special Condition and 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 payments to be made by the DFCCIL, the Contractor 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 DFCCIL and will complete the same in accordance with the said specifications and said drawings and said conditions of contracts on or before the ---------- day of ----------20--- and will maintain the said work for a period of ---------- calendar months from the certified date of their completion and will observe, fulfill and keep all the conditions there is 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 DFCCIL 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 DFCCIL 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.

It is agreed by and between the parties that DFCCIL shall continue to be held responsible for all obligations, risk and liabilities, whatsoever, arising out of or in connection with the Contract Agreement and this Novation Agreement, whether during the progress of the work or after its completion.

It is further agreed and understood by and between the parties that IRFC shall be the owner of assets, if any, arising out of execution of works as defined in the Contract Agreement, except the land whose ownership shall continue with DFCCIL. Accordingly, the invoices shall be issued by capturing GSTIN of contractor (as the supplier) and GSTIN of IRFC (as the bill-to party). Also, the contractor shall submit the invoice, issued in the name of IRFC, to DFCCIL for processing payment by DFCCIL to Contractor subject to applicable TDS under the Income Tax, GST or any other applicable laws.

It is further agreed by and between the parties that IRFC shall be responsible to comply with Income Tax and GST laws in relation to filling of returns.

All the communication in relation to the Contract Agreement would only be between Party hereto of first part and second part.

For and on behalf of the President of India

Witness of the Signature

1.

2.

Address :----------

Signature of Contractor

Name of Authorized Signatory

Witnesses of the Signature

1……..

2……..

Address:……

For and on behalf of the
Indian Railway Finance Corporation

Witness of the Signature

1.

2.

Address:----------

ANNEXURE-XXIX
(clause 14(ii) (b)of the GCC 2020)

CERTIFICATE

(For HUF (Hindu Undivided Family / for JV having HUF as member)

I…….…. (Indicate Name of Karta) S/o ……..…. (Full address of HUF) Karta of M/s…….…….. (Indicate Name of HUF) situated at …… (Full address of HUF) do hereby solemnly affirm & declare as under:-

1. That I, who is submitting the tender on behalf of the **HUF** is in the position of **Karta** of the HUF, working in the name & style of ……. (Indicate Name – HUF) at ……

2. That, I…….(Indicate Name of Karta) has the authority, power and consent given by other members to act on behalf of ……..(name of HUF)

Deponent

Signature and Seal

VERIFICATION

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

Deponent

Signature and Seal

Place:-

Date:-

Note: - The stamp duty shall be governed by the provision of the Law relating to stamp in Force in that State at the time when such AFFIDAVIT is being executed. Affidavit shall be affirmed before the Notary Public.

Annexure XXX

(Clause14 (ii) (b) and clause 15 of the GCC 2020)

SPECIAL POWER OF ATTORNEY
(For HUF (Hindu Undivided Family)

BE IT KNOWN to all that we (1) ……..…….. (2)……..……... (3)……(4)……..……..(5)…….……. all the members of the HUF…… having its registered office at ……..……. do hereby, for and on behalf of the said firm appoint Shri…… (Name& designation) Special Attorney of the said HUF and authorize the said Shri…….…… (name), whose specimen signature are appended below, to do all or any of the following acts deeds and/or things on behalf of the said firm and to represent the firm in respect for the tender No……. (Name of work)…… invited by DFCCIL.

1.To appear before office of DFCCIL related to the process of tendering for the above said tender.
2.To procure/download the tender documents for the above said tender.
3.To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.infor the said Tender. In case the offer is submitted by the person other than those who is appointed as above and there is difference between the name of the person authorized as above and the person who digitally submitted the offer then our offer shall be deemed to be summarily rejected.
4.To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL.
5.To sign the agreement and other relevant documents & receive payment on behalf of firm,
6.To co-ordinate measurement through contractor's authorized engineer, witness measurement, sign measurement books on behalf of firm.
7.To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration.

We/ I have read the content of this Special Power of Attorney & accept the same and We/I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

Members of the HUF (Signature of Sri……) (Name & signature)

DATE ……

Place ……..

1.....
2.....
3.....
4.....

Seal of Firm

Seal of Firm

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.
(Not required if tender documents are uploaded by Karta himself).

Annexure XXXl

(Explanation for clause 10 – eligibility criteria, of the GCC 2020)

DECLARATION BY NEWLY FORMED PARTNERSHIP FIRM/ LLP Firm

(Mandatory if tenderer is Newly Formed Partnership Firm/ LLP Firm)

I…… S/o Shri……., the authorized signatory of partnership firm/ LLP Firm M/s …… do hereby solemnly affirm and declare as under :

1. That, we are the newly formed partnership firm/ LLP Firm in the name and style of M/s …….. Registered with registrar of firm vide Registration No…… dated……..

2. In this newly formed Partnership Firm/ LLP Firm, we are ……. No. of partners. The details of the previous proprietary firm or previous dissolved partnership firm/ LLP Firm or previous splitted partnership firm (s) / LLP Firm wherein any of the partners of the present firm was a proprietor / Partner and proposed to use credentials obtained in such previous propriety firm (s)/Partnership firm(s) / LLP Firm is as under :-

S.N.	Name of person in the newly formed partnership firm	Details of Previous proprietary/ Partnership Firm/ LLP Firm	Share in newly formed partnership firm	Share in previous partnership firm/ LLP Firm	Remarks
1.					
2.					
3.					

3. That, following relevant documents are Annexed with bid –

(1) Details of previous Propriety firm / Partnership Firm/ LLP firm as per annexure I

(2) A copy of previous partnership Firm (Notarized or duly registered with the Registrar) (3) Affidavit as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized).

(4) Copy of previous LLP agreement and certificate of incorporation.

(5) Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of dissolution of previous partnership firm/ LLP firm)

(6) Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm, LLP firm or propriety firm)

(7) Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such partner(s) joining the new/ existing partnership firm, as per para 16.1 (c), (d), (f),(g), (k) above.

Declaration by the Tenderer:-

We/ I have read the content of this declaration & respective conditions of the GCC regarding assessment of the eligibility of our partnership firm/ LLP firm and have/ has enclosed all the required mandatory documents accordingly. We/I hereby declare that the information given above are true. If any of the above information is found to be wrong at any time, my tender will liable to be rejected.

Name and Signature of Tenderer
along with Seal

Notes-

1. In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of 0.3*0.2*value of the work done in the previous entity. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.
2. 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.
3. 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.
4. 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.
5. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.

Annexure XXXII

(Explanation for clause 10 – eligibility criteria, of the GCC 2020)

DECLARATION BY AN EXISTING PARTNERSHIP FIRM/ LLP FIRM

(Mandatory if tenderer is an Existing Partnership Firm/ LLP Firm)

(Fill the relevant para (1.1, 1.2 & 1.3) and strike off the para which is not relevant under Partnership Firm)

1.0 I …… S/o Shri ……, the authorized signatory of Partnership Firm/ LLP Firm M/s ……. ……. do hereby solemnly affirm and declare as under :

1.1 That, we are an existing Partnership Firm/ LLP Firm in the name and style of M/s……, since…….. (MM/YY), having GST Registration No……, PAN/TAN No……. There has been no change in the Partner(s) of our firm during last 07 (seven) years ending last day of the month previous to the one in which tender is invited.

OR

1.2 That, we are an existing Partnership Firm/ LLP Firm in the name and style of M/s……., Since…… (MM/YY), having GST Registration No……., PAN / TAN No. …….. Following of our partner(s) has/have quit the Partnership firm/ LLP Firm during last 07 (seven) years ending last day of the month previous to the one in which tender is invited, with details as under :

S.No.	Name of quitting Partner(s)	Share of Partner(s) who has/have quitted.	Date of quitting (MM/YY)

AND / OR

1.3 That, we are an existing Partnership Firm/ LLP Firm in the name and style of M/s……, since……. (MM/YY), having GST Registration No……, PAN/TAN No…… Following partner(s) has/have joined our Partnership Firm/ LLP Firm during last 07 (seven) years ending last day of the month previous to the one in which tender is invited, with details as under :-

S.No.	Name of Joining Partner(s)	Share of joining Partner(s)	
		In the present firm	In the previous firm from where he/they has/have quit and joined the present firm

1.4 In case of Para 1.2 and 1.3, following documents as applicable are required to be submitted along with bid:-

(1) Details of previous Propriety firm / Partnership Firm/ LLP firm as per annexure I.

(2) A copy of previous partnership Firm (Notarized or duly registered with the Registrar) (3) Affidavit as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized).

(4) Copy of previous LLP agreement and certificate of incorporation.

(5) Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of dissolution of previous partnership firm/ LLP firm)

(6) Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm, LLP firm or propriety firm)

(7) Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such partner(s) joining the new/ existing partnership firm, as per para16.1 (c), (d), (f),(g), (k) above.

Declaration by the Tenderer :-

We/ I have read the content of this declaration & respective conditions of the GCC regarding assessment of the eligibility of our partnership firm/ LLP firm and have/ has enclosed all the required mandatory documents accordingly. We/I hereby declare that the information given above are true. If any of the above information is found to be wrong at any time, my tender will liable to be rejected.

Name and Signature of Tenderer

alongwith seal.

1. 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.
2. In case of existing partnership firm if any other partner(s) joins the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.
3. 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.
4. 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.
5. 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.
6. 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.
7. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.

Annexure XXXIII

(Explanation for clause 10 – eligibility criteria, of the GCC 2020)

DECLARATION REGARDING CONSTITUTION OF EXISTING/ NEW COMPANY

(Mandatory if tenderer is an Existing / New Company)

(Fill the relevant para (1.1, 1.2 & 1.3) and strike off the para which is not relevant under Partnership Firm)

1.0 I …… S/o Shri ……, the authorized signatory of the Company M/s ……. ……. do hereby solemnly affirm and declare as under :

1.1 That, we are an existing Company working in the name and style of MRegistration No……, PAN/TAN No……. There has been no change in the constitution of our Company during last 07 (seven) years ending last day of the month previous to the one in which tender is invited.

OR

1.2 That, we are an existing Company working in the name and style of Registration No…….., PAN / TAN No. …….. Following Company (ies) merged in the Company during last 07 (seven) years ending last day of the month previous to the one in which tender is invited, with details as under:

S.No.	Name of quitting Partner(s)	Share of Partner(s) who has/have quitted.	Date of quitting (MM/YY)

1.3 In case of Para 1.2, following documents as applicable are required to be submitted along with bid:-

(1) Details of company getting merged as per annexure I
(2) Copy of Memorandum of Association/ Articles of Association of the Company getting merged
(3) Copy of certificate of incorporation of previous company getting Merged.
(4) Resolution by the Board of Directors for the Merger of the company(s) with the tenderer
(5) Proof of surrender of previous PAN no
(6) Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such Company(s) joining the new/ existing Company, as per para 16.1 (c), (d), (f), (g), (k) above.

Declaration by the Tenderer :-

We/ I have read the content of this declaration & respective conditions of the GCC regarding assessment of the eligibility of our partnership firm/ LLP firm and have/ has enclosed all the required mandatory documents accordingly. We/I hereby declare that the information given above are true. If any of the above information is found to be wrong at any time, my tender will liable to be rejected.

Name and Signature of Tenderer

alongwith seal.

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

Annexure XXXIV
clause 10.1 (b) (iii) of part I and clause 7 of part II of the GCC 2020)

DFCCIL

CONTRACT AGREEMENT OF SECONDARY COMPONENT OF THE WORKS

CONTRACT AGREEMENT NO. ----------DATED----------

ARTICLE OF AGREEMENT made on this day_____ in the year Two Thousand and ……. between the …….(the tenderer), having its office at ---------- submitting offer for the tender no……for the work……. hereinafter called the 'Main Contractor" of the first and part and ---------- Name of Sub Contractor ---------- hereinafter called the 'Sub Contractor' of the second part having its office at ---------- with GSTIN ----------
First part, second part collectively hereinafter called the 'Parties'.

WHEREAS the contractor has agreed with the DFCCIL for performance of the works-------- --------- set forth in for the component ……..detailed in schedule ……for the total cost of Rs……of the tender schedule of the tender no……The Standard General Condition of Contract corrected up to latest correction slips and the Specifications of the ----------DFCCIL corrected up to latest correction slips and the Specifications of the ---------- DFCCIL, corrected up to latest correction slips and the Special Condition and 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 payments to be made by the DFCCIL, the Contractor 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 DFCCIL and will complete the same in accordance with the said specifications and said drawings and said conditions of contracts on or before the ---------- day of ----------20--- and will maintain the said work for a period of ---------- calendar months from the certified date of their completion and will observe, fulfill and keep all the conditions there is 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 DFCCIL 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 DFCCIL 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.

All the communication in relation to the Contract Agreement would only be between Party hereto of first part and second part. No claim of Contractor, whatsoever on this account shall be entertained by the DFCCIL and this shall be deemed as 'excepted matter' (matter not arbitrable).The permitted subcontracting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the DFCCIL and shall not relieve the Contractor of any responsibility under the Contract. The Contractor shall indemnify DFCCIL against any claim of subcontractor. The Contractor shall endeavor to resolve all matters and payments amicably and speedily with the subcontractor

On receipt of approval from CPM/CGM, Contractor shall enter into a formal agreement legally enforceable in Court of Law with subcontractor and submit a copy of the same to the Engineer.

In addition to issuance of work experience certificate to Contractor, the Engineer, when, based on documents, is satisfied that subcontracted work has been carried out by subcontractor, shall issue work experience certificate to the subcontractor also for the portion of work subcontracted and successfully completed by the sub-contractor

The responsibility of successful completion of work by subcontractor shall lie with Contractor. Subcontracting will in no way relieve the Contractor to execute the work as per terms of the Contract Further, in case Engineer is of the view that subcontractor's performance is not satisfactory, he may instruct the Contractor to remove the subcontractor from the work and Contractor has to comply with the above instructions with due promptness. Contractor shall intimate the actual date of discontinuation of subcontract to Engineer. Once having entered into above arrangement, Contractor shall discontinue such arrangement, if he intends to do so at his own or on the instructions of DFCCIL, with prior intimation to CPM/CGM.

For and on behalf of the Contractor

Name of Authorized Signatory

Witness of the Signature

1.

2.

Address :----------

Signature of Sub Contractor

Name of Authorized Signatory

Witnesses of the Signature

1……..

2……..

Address:……

(Seal and signature of Notary Public)

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Agreement is being executed. The Power of Attorney shall duly registered with registrar or notarized.

Annexure-XXXV

(Rly Bd's L.No. 202/CE-I/CT/3E/GCC/Policy Dated 30.12.2020)

BID SECURITY DECLARATION

(Applicable in case…….. of Para……. STD)

I/We……..……. (Name of bidder) am/are aware that I/we……..……. have been exempted from submission of Bid Security/ Earnest Money deposit in lieu of this Bid Security Declaration. I/we…… understand and accept that if I/We withdraw my/our bid within bid validity period or if awarded the tender and on being called upon to submit the Performance Guarantee/ Performance Security fail to submit the same within the stipulated time period mentioned in tender documents or on being called upon to sign the contract agreement fail to sign the same within stipulated period mentioned in tender documents,

I/ We……..i.e., the bidder shall be banned from submission of bids in any Works/ Service Tender issued by DFCCIL for a period of 12 months from the date of such banning done on e-platform IREPS.

If the bidder is banned for submission of bids on the date of closing of tender, such bid, even if received, shall be treated as invalid while evaluating the bids.

Signature of Tenderer/s

Note :- 1.0 The bid security/ Earnest Money for the tender is NIL .

2.0 This is submitted in lieu of Bid Security Deposit/ Earnest Money for the particular Tender.

END OF DOCUMENT