डेडीकेटेड फ्रेट कोरीडोर

Tender JP/EN/RE-RGS/WC/Crew Running Room/New Ateli
For
Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway.

Single Packet OPEN E-TENDER

TENDER DOCUMENT

(NOT TRANSFERABLE)

December -2019

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

INDEX

Instructions to bidders for online bidding

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 (www.tenderwizard.com/DFCCIL) of M/s. ITI, a Government of India Undertaking. Benefits to Suppliers/ service providers are outlined on the Home page of the portal.

Instructions:-

1. Online 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 and tender fees & EMD deposit on offline/RTGS.

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.

Note 1:- It is advised that all the documents to be submitted (See section 2 & 3 of tender document) are kept scanned and converted to PDF format in a separate folder on your computer before starting online submission. The price bid (Excel Format) may be downloaded and rates may be filled appropriately. This file may also be saved in a secret folder on your computer.

Note 2:- **While uploading the documents it should be ensured that the file name should be the name of the document itself.**

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. Registration:

The Tender documents can be downloaded from the website: www.tenderwizard.com/DFCCIL and to be submitted in the e - format. Cost of the Tender Documents and Bid Security (EMD) have to be submitted to DFCCIL's office, Jaipur in the form of Pay Order, Demand Draft, Banker's Cheque & FDR, as per address given in the BID Documents, Tender fee and Bid Security (EMD) can also be deposited through E. payment . before the schedule date & time of submission of the tender otherwise the Bid will not be considered. Amendments, if any, to the tender document will be notified in the above website as and when such amendments are notified. It is the responsibility of the bidders who have downloaded the tender documents from the website to keep themselves abreast of such amendments before submitting the tender documents.

Intending bidders are requested to register themselves with M/s. ITI through www.tenderwizard.com/ DFCCIL for obtaining user - ID, Digital Signature etc. By paying Vendor registration fee and processing fee for participating in the above mentioned tender.

DFCCIL, has decided to use process of e-tendering for inviting this tender and thus the physical copy of the tender would not be sold.

5. DFCCIL, has decided to use process of E- Tendering for inviting this tender and thus the physical copy of the tender documents would not be sold/ accepted.

6. To participate in E-tender, it is mandatory for Tenderer (S) to get themselves registered with the Tender Wizard and to have user ID & Password. Payment of registration fee can be done through www.tenderwizard.com/DFCCIL

Help Desk	**Abhay Tiwari & Suraj**
Telephone / Mobile Number	**8799753406 & 9599653865**
Helpline No. (Delhi)	**011-49424365**

DFCCIL Contact- 1	**Sh. K.K.Thakur**
Telephone/Mobile No.	**9001823332**
E-mail ID	**kkthakur@dfcc.co.in**

DFCCIL Contact- 2	**Sh. Vishnu Kumar Gupta**
Telephone/Mobile No.	**9887010150**
E-mail ID	**vgupta@dfcc.co.in**

DFCCIL Contact- 3	**Sh. Anup Kumar**
Telephone/Mobile No.	**9828550709**
E-mail ID	**anupkumar@dfcc.co.in**

7.0 DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATION AS PER BID:-

The bidder shall furnish, as part of his bid document establishing the bidders' eligibility. All these documents should be numbered and should be signed by bidder in each page.

7.1 The tenderer shall drop the Original DD of Bid Security (EMD) and Cost of Tender Document in the tender box in DFCCIL office, Jaipur or by post in the form of Pay Order, Demand Draft, Banker's Cheque & FDR as per address given in Bid documents before the scheduled date and time of submission of the tender otherwise the Bid will not be considered. Tender fee and EMD can also be deposited through e-payment. The tender processing fees, as per applicable rate payable through the e- payment gateways to ITI limited is Non-refundable.

7.2 Tender documents (s) in original, duly filled in should be signed by bidder or his Authorize representative along with seal on each page. All corrections and overwriting must be initialed with date by the bidder or his authorized representative.

7.3 Copy of PAN card.

7.4 The authenticated copy of registered partnership deed and registration of the firm from registrar of firm in case of partnership firm.

7.5 In case of proprietorship firm bidder will submit an affidavit, attested by Notary Public that "I am a sole proprietor of the firm _____ _____" in case of _____proprietorship firm on Non judicial stamp paper of Rs. 500/-

7.6 Bidder's profile duly filled in, as per tender document.

7.7 Power of Attorney

7.8 Article of association and memorandum in case of private/public limited company.

7.9 Copy of E.P.F. registration.

7.10 Copy of ESI Certificate.

7.11 Copy of GST registration no.

7.12 Certificate for non near relative in DFCCIL.

7.13 The tender fee and EMD as per tender document is to be deposited in the tender box kept in DFCCIL unit office Jaipur, as per address given in Bid document before the schedule date and time of submission of the tender otherwise the Bid will not be considered and shall be summarily rejected.

Alternative, tender fee and EMD can also be deposited by RTGS before the last date and time of submission of online bid. In such case, no documents are required to be deposited physically in the tender box. Scanned copy of RTGS receipt, duly indicating UTR number should be uploaded online along with the tender. Details of DFCCIL/Jaipur bank account for making payment by RTGS are as under:

Name	CPM DFCCIL Jaipur
Bank account number	369201010054636
IFSC code	UBIN0536920
Bank Name	Union Bank of India
Bank Branch	Bapu Nagar, Jaipur (Rajasthan)

The entire bid document shall be scanned & uploaded online on the website. The hard copy of those pages should be scanned after singed and stamp.

7.14 All Micro and Small Enterprises (MSEs) who are having UdyogAdhar Memorandum shall be given all benefits towards Tender Fee and Earnest Money (EMD) in terms of Railway Board Letter No.2010/RS/(G)/363/1 dated 31.03.2016.

Note: - Any discrepancy found in the downloaded tender document submitted by the bidder compared to uploaded tender document, the tender document uploaded by the DFCCIL will be treated as valid and any changes (found in the tender document submitted by the bidder) at any stage, will be treated as fraud done to the DFCCIL, and will be liable to cancellation of agreement done (if any) & appropriate action will be taken against the bidder.

8.0 The following 'FOUR KEY INSTRUCTIONS for BIDDERS' must be assiduously adhered to:

1. Obtain individual Digital Signing Certificate (DSC or DC) well in advance of your first tender submission deadline on ETS.
2. Register your organization on ETS well in advance of your first tender submission deadline on ETS.
3. Get your organization's concerned executives trained on ETS using online training module well in advance of your tender submission deadline on ETS.
4. Submit your bids well in advance of tender submission deadline on ETS (DFCCIL should not be responsible for any problem arising out of internet connectivity issues).

Method for submission of bid documents

In this TENDER the bidder has to participate in e-bidding online. Some documents are to be submitted physically offline mentioned below:

1) Cost of Bid Document
2) Bid Security / EMD

Note: The Bidder has to upload the Scanned copy of all above said documents during Online Bid submission also. In case tender fee and EMD are paid through e-payment, then scanned copy of receipt duly indicating UTR number is to be uploaded.

9.0 Price schedule

Utmost care may kindly be taken to upload price schedule. Any change in the format of price Schedule file shall render it unfit for bidding. Following steps may be followed

i) Down load price schedule part

ii) Fill rates in down loaded price schedule

iii) Save filled copy of downloaded price schedule file in your computer and remember its name & location for uploading correct file (duly filled in) when required.

iv) Tenderer(s) should download 'financial offer xls' file, quote their rates in the applicable field and save it. Tenderer(s) can upload the filled up 'financial_ offer xls' file. Name of the downloaded 'financial_ offer xls' file must not be changed.

(v) **Contractor 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.

10.0 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.

Other instructions

For further instructions, the vendor should visit the portal (www.tenderwizard.com), and login to it and upload documents of bid.

Important Note: It is strongly recommended that all authorized users of supplier organizations should thoroughly peruse the information provided under the relevant links, and take appropriate action.

NOTICE INVITING
E-TENDER

PART - I
Chapter I

DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

No: JP/EN/RE-RGS/WC/Crew Running Room/New Ateli

NOTICE INVITING TENDER
National Competitive Bidding

Dear Sirs,

Name of work : Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway. General Manager/Co, Dedicated Freight Corridor Corporation of India Limited, C-16, Khushi Vihar, Patrakar Colony, Mansarovar , Jaipur-302020, India, invites e-tenders on single packet system on prescribed forms from firms / Companies/Joint Ventures having requisite experience and financial capacity for execution of the following work:

	Table 1			
S. N.	Name of work	Tender cost (Rs)	Earnest money (Rs)	Completion Period
1.	Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway.	Rs. 10,81,18,299/- (Rs. Ten Crore Eighty One Lacs Eighteen Thousand Two Hundred Ninety nine only)	Rs 21,62,366/- (Rs. Twenty One Lacs Sixty Two Thousand Three Hundred Sixty Six only)	08 months

1.1.2 Eligibility shall be assessed on applicants, fulfilling the technical capability and competence as well as for financial and organizational resources as specified in clause no. 1.3.13 (i) A & B of Preamble and General Instruction to tenders (Part - I, Chapter III).

1.1.3 Tender document can be downloaded from the website www.tenderwizard.com/DFCCIL and www.dfccil.gov.in .The Tender Bid shall be submitted online on website www.tenderwizard.com/DFCCIL up to 06.01.2020 upto 15:00 hrs

Tender Fee amount of Rs 10000/- + 18% GST (non-refundable) in the form of Demand Draft, Bank's cheque, pay order in favour of CPM-DFCCIL, payable at Jaipur issued by any Nationalized/Schedule Bank to be deposited in the tender box kept in DFCCIL unit office, Jaipur or by post or through e-payment as per address/reference given in Tender documents before the schedule date and time of online submission of the tender otherwise the Tender will not be considered and shall be summarily rejected. DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED shall not be responsible for any postal delay. Tenderer shall deposit the cost of tender document (non-refundable) failing which his tender shall not be opened. Tenderer are advised not to make any correction /addition /alteration in the downloaded tender documents. If any such correction /addition /alteration in downloaded tender documents are made such tenders shall not be considered.

1.1.4 DFCCIL may issue addendum(s) / corrigendum(s) to the tender documents. In such cases the addendum(s) / corrigendum(s) shall be placed on DFCCIL's website: www.tenderwizard.com/DFCCIL 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.

1.1.5 The tender documents shall be in single sealed packets. Detailed credential as per the requirement of eligibility criteria and all tender papers are to be submitted in technical bid. Summary of Prices (Form No. 3) with % age above or below or at par on the amount of schedules "A", "B", "C" ,"D", "E", "F", "G", "H", "I" and "J" duly filled in along with Schedule of Prices (Form - 4) are to be submitted in "Financial Bid".

1.1.6 Tender shall be submitted as per "General Instruction to Tenderers" forming as part of the complete tender documents.

Tenders shall be opened at 15:30 hours on 06.01.2020.

1.1.7 Any tender received without Earnest money and cost of tender documents shall not be considered and shall be summarily rejected.

1.1.8 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.

1.1.9 Tenderers may note that they are liable to be disqualified at any time during tendering process in case any of the information furnished by them is not found to be true. EMD of such tenderers shall be forfeited. The decision of DFCCIL in this regards shall be final and binding.

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

1.1.11 The validity of offer shall be 90 days from the date of opening of the tender and extend further if required from time to time. The Bidder cannot withdraw their offer within the period of validity/extended validity lest liable to be disqualified.

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General Manager/Co /Jaipur
For & on behalf of DFCCIL

GENERAL INFORMATION / DATA SHEET

PART - I
Chapter II

GENERAL INFORMATION/DATA SHEET

TENDER NOTICE NO.	JP/EN/RE-RGS/WC/Crew Running Room/New Ateli
Name of the work	Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway.
(a) Tender Value	Rs. 10,81,18,299/-(Rs. Ten Crore Eighty One Lacs Eighteen Thousand Two Hundred Ninety nine only)
(b) Completion Period	08 months
(c) Earnest Money	Rs 21,62,366/-(Rs. Twenty One Lacs Sixty Two Thousand Three Hundred Sixty Six only)
(d) Tender Fees	**Rs. 10000/- + 18% GST which is not refundable.**
(e) Last Date and Time of Downloading of Tender from website **www.**tenderwizard.com/DFCCIL and www.dfccil.gov.in	06.01.2020 up to 15:00 hrs.
(f) Last date and Time of online submission of Tender on website **www.**tenderwizard.com/DFCCIL	06.01.2020 up to 15:00 hrs
(g) Date and Time of Opening of Tender (Technical bids -Packet A)	On 06.01.2020 at 15:30 hrs
(h) Validity of offer	90 days
(i) Retention Money / Security Deposit	5 % of Contract Value
(j) Performance Bank Guarantee	Performance Guarantee (PG) have to be submitted within 30 (thirty) days from the date of issue of Letter Of Acceptance (LOA), amounting to 5% of the contract value in the form as given in clause 16.4 of GCC

Note : Contractor 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.

PREAMBLE & GENERAL INSTRUCTION TO TENDERERS

PART I
Chapter- III

PREAMBLE & GENERAL INSTRUCTIONS TO TENDERERS

1.3.1 Introduction

(i) General

Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL), a public sector under taking has been set up under the Indian Companies Act, 1956 for implementation of Dedicated Freight Corridor Project. Government of India is the sole shareholder of the DFCCIL.

Ministry of Railways (MOR), Government of India has planned to construct Dedicated Freight Corridor (DFC) covering about 3338 route Kilometres on Eastern and Western Corridors. The coverage of Eastern Corridor is from Ludhiana to Dankuni and Western Corridor is planned from Jawaharlal Nehru Port, Mumbai to Rewari /Tughlakabad /Dadri near Delhi. There will be a linkage between two corridors at Dadri.

(ii) Dedicated Freight Corridor

Eastern DFC Route will be approximately 1839 Km long from Dankuni to Ludhiana via Dankuni – Asansole – Dhanbad – Gaya – Sonnagar - Mughalsarai - Allahabad - Kanpur - Tundla - Aligarh - Khurja - Bulandshahr – Meerut – Saharanpur – Ambala - Ludhiana.

Western DFC Route will be approximately 1520 Km long from Dadri to JNPT via Rewai – Iqbalgarh - Vadodara- JNPT.
Proposed alignment of DFC has been generally kept parallel to existing Indian Railway line except provision of detours at some stations where the existing yards /cities are congested .

Crew Running room, to be constructed at New Ateli DFC Station having the provision of reception Hall & waiting lounge, No. of Rooms/Beds (as per location approved), Kitchen, Toilet & Bathroom, Dining Hall/Room, Reading Room/Recreation Room, Yoga & Meditation Room etc.

(iii) Scope of Work

On behalf of President of India, General Manager/Co, Dedicated Freight Corridor Corporation of India Limited, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur-302020, India herein after referred to as 'DFCCIL' is inviting e-tenders from Firms/ Companies/Joint Ventures having requisite experience and financial capacity for execution of the following work:

"Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway."

(iv) Scope of work is as per the requirements given in the bid document but not limited to:

(a) The proposed work mainly comprises of composite work for construction of Crew Running Room, including firefighting arrangement, electrical works, lift and other connected works like water supply, sewerage, drainage, sanitary, land scaping etc. at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway."

(b) Other miscellaneous works.

(v) Cost of the work:

The estimated cost of the tendered work is approximately Rs. 10,81,18,299/-

Contractor 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.

(vi) The tenderer shall be governed by General Conditions of Contract (GCC), Preamble and General Instructions to Tenderers (ITT) and Special Conditions of Contract (SCC). Wherever, there is a conflict in any condition between GCC and Special Conditions of Contract mentioned in the tender documents, the condition mentioned in Special Conditions of Contract will prevail. However, Engineer's decision in this connection shall be final and binding.

Part I, Chapter-IV and V of the tender document contains General Conditions of Contract and Special Conditions of Contract specific to this work and shall be applicable in the contract.

(vii) Location

Works are to be executed at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway under General Manager/Co /Jaipur Unit. However, DFCCIL reserves right to change the site of work anywhere in adjacent / adjoining area of the work defined in Para 1.3.1 (iii) above in the jurisdiction and the contractor shall be bound to execute the work without any extra cost.

1.3.2(a) Tender Bid

The Tender Bid shall be submitted **through online only on website www.tenderwizard.com/DFCCIL** as under:-

The detailed procedure for tender opening and processing is given in Para 1.3.5.

1.3.2(b) Form of Tender

The Tender documents shall be in **single packets:-**
Detailed credentials as per the requirement of eligibility criteria and all tender papers including Summary of Prices and Schedule of Prices are to be submitted in "TECHNICAL BID". Summary of Prices and Schedule of Prices with percentage above /below / at par duly filled in are to be submitted in "FINANCIAL BID".
Any tender received later than the time and date of submission of tenders shall be rejected.
Tenders not submitted in the proper Forms are liable to be rejected.

S. No	Description	Documents
(1)	Offer letter complete.	Form No.1
(2)	Tenderer's credentials in accordance With para1.3.13 (i) & (ii) of Preamble and General Instructions to Tenderers.	Form No. 2A,2B&2C
(3)	Summary of Prices, Schedule of Prices & Total Prices	Form No.3 & 4
(4)	Earnest money in accordance with Para 1.3.8 and Cost of Tender Document in case of downloaded tenders in accordance with Para1.3.4.3 of Preamble and General Instructions to Tenderers in an envelope.	
(5)	Written confirmation authorizing the signatory of the tender to commit the tenderer and other documents as per format as applicable, in accordance with para1.3.6 of Preamble and General Instructions to Tenderers.	
(6)	A copy of the tender papers duly signed in ink & stamp by the tenderer, on each and every page in token of his having studied the tender papers carefully shall be scanned and uploaded.	

1.3.3 Tender Document

This tender document consists of following five parts along with Instructions to bidders for online bidding:

CHAPTERS	DESCRIPTION
	Instructions to bidders for online bidding
PART - I	
Chapter I	Notice Inviting Tender
Chapter II	General Information / Data sheet

Chapter III	Preamble and General Instructions to Tenderers
Chapter IV	General Conditions of Contract
Chapter V	Special Conditions of Contract
PART - II	Technical Specifications
PART - III	Additional Technical Specifications
PART - IV	
Chapter I	Mile Stones and Time Schedule
Chapter II	Tender Forms (including Schedule of Prices)
PART - V	Drawings

1.3.4 Sale and Submission of Tender Document

1.3.4.1 Tender document can be downloaded from the websites: **www.**tenderwizard.com/DFCCIL or www.dfccil.gov.in . Cost of Tender document shall be deposited with Demand Draft / Banker's cheque of Rs. 10000/- + 18% GST payable at Jaipur in favour of CPM/DFCCIL/Jaipur. The cost of the tender form is not refundable and also not transferable.

The tender fee and EMD as per tender document is to be deposited in the tender box kept in DFCCIL unit office Jaipur, as per address given in Bid document before the schedule date and time of submission of the tender otherwise the Bid will not be considered and shall be summarily rejected.

Alternative, tender fee and EMD can also be deposited by RTGS before the last date and time of submission of online bid. In such case, no documents are required to be deposited physically in the tender box. Scanned copy of RTGS receipt, duly indicating UTR number should be uploaded online along with the tender. Details of DFCCIL/Jaipur bank account for making payment by RTGS are as under:

Name	CPM DFCCIL Jaipur
Bank account number	369201010054636
IFSC code	UBIN0536920
Bank Name	Union Bank of India
Bank Branch	Bapu Nagar, Jaipur (Rajasthan)

The entire bid document shall be scanned & uploaded online on the website. The hard copy of those pages should be scanned after singed and stamp.

All Micro and Small Enterprises (MSEs) who are having UdyogAdhar Memorandum shall be given all benefits towards Tender Fee and Earnest Money (EMD) in terms of Railway Board Letter No.2010/RS(G)/363/1 dated 31.03.2016.

1.3.4.2 Clause applicable for tender documents downloaded from Internet

Tenderer/s is free to download tender documents at their own cost, for the purpose of perusal as well as for using the same as tender document for submitting their offer .Master copy of the tender document will be available in the office of General Manager/Co, Dedicated Freight Corridor Corporation of India Limited, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur-302020 India. After award of the work, an agreement will be drawn up. The agreement shall be prepared based on the master copy available in the office of General Manager/Co, Dedicated Freight Corridor Corporation of India Limited, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur-302020 India and not based on the tender documents submitted by the Tenderer. In case of any discrepancy between the tender documents downloaded from the internet and the master copy, later shall prevail and will be binding on the Tenderers. No claim on this account shall be entertained.

1.3.4.3 Cost of Tender documents downloaded from internet

Tender documents are available on Dedicated Freight Corridor Corporation of India Limited website i.e. **www.**tenderwizard.com/DFCCIL or www.dfccil.gov.in and the same can be downloaded and used as tender documents for online submitting the offer. The cost of the tender document as indicated above in para 1.3.4.1 above will have to be deposited by the tenderer in the form of Demand draft/ banker's cheque/e-payment payable in favour of CPM/DFCCIL/Jaipur. This should be paid separately and not included in the earnest money. **In case, the cost of the tender document as detailed above is not deposited, tender will be summarily rejected.**

1.3.4.4 Complete tender documents must be submitted online duly completed in all respect **upto 15.00 Hrs. on 06.01.2020 The TECHNICAL BID & FINACIAL BID** will be opened at **15.30 Hrs.** on the same day. Any modified date and time for online submission of tenders shall be uploaded on DFCCIL website **www.**tenderwizard.com/DFCCIL or www.dfccil.gov.in.

1.3.4.5 Deleted

1.3.4.6 Deleted

1.3.4.7 Each page of the tender papers is to be digitally signed by the tenderers or such person/s on his/their behalf that is/are legally authorized to sign for him / them.

1.3.4.8 Care in Submission of Tenders –

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 quoted rates by tenderer in tender forms are adequate and all- inclusive in item of Taxes (except GST), Duties & Levies etc. in terms of General/Special Conditions of Contract for the completion of works to the entire satisfaction of the Employer .

1.3.4.9 Tenders containing erasures and/or alteration of the tender documents are liable to be rejected. Any correction made by Tenderer(s) in his/their entries must be attested by him/them.

1.3.4.9.1 All communication between the Employer and the tenderer shall be in writing. For the purposes of seeking clarification, the Employer's address is:
General Manager/Co , Dedicated Freight Corridor Corporation of India Limited, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur-302020, India Telephone: +91-141-7196260, Fax number: +91-141-7196200
Electronic mail address: anuragsharma@dfcc.co.in

1.3.5 Opening of Tender:

(a) Tender will be opened at 15.30 hrs. on 06.01.2020 in the Dedicated Freight Corridor Corporation of India Limited, Conference Room; **General Manager/Co , Dedicated Freight Corridor Corporation of India Limited, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur-302020**.

(b) After the opening of "TECHNICAL & FINANCIAL BID" of all the tenderers, these bids shall be scrutinized and analysed. If found necessary by the Employer, the tenderers shall be asked to furnish clarifications and the Employer may also hold discussions with the tenderers after giving due notice. The names of the tenderers whose bid are considered complete and meet eligibility criteria shall be short listed.

(c) The earnest money of non-qualifying tenderers will be returned back within a reasonable period.

1.3.6 Constitution of the Firm:-

1.3.6.1 Tenderer shall clearly specify whether the tender is submitted on his own or on behalf of a partnership firm /Joint Venture (JV)/ Company. The tenderer(s) who is / are constituents of the firm / Company, shall enclose self-attested copies of the constitution of their concern, Partnership Deed and Power of attorney along with their tender. Tender documents in such cases shall be signed by such persons as may be legally competent to sign them on behalf of the firm / company as the case may be.

1.3.6.2 The tenderer shall give full details of the constitution of the Firm / JV/Company and shall also submit following documents (as applicable), in addition to documents mentioned above:

(a) Sole Proprietorship Firm: The tenderer shall submit the notarized copy of the affidavit.

(b) Partnership Firm : The tenderer shall submit self-attested copies of (i) registered / notarized Partnership Deed and (ii) Power of Attorney duly authorizing one or more of the partners of the firm or any other person(s), authorized by all the partners to act on behalf of the firm and to submit & sign the tender, sign the agreement, witness measurements, sign measurement books, receive payments, make correspondences, compromise / settle / relinquish any claim (s) preferred by the firm, Sign "No claim Certificate", refer all or any dispute to arbitration and to take similar action in respect of all tenders / contracts or said tender / contract.

(c) Joint Venture: The tenderer shall submit documents as mentioned in clause 65 to GCC.

(d) Companies registered under Companies Act-1956: The tenderer shall submit (i) the copies of Memorandum of Association (MOA) and Articles of Association (AOA) of the company; and (ii) Power of attorney duly registered / notarized by the company (backed by the resolution of Board of Directors) in favour of the individual, signing the tender on behalf of company.

1.3.6.3 If it is mentioned in the tender submission that it is being submitted on behalf of / by a sole Proprietorship Firm / Partnership Firm /Joint venture/ registered Company etc. but above-mentioned documents (as applicable) are not enclosed along with tender, the tender shall be summarily rejected.

If it is NOT mentioned in the tender submission that it is being submitted on behalf of / by 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.

After opening of the tender, any document pertaining to the constitution of the Firm shall neither be asked nor be entertained / considered by DFCCIL.

1.3.6.4 A tender from Joint venture/ Partnership Firm etc. shall be considered only where permissible as per the tender conditions.

1.3.6.5 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 submission of tender. It may, however, recognize such power of attorney and changes after obtaining proper legal advice.

1.3.7 Validity of Tender:-

Tenderer shall keep his offer open for a minimum period of 90 days from the date of opening of the tender or as mentioned in the Tender Notice.

1.3.8 Earnest Money:-

(a) The tender must be accompanied by Earnest Money in favour of CPM/**DFCCIL, Jaipur** deposited in any of the forms as mentioned in 1.3.8(c), failing which the tender will not be considered.

(b) The earnest money shall remain deposited with the DFCCIL for the period of validity of the offer prescribed in this tender i.e. 90 days from the date of opening of tender. If the validity of the offer is extended, the validity of earnest money should also be extended failing which the offer after the expiry of the aforesaid period may not be considered by the DFCCIL.

(c) The Earnest money should be in any of the following forms:
e-payment/ FDR/ Banker's cheque / Demand Draft executed by State bank of India or any of the nationalized banks or any Indian Scheduled Bank.

(d) It shall be understood that the tender documents have been downloaded/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 Employer. Should the tenderer fail to observe or comply with the said stipulation, the aforesaid amount shall be liable to be forfeited to the DFCCIL.

(e) The earnest money of the unsuccessful tenderer(s) will, save as here- in-before provided, be returned to the unsuccessful tenderer(s) within a reasonable time but the DFCCIL shall not be responsible for any loss or depreciation that may happen for the due performance of the stipulation to keep the offer open for the period specified in the tender documents or to the earnest money while in their possession nor be liable to pay interest thereon.

NOTE: No interest shall be paid by DFCCIL on earnest money amount.

All Micro and Small Enterprises (MSEs) who are having UdyogAdhar Memorandum shall be given all benefits towards Tender Fee and Earnest Money (EMD) in terms of Railway Board Letter No.2010/RS(G)/363/1 dated 31.03.2016.

1.3.9 Execution of Contract Agreement:-

The Tenderer whose tender is accepted shall be required to appear in person at the office of General Manager/Co, Dedicated Freight Corridor Corporation of India Limited, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur-302020 India or if a firm or corporation, a duly authorized representative shall so appear and execute the contract agreement within 30 days after notice that the contract has been awarded to him. Failure to do so shall constitute a breach of the agreement affected by the acceptance of the tender in which case the full value of the earnest money accompanying the tender shall stand forfeited without prejudice to any other rights or remedies.

In the event of any tenderer whose tender is accepted refuses to execute the contract agreement as here in before provided, DFCCIL may determine that such tenderer has abandoned the contract and there upon his tender and acceptance thereof shall be treated as cancelled and DFCCIL shall be entitled to forfeit the full amount of the Earnest Money.

1.3.10 Security Deposit on Acceptance of Tender:

The security deposit / rate of recovery / mode of recovery on acceptance of tender shall be as per the Para 16(1) to 16(3) Of General Conditions of Contract (GCC).

1.3.11 Tenderer's Address

The tenderer should state in the tender his postal address legibly and clearly. Any communication sent in time, to the tenderer by post at his said address shall be deemed to have reached the tenderer duly and in time. Important documents should be sent by registered post.

1.3.12 Right of DFCCIL to Deal with Tenders

(a) The DFCCIL reserves the right of not to invite tenders for any of DFCCIL work or works or to invite open or limited tenders and when tenders are called to accept a tender in whole or in part or to reject any tender or all tenders without assigning reasons for any such action.

(b) 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 no tenderer(s) shall demand any explanation for the cause of rejection of his/their tender nor the DFCCIL undertake to assign reasons for declining to consider or reject any particular tender or tenders.

1.3.13 (i) Eligibility Criteria

(A): Technical Eligibility Criteria

Criteria	**Compliance Requirement**		**Documents**
Requirement	**Single Entity**	**Joint venture**	**Submission Requirements**
(i) The tenderer / JV firm or Lead Member of JV firm must have satisfactorily completed at least one single work in last three previous financial years and the current financial year upto the date of submission of tender, of similar nature viz-a-viz **"construction of any multi storied building with RCC framed structure."** For a minimum value of 35% of advertised value of tender.	Must meet requirement	Existing JV - Must meet requirement. Or Lead Member of proposed JV- Must meet requirement	The tenderer shall submit the completion certificates / certified completion certificates from the client(s) and or Photostat of original certificates of client. All documents either original or photocopy should be attested by Notary.

Note:

1. Value of completed work done by a member in an earlier JV Firm shall be reckoned only to the extent of the concerned member's share in that JV firm for the purpose of satisfying his / her compliance to the above mentioned technical eligibility criteria in the tender under consideration.

2. In case the tenderer/s is a partnership firm, the work experience shall be in the name of partnership firm only.
3. Completion certificate from Govt. organization /PSUs/Public Limited Company will be accepted. The certificate from Private individual/Private Company for whom such works are executed shall not be accepted.

(B): Financial Eligibility Criteria

Criteria	**Compliance Requirement**		**Documents**
Requirement	**Single Entity**	**Joint Venture**	**Submission Requirements**
The contractual payments received by the tenderer / JV firm or the arithmetic sum of contractual payments received by all the members of the JV firm in the previous three financial year and the current financial year up to the date of submission of tender shall be at least 150% of advertised value of tender.	Must meet Requirement	Must meet requirement	TDS certificates/ Audited balance sheets and or Photostat of TDS certificates/Audited Balance sheets clearly indicating the contractual amount received. All documents either original or photocopy should be attested by Notary.

Note: 1.Contractual payments received by a Member in an earlier JV firm shall be reckoned only to extent of the concerned member's share in that JV Firm for the purpose of satisfying compliance of the above mentioned financial eligibility criteria in tender for considerations.

2. In case the tenderer/s is a partnership firm, the turnover etc. shall be in the name of partnership firm only.

1.3.13 (ii) Credentials of Tenderer

The tenderer shall provide satisfactory evidence in support of their technical and financial eligibility, which are acceptable to DFCCIL, as follows:

(a) For Technical eligibility criteria, the details will be submitted in Form No. 2A along with supporting documents.

(b) For Financial eligibility criteria, the details will be submitted in Form No. 2B along with supporting documents.

(c) The tenderer shall submit the completion certificates/certified completion certificates from the client(s) or Photostat of original certificates of client. All documents either original or photocopy should be attested by Notary. These certificates should indicate the details of works carried out and successful commissioning of similar type of work executed by the tenderer. Completion certificate from Govt. organisation/PSUs/Public Limited Company will be accepted. The certificate from Private individual/Private Company for whom such

works are executed shall not be accepted. In case, the work is executed for Public Limited Company, copy of work order, bill of Quantity, TDS certificate payments received and copy of final/last bill paid by client shall be submitted.

The following will be applicable for evaluating the eligibility:

(i) Similar nature of work physically completed within the qualifying period, i.e. last three financial year and the current financial year (even though the work might have commenced before the qualifying period) shall only be considered in evaluating the eligibility.

(ii) The total value of similar nature of work completed during the qualifying period and not the payment received within qualifying period alone, shall be considered. In case, the final bill of similar nature of work has not been passed and final measurements have not been recorded, the paid amount including statutory deductions is to be considered. If final measurements have been recorded and work has been completed with negative variation, then also the paid amount including statutory deductions is to be considered.

However, if final measurements have been recorded and work has been completed with positive variation but variation has not been sanctioned, original contract agreement value or last sanctioned contract agreement value whichever is lower, shall be considered for judging eligibility.

(iii) As proof of sufficient financial capacity and organizational resources, contractor should have received total payments against satisfactory execution of all completed /on-going works of all types (not confined to only similar works) during the last three financial years and in the current financial year (up to the date of submission of the tender) of a value not less than 150% of advertised tender value.

(iv) Tenderer shall submit a statement of contractual payments received during last three financial years and current financial year on the prescribed Performa as per Form No. 2B. The details shall be based on the form 16-A issued by the employer i.e. the certificate of deduction of tax at source as per Income Tax Act 1961. The photocopies of Form 16-A shall be enclosed duly attested by Notary Public with seal and Notarial Stamp thereon or a certificate from auditor or audited balance sheet certified by Chartered Accountant clearly indicating the contractual amount received duly attested by Notary Public with seal and Notarial Stamp thereon.

(v) The tenderer shall be considered disqualified/in-eligible if:

(a) The Tenderer or any of its partners and/or subcontractors included in the tender has been banned for business with Ministry of Railways/DFCCIL along with any of its attached and subordinate offices through an order issued by Ministry of Railways as per list available on Website (http://www.indianrailways.gov.in/railwayboard) of Railway Board pertaining to banning of Business, with the banning being valid as on the date of submission the Tender.

(b) The Tenderer or any of its partners has suffered bankruptcy / insolvency or it is in the process of winding-up or there is a case of insolvency pending before any Court on the deadline of submission of application.

(vi) For the purposes of conversion of foreign currency to Indian rupees (INR) Bank Currency (BC) selling exchange rates as published by State Bank of India on the date 28 days prior to date of submission of tender shall be used. For few of the currencies where BC selling rates are not published by SBI or reserve bank of India, the exchange rate may be obtained from website- http://www.oanda.com/currency/historical-rates or http://www.xe.com.

(vii) For the purpose of evaluation of proposals ,all values given in INR in eligible qualification criteria and the values provided by the applicants in the proposal in the currencies other than INR shall be converted into one i.e. INR as per exchange rate mentioned in para (vi) above.

1.3.14 Period of Completion

The entire work is required to be completed in all respects within 8 months (Eight months) from the date of issue of the acceptance letter. Time is the essence of contract. The contractor shall be required to maintain steady and regular progress to the satisfaction of the Engineer to ensure that the work will be completed in all respects within the stipulated time.

1.3.15 If the Tenderer/s deliberately gives any wronginformation about credentials / documents in his/their tenders and thereby create(s) circumstances for acceptance of his/their tender, DFCCIL reserves the right to reject such tender at any stage, besides, shall suspend business with such tenderer. The EMD of such tenderers shall also be forfeited.

1.3.16 Quantum of work and materials:

The indicative schedule of quantities of various items of works is included in Form - 4 of the tender documents

1.3.17 Employer not bound to accept any tender:

The employer shall not be bound to accept the lowest or any tender or to assign any reason for non-acceptance or rejection of a tender. The employer reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender papers or to reduce the work or to accept any tender for less than the tendered quantities without assigning any reason whatsoever.

1.3.18 Schedule of Prices

The Schedule of the tender document lists out the Schedule of Prices for various items. Based on these, the total tender value has also been worked out.

1.3.19 Performance Guarantee: Refer relevant clause of GCC.

1.3.20 the tenderer shall furnish information for making payment through ECS/ NEFT / RTGS (Tender Form No. 8 placed at Part IV of the tender documents).

1.3.21 Negotiation:

Should DFCCIL decide to negotiate with a view to bring down the rates, the tenderer called for negotiations should furnish the following form of declaration before commencement of negotiations?

"I..... Do declare that in the event of failure of contemplated negotiations relating to Tender No..... dated .....my original tender shall remain open for acceptance on its original terms and conditions,"

1.3.22 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 equipment 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..

1.3.25 No form C & D shall be issued to the contractor for this work.

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GENERAL CONDITIONS OF CONTRACT

PART - I
CHAPTER IV

GENERAL CONDITIONS OF CONTRACT

DEFINITIONS AND INTERPRETATION

1. (1) 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 CPM/GGM/GM 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 General Manager/Co 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 / 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/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 / JV 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.

1.(2) **Singular and Plural**:- Words importing the singular number shall also include the plural and vice versa where the context requires.

1.(3) **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.

GENERAL OBLIGATION

2. (1) Execution Co-relation and intent of contract Documents:-The contract documents shall be signed in triplicate by the DFCCIL and the Contractor. The contract documents are complementary, and what is called for by any one shall be as binding as if called for by all, the intention of the documents is to include all labour and materials, equipment's and transportation necessary for the proper execution of work. Materials or work not covered by or properly inferable from any heading or class of the specifications shall not be supplied by the DFCCIL to the contractors unless distinctly specified in the contract documents. Materials or works described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards.

2.(2) If a work is transferred from the jurisdiction of one Railway to another Railway or to a Project Authority/ DFCCIL or vice versa while contract is in subsistence, the contract shall be binding on the Contractor and the Successor Railway/Project in the same manner & take effect all respects as if the Contractor and the Successor Project were parties there to from the inception and the corresponding officer or the Competent Authority in the Successor Railway/Project will exercise the same powers and enjoy the same authority as conferred to the Predecessor Railway/Project under the original contract/agreement entered into.

2.(3) If for administrative or other reasons the contract is transferred to the Successor Railway/Successor Project Authority of DFCCIL the contract shall not withstanding any things contained herein contrary there to, be binding on the Contractor and the Successor Railway /Project Authority/ DFCCIL in the same manner and take effect in all respect as if the Contractor and the Successor Railway/ successor Project Authority of DFCCIL had been parties thereto from the date of this contract. The contract shall be Administered/Managed by GGM/GM/Co/ GM nominated by DFCCIL.

3. (1) Law governing the contract:-The contract shall be governed by the law for the time being in force in the Republic of India.

3.(2) Compliance to regulations and bye-laws:-The contractor shall conform to the provision of any statute relating to the works and regulations and by-laws of any location authority and of any water and lighting companies or undertakings, with whose system the work is proposed to be connected and shall before making any variation from the drawings or the specifications that may be necessitated by so confirming give to the Engineer notice specifying the variation proposed to be made and the reasons for making the variation and shall not carry out such variation until he has received instructions from the Engineer in respect thereof. The contractor shall be bound to give all notices required by statute, regulations or bye-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

4. **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 inters concerning the work shall be in writing and no notice, communication, reference or complaint not in writing shall be recognized.

5. **Service of Notices on Contractors:-**The contractor shall furnish to the Engineer the name designation and address of his authorized agent and all complaints, notices, communications and references shall be deemed to have been duly given to the contractor if delivered to the contractor or his authorized agent or left at or posted to the address so given and shall be deemed to have been so given in the case of posting on day on which they would have reached such address in the ordinary course of post or on the day on which they were so delivered or left. In the case of contract by partners, any change in the constitution of the firm shall be forthwith notified by the contractor to the Engineer.

6. **Occupation and use of land:-** No land belonging to or in the possession of the Railway/DFCCIL shall be occupied by the Contractor without the permission of the Railway/DFCCIL. The Contractor shall not use, or allow to be used; the site for any purposes other than that of executing the works. Whenever non-railway bodies/persons are permitted to use railway premises with competent authority's approval, conservancy charges as applicable from time to time may be levied.

7. **Assignment or subletting of contract: -** The contractor shall not assign or sublet the contract or any part thereof or allow any person to become interested therein any manner whatsoever without the special permission in writing of the DFCCIL. Any breach of this condition shall entitle the DFCCIL to rescind the contract under clause 62 of these conditions and also render the contractor liable for payment to the DFCCIL in respect of any loss or damage arising or ensuing from such cancellation. Provided always that execution of the details of the work by petty contractor under the direct and personal supervision of the Contractor or his agent shall not be deemed to be sub-letting under this clause. The permitted subletting 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.

8. **Assistance by the DFCCIL for the Stores to be obtained by the Contractor:-** Owing to difficulty in obtaining certain materials (including Tools & Plant) in the market, the DFCCIL may have agreed without any liability therefore to endeavour to obtain or assist the contractor in obtaining the required quantities of such materials as may be specified in the tender. In the event of delay or failure in obtaining the required quantities of the aforesaid material the contractor shall not be deemed absolved of his own responsibility and shall keep in touch with day to day positions regarding their availability and accordingly adjust progress of works including employment of labour and the DFCCIL shall not in any way be liable for the supply of materials or for the non-supply thereof for any reasons whatsoever nor for any lossor damage arising in consequence of such delay or no supply.

9. Deleted

10. Carriage of materials:- No forwarding orders shall be issued by the DFCCIL for the conveyance of contractor's materials, tools and plant by Rail which may be required for use in the works and the contractor shall pay full freight charges at public tariff rates therefore.

11. Deleted

12. Representation on Works: - The contractor shall, when he is not personally present on the site of the works place and keep a responsible agent at the works during working hours who shall on receiving reasonable notice, present himself to the Engineer and orders given by the Engineer or the engineer's representative to the agent shall be deemed to have the same force as if they had been given to the Contractor. Before absenting himself, the contractor shall furnish the name and address of his agent for the purpose of this clause and failure on the part of the Contractor to comply with this provision at any time will entitle the DFCCIL to rescind the contract under clause 62 of these conditions.

13. Relics and Treasures:- All gold, silver, oil and other minerals of any description and all precious stones, coins, treasures relics antiquities and other similar things which shall be found in or upon the site shall be the property of the DFCCIL and the Contractor shall duly preserve the same to the satisfaction of the DFCCIL and shall from time to time deliver the same to such person or persons as the DFCCIL may appoint to receive the same.

14. Excavated material:-The contractor shall not sell or otherwise dispose of or remove except for the purpose of this contract, the sand, stones, clay, ballast, earth, rock or other substances or materials which may be obtained from any excavation made for the purpose of the works or any building or produced upon the site at the time of delivery of the possession thereof but all the substances, materials, buildings and produce shall be the property of the DFCCIL provided that the contractor may, with the permission of the Engineer, use the same for the purpose of the works either free of cost or pay the cost of the same at such rates as may be determined by the Engineer.

15. Indemnity by Contractors:- The contractor shall indemnify and save harmless the Railway/DFCCIL from and against all actions, suit proceedings losses, costs, damages, charges, claims and demands of every nature and description brought or recovered against the Railways/DFCCIL by reason of any act or omission of the contractor, his agents or employees, in the execution of the works or in his guarding of the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

16. (1) Security **Deposit: -** The earnest money deposited by the contractor with this tender will be retained by the DFCCIL as part of security for the due and faithful fulfilment of the contract by the contractor. The balance to make up the security deposit, the rates for which are given below, may be deposited by the contractor in cash or may be recovered by percentage deduction from the contractor's "on account" bills. 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 may not exceed 10% of the total value of the contract.

16.(2) Recovery of Security Deposit:- Unless otherwise specified in the special conditions, if any, the Security Deposit / rate of recovery / mode of recovery shall be as under:

(a) Security Deposit for each work should be 5% of the contract value.

(b) The rate of recovery should be at the rate of 10% of the bill amount till the full security Deposit is recovered.

(c) Security Deposits will be recovered only from the running bills of the contract and no other mode of collecting SD such as SD in the form of instruments like BG (except Note (ii) below); FD etc. shall be accepted towards Security Deposit. Security deposit shall be returned to the contractor after the expiry of the Defect Liability Period in all the cases other than Note (i) mentioned below and after passing the final bill based on No Claim Certificate with the approval of the Competent Authority. The Competent Authority shall normally be the authority who is competent to sign the contract. If this competent authority is of the rank lower than JA grade / General Manager/Co, DFCCIL, then JA grade officer / General Manager/Co, DFCCIL (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/DFCCIL against the contract concerned. Before releasing the SD, an unconditional and unequivocal no claim certificate from the contractor concerned should be obtained.

Note:-

(i) After the work is physically completed, security deposit recovered from the running bills of a contractor can be returned to him if he so desires, in lieu of FDR / irrevocable Bank Guarantee for equivalent amount to be submitted by him.

(ii) In case of contracts of value Rs.50 crore and above, irrevocable Bank Guarantee can also be accepted as a mode of obtaining security deposit.

16.(3) No interest will 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 (1) of this clause will be payable with interest accrued thereon.

16. (4) Performance Guarantee (P.G.)

The procedure for obtaining Performance Guarantee is outlined below:

(a) The successful bidder shall have to submit a Performance Guarantee (PG) within 30 (thirty) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 30 (thirty) 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 15% per annum shall be charged for the delay beyond 30 (thirty) days, i.e. from 31st day after the date of issue of LOA. In case the contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract shall be terminated duly forfeiting EMD and other dues, if any payable against that contract. The failed contractor shall be debarred from participating in re-tender for that work.

(b) The successful bidder shall submit the performance Guarantee in any of the following forms amounting to 5% of the contract value:-

(i) A deposit of Cash
(ii) Irrevocable Bank Guarantee
(iii) Government Securities including State Loan Bonds at 5 percent 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) A Deposit in the Post Office Saving Bank;
(vii) A 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 per cent below market value or at the face value whichever is less.

Note: The instruments as listed above will also be acceptable for Guarantees in case of Mobilization advance.

(c) The performance Guarantee shall be submitted by the successful bidder after the letter of acceptance has been issued, but before signing of the contract agreement. The agreement should normally be signed within 30 (thirty) days after the issue of LOA and the Performance Guarantee shall also be submitted within this time limit. This P. G. shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case, the time limit for completion of work gets extended, the contractor shall get the validity of Performance Guarantee 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 upto 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 5 % (five percent) for the excess value over the original contract value shall be deposited by the contractor.

(e) The performance Guarantee (PG) shall be released after the physical completion of the work based on the 'completion certificate' issued by the competent authority stating that the contractor has completed the work in all respects satisfactorily. The security deposit shall, however, be released only after the expiry of the defect liability period and after passing the final bill based on 'No Claim Certificate' from the contractor.

(f) Whenever the contract is rescinded, the security deposit shall be forfeited and the Performance Guarantee shall be encashed. The balance work shall be got done independently without risk and cost of the failed contractor, the failed contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a partnership firm, then every member / partner of such a firm shall be debarred from participating in the tender for the balance work in his / her individual capacity or as a partner of any other JV/partnership firm.

(g) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the President of India / DFCCIL is entitled under the contract (no withstanding and/or without prejudice to any other provisions in the contract 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 / DFCCIL 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 the notice to the effect by Engineer.

(iii) The contract being determined or rescinded under provision of the GCC the Performance Guarantee shall be forfeited in full and shall be absolutely at the disposal of the President of India.

17. Force Majeure Clause:- If at any time, during the continuance of this contract, the Performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics, strikes, lockouts or act of God (hereinafter, referred to events) provided, notice of the happening of any such event is given by either party to the other within 30 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non- performance of delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Engineer as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 120 days, either party may at its option terminate the contract by giving notice to the other party.

17-A Extension of time in Contracts: - Subject to any requirement in the contract as to completion of any portion or portions of the works before completion of the whole, the contractor shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:-

(i) **Extension due to modification**:- If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise and in any case not less than one month before the expiry of the date fixed for completion of the works.

(ii) **Extension for delay not due to DFCCIL or Contractor**:-If in the opinion of the Engineer the progress of work has any time been delayed by any act or neglect of Railways/DFCCIL's employees or by other contractor employed by the DFCCIL under sub-clause (4) of clause 20 of these conditions or in executing the work not forming part of the contract but on which contractor's performance necessarily depends or by reasons of proceeding taken or threatened by or dispute with adjoining or to neighbouring owners or public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Engineer pending arbitration or in consequences of the contractor not having received in due time necessary instructions from the DFCCIL for which he shall have specially applied in writing to the Engineer or his authorized representative then upon happening of any such event causing delay, the contractor shall immediately give notice thereof in writing to the Engineer within 15 days of such happening but shall nevertheless make constantly his best endeavours to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Engineer to proceed with the works. The contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time. The Engineer on receipt of such request from the contractor shall consider the same and shall grant such extension of time as in his opinion is reasonable having regard to the nature and period of delay and the type and quantum of work affected thereby.

No other compensation shall be payable for works so carried forward to the extended period of time, the same rates, terms and conditions of contract being applicable as if such extended period of time was originally provided in the original contract itself.

(iii) **Extension for delay due to Railways / DFCCIL:-** In the event of any failure or delay by the Railway / DFCCIL to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the DFCCIL due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the contractor to damages or compensation therefore, but in any such case, the DFCCIL may grant such extension or extensions of the completion date as may be considered reasonable.

17-B Extension of time for delay due to contractor: - The time for the execution of the work or part of the works specified in the contract documents shall be deemed to be the essence of the contract and the works must be completed no 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, 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 (Performa at Form No. 14) 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 a sum equivalent to ½ of 1% of the contract value of the works for each week or part of the week.

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 the under noted percentage 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.

(i) For contract value up to Rs. 2 lakhs - 10% of the total value of the contract
(ii) For contracts valued above Rs. 2 lakhs- 10% of the first Rs.2 lakhs and 5% of the balance

Further competent authority while granting extension to the currency of contract under clause 17. (B) Of GCC may also consider levy of token penalty as deemed fit based on the merit of the case. 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.

18.(1) Illegal Gratification:- Any bribe, commission, gift or advantage given, promised or offered by or on behalf to the contractor or his partner, agent or servant or, anyone on his behalf, to any officer or employee of the DFCCIL, or to any person on his behalf in relation to obtaining or execution of this or any other contract with the DFCCIL shall, in addition to any criminal liability which he may incur, subject contractor to the rescission of the contract and all other contracts with the DFCCIL and to the payment of any loss or damage resulting from such decision and the DFCCIL shall be entitled to deduct the amounts so payable from any moneys due to the Contractor(s) under this contract or any other contracts with the DFCCIL.

18.(2) The contractor shall not lend or borrow from or have or enter into any monitory dealings and transactions either directly or indirectly with any employee of the DFCCIL and if he shall do so, the DFCCIL shall be entitled forthwith to rescind the contract and all other contracts with the DFCCIL. Any question or dispute as to the commission or any such offence or compensation payable to the DFCCIL under this clause shall be settled by the General Manager/Co /Jaipur of the DFCCIL, in such a manner as he shall consider fit and sufficient and his decision shall be final and conclusive. In the event of rescission of the contract under this clause, the contractor will not be paid any compensation whatsoever except payments for the work done up to the date of rescission.

EXECUTION OF WORKS

19.(1) Contractor's understanding:- It is understood and agreed that the contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the progress of the works, the general and local conditions, the labour conditions prevailing therein and all other matters which can in any way affect the works under the contract.

19.(2) Commencement of works:-The contractor shall commence the works within 15 days after the receipt by him of an order in writing to this affect from the Engineer and shall proceed with the same with due expedition and without delay.

19.(3) 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/ General Manager/Co. He shall also submit the details of organization (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 endeavour to fulfil 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.

19. (4) Setting out of works:- The contractor shall be responsible for the correct setting out of all works in relation to original points, lines and levels of reference at his cost. The contractor shall execute the work true to alignment, grade, levels and dimensions as shown in the drawing and as directed by the Engineer's representative and shall check these at frequent intervals. The contractor shall provide all facilities like labour and instruments and shall co- operate with the Engineer's representative to check all alignment, grades, levels and dimensions. If, at any time, during the progress of the works any error shall appear or arise in any part of the work, the contractor, on being required so to do by the Engineer's representative shall, at his own cost rectify such errors, to the satisfaction of the Engineer's representative. Such checking shall not absolve the contractor of his own responsibility of maintaining accuracy in the work. The contractor shall carefully protect and preserve all bench marks, sight rails, pegs and other things used in setting out the work.

20.(1) Compliance to Engineer's instructions:-The Engineer shall direct the order in which the several parts of the works shall be executed and the contractor shall execute without delay all orders given by the Engineer from time to time but the contractor shall not be relieved thereby from responsibility for the due performance of the works in all respects.

20.(2) Alterations to be authorized:-No alterations in or additions to or omissions or abandonment of any part of the works shall be deemed authorized, except under instructions from the Engineer, and the contractor shall be responsible to obtain such instructions in each and every case in writing from the Engineer.

20.(3) Extra works:- Should works over and above those included in the contract require to be executed at the site, the contractor shall have no right to be entrusted with the execution of such works which may be carried out by another contractor or contractors or by other means at the option of the DFCCIL.

20. (4) Separate contracts in connection with works: - The DFCCIL shall have the right to let other contracts in connection with the works. The contractor shall afford other contractors reasonable opportunity for the storage of their materials and the execution of their works and shall properly connect and coordinate his work with theirs. If any part of the contractors work depends for proper execution or result upon the work of another contractor(s), the contractor shall inspect and promptly report to the Engineer any defects in such works that render it unsuitable for such proper execution and results. The contractor's failure so-to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other contractor's work after the execution of his work.

21. Instruction of Engineer's Representative: - 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.

22. (1) Adherence to specifications and drawings: - The whole of the works shall be executed in perfect conformity with the specifications and drawings of the contract. If contractor performs any works in a manner contrary to the specifications or drawings or any of them and without such reference to the Engineer he shall bear all the costs arising or ensuing therefore and shall be responsible for all loss to the DFCCIL.

22. (2) Drawings and specifications of the works: - The contractor shall keep one copy of drawings and specifications at the site, in good order, and such contract documents as may be necessary available to the Engineer or the Engineer's representative.

22. (3) Ownership of drawings and specifications:- All drawings and specifications and copies thereof furnished by the DFCCIL to the Contractor are deemed to be the property of the DFCCIL. They shall not be used on other works and with the exception of the signed contract set, shall be returned by the contractor to the DFCCIL on completion of the work or termination of the contract.

22.(4) Compliance with Contractor's request for details:- The Engineer shall furnish with reasonable promptness, after receipt by him of the contractor's request for the same, additional instructions by means of drawings or otherwise, necessary for the proper execution of the works or any part thereof. All such drawing and instructions shall be consistent with the contract Documents and reasonably inferable there from.

22.(5) Meaning and intent of specification and drawings:- If any ambiguity arises as to the meaning and intent of any portion of the specifications and drawings or as to execution or quality of any work or material, or as to the measurements of the works the decision of the Engineer thereon shall be final subject to the appeal (within 7 days of such decision being intimated to the contractor) to the Chief Engineer/ General Manager/Co who shall have the power to correct any errors, omissions, or discrepancies in aforementioned items and whose decision in the matter in dispute or doubt shall be final and conclusive.

23 Working during night: - The contractor shall not carry out any work between sun-set and sun-rise without the previous permission of the Engineer/DFCCIL.

24. Damage to Railway / DFCCIL property or private life and property:-The contractor shall be responsible for all risk to the work and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of the Railway/DFCCIL or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the Railway/ DFCCIL and this although all reasonable and proper precautions may have been taken by the contractor, and in case the Railway / DFCCIL shall be called upon to make good any costs, loss or damages, or to pay an compensation, including that payable under the provisions of the Workmen's Compensation Act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid by reason of any act, or any negligence or omissions on the part of the contractor the amount of any costs or charges including costs and charges in connection with legal proceedings, which the Railway / DFCCIL may incur in reference thereto, shall be charged to the contractor. The Railway / DFCCIL shall have the power and right to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to contractor, as aforesaid any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the contractor.

25. Sheds, stores houses and Yards:-The contractor shall at his own expense provide himself with sheds, stores houses and yards in such situations and in such numbers as in the opinion of the Engineer is requisite for carrying on the works and the contractor shall keep at each such sheds, stores houses and yard a sufficient quantity of materials and plant in stock as not to delay the carrying out of the works with due expedition and the Engineer and the Engineer's representative shall have free access to the said sheds, store houses and yards at any time for the purpose of inspecting the stock of materials or plant so kept in hand, and any materials or plan which the Engineer may object to shall not be brought upon or used in the works, but shall be forthwith removed from the sheds, store houses or yards by the contractor. The contractor shall at his own expenses provide and maintain suitable mortar mills, soaking vats or any other equipment necessary for the execution of the works.

26. Provision of efficient and competent Staff at work sites by the Contractor:-

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

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

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

26A. Deployment of Qualified Engineers at Work Sites by the Contractor:-

26A.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 Ministry of Railways through separate instructions from time to time.

26A.2 In case the contractor fails to employ the Engineer, as aforesaid in Para 26A.1, he shall be liable to pay penalty at the rates, as may be prescribed by the Ministry of Railways through separate instructions from time to time for the default period for the provisions, as contained in Para 26A.1.

26A.3 Deleted

27.(1) 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 may be found requisite to be 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.

27. (2) Removal of improper work and materials:- The Engineer or the Engineer's Representative shall be entitled to order from time to time:

(a) The removal from the site within the time specified in the order of any materials which in his opinion are not in accordance with the specifications or drawings.
(b) The substitution of proper and suitable materials, and
(c) the removal and proper re-execution, notwithstanding any previous tests thereof or on account payments therefore, of any work which in respect of materials or workmanship; is not in his opinion in accordance with the specifications and in case of default on the part of the contractor in carrying out such order the DFCCIL shall be entitled to rescind the contract under clause 62 of these conditions.

28. Facilities for inspection:- The contractor shall afford the Engineer and the Engineer's Representative every facility for entering in and upon every portion of the work at all hours for the purpose of inspection or otherwise and shall provide all labour, materials, planks, ladders, pumps, appliances and things of every kind required for the purpose and the Engineer and the Engineer's Representative shall at all times have free access to every part of the works and to all places at which materials for the works are stored or being prepared.

29. Examination of work before covering up:- The contractor shall give 7 days' notice to the Engineer or the Engineer's representative whenever any work or materials are intended to be covered up in the earth, in bodies or walls or otherwise to be placed beyond the reach of measurements in order that the work may be inspected or that correct dimensions may be taken before being so covered, placed beyond the reach of measurement in default whereof, the same shall at the option of the Engineer or the Engineer's representative be uncovered and measured at the contractor's expense or no allowance shall be made for such work or materials.

30. Temporary Works: - All temporary works necessary for the proper execution of the works shall be provided and maintained by the contractor and subject to the consent of the Engineer shall be removed by him at his expenses when they are no longer required and in such manner as the Engineer shall direct. In the event of failure on the part of the contractor to remove the temporary works, the Engineer will cause them to be removed and cost as increased by supervision and other incidental charges shall be recovered from the contractor. If temporary huts are provided by the contractor on the Railway / DFCCIL land for labour engaged by him for the execution of works, the contractor shall arrange for handing over vacant possession of the said land after the work is completed; if the contractor's labour refuse to vacate, and have to be rejected by the Railway / DFCCIL necessary expenses incurred by the Railway / DFCCIL in connection therewith shall be borne by the contractor.

31. (1) Contractor to supply water for works: - Unless otherwise provided in the contract, the contractor shall be responsible for the arrangements to obtain supply of water necessary for the works.

31.(2) Deleted

31.(3) Deleted

31.(4)(a) Contractor to arrange supply of Electric power for works:- Unless otherwise provided in the contract, the contractor shall be responsible for arrangements to obtain supply of electric power for the works.

31.(4) (b) Deleted

32. Property in materials and plant:- The materials and plant brought by the Contractor upon the site or on the land occupied by the Contractor in connection with the works and intended to be used for the execution thereof shall immediately, they are brought upon the site of the said land, be deemed to be the property of the Railway / DFCCIL. Such of them as during the progress of the works are rejected by the Engineer under Clause 25 of these conditions or are declared by him not to be needed for the execution of the works or such as on the grant of the certificate of completion remain unused shall immediately on such rejection, declaration or grant cease to be deemed the property of the Railway / DFCCIL and the Contractor may then (but not before) remove them from the site or the said land. This clause shall not in any way diminish the liability of the Contractor nor shall the Railway / DFCCIL be in any way answerable for any loss or damage which may happen to or in respect of any such materials or plant either by the same being lost, stolen, injured or destroyed by fire, tempest or otherwise.

33. (1) Tools, Plant and Materials Supplied by Railway / DFCCIL: - The Contractor shall take all reasonable care of all tools, plant and materials or other property whether or a like description or not belonging to the Railway/DFCCIL and committed to his charge for the purpose of the works and shall be responsible for all damage or loss caused by him, his agents, permitted subcontractor, or his workmen or others while they are in his charge. The Contractors shall sign accountable receipts for tools, plants and materials made over to him by the engineer and on completion of the works shall hand over the unused balance of the same to the Engineer in good order and repair, fair wear and tear excepted, and shall be responsible for any failure to account for the same or any damage done thereto.

33.(2) Hire of DFCCIL / Railway's Plant:- The Railway / DFCCIL may hire to the Contractor such plant as concrete mixers, compressors and portable engines for use during execution of the works on such terms as may be specified in the special conditions or in a separate agreement for Hire of Plant.

34. (1) Precaution during progress of works: - During the execution of works, unless otherwise specified, the Contractor shall at his own cost provide the materials for and execute all shoring, timbering and strutting works as is necessary for the stability and safety of all structures, excavations and works and shall ensure that no damage, injury or loss is caused or likely to be caused to any person or property.

34.(2) Roads and Water courses:- Existing roads or water courses shall not be blocked, cut through, altered, diverted or obstructed in any way by the Contractor, except with the permission of the Engineer. All compensations claimed for any unauthorized closure, cutting through, alterations, diversion or obstruction to such roads or water courses by the Contractor or his agent or his staff shall be recoverable from the Contractor by deduction from any sums which may become due to him in terms of contract, or otherwise according to law.

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

34.(4) Safety of Public:- The Contractor shall be responsible to take all precautions to ensure the safety of the public whether on public or DFCCIL/Railway property and shall post such look out men as may in the opinion of the Engineer be required to comply with regulations pertaining to the work.

35. Deleted.

36.(1) Suspension of works:- The Contractor shall on the order of the Engineer, suspend the progress of the works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Engineer. If such suspension is:-

(a) Provided for in the contract, or
(b) Necessary for the proper execution of the works or by the reason of weather conditions or by some default on the part of the Contractor, and/or
(c) Necessary for the safety of the works or any part thereof.

36.(2) The Contractor shall not be entitled to the extra costs, if any, incurred by him during the period of suspension of the works, but in the event of any suspension ordered by the Engineer for reasons other than aforementioned and when each such period of suspensions exceeds 14 days, the contractor shall be entitled to such extension of time for completion of the work as the Engineers may consider proper having regard to the period or periods of such suspensions and to such compensations as the Engineer may consider reasonable in respect of salaries or wages paid by the Contractor to his employees during the periods of such suspension.

36.(3) Suspension lasting more than 3 months:- If the progress of the works or any part thereof is suspended on the order of the Engineer for more than three months at a time, the Contractor may serve a written notice on the Engineer requiring permission within 15 days from the receipt thereof to proceed with the works or that part thereof in regard to which progress is suspended and if such permission is not granted within that time the Contractor by further written notice so served may, but is not bound to, elect to treat the suspension where it affects part only of the works as an omission of such part or where it affects the whole of the works, as an abandonment of the contract by the DFCCIL.

37. **Rates for items of works:-** The rates, entered in the accepted Schedule of Rates of the Contract are intended to provide for works duly and properly completed in accordance with the general and special (if any) conditions of the contract and the specifications and drawings together with such enlargements, extensions, diminutions, reductions, alterations or additions as may be ordered in terms of Clause 42 of these conditions and without prejudice to the generality thereof and shall be deemed to include and cover superintendence and labour, supply, including full freight, of materials, stores, patterns, profiles, moulds, fittings, centring, scaffolding, shoring props, timber, machinery, barracks, tackle, roads, pegs, posts, tools and all apparatus and plant required on the works, except such tools, plant or materials as may be specified in the contract to be supplied to the Contractor by the DFCCIL, the erection, maintenance and removal of all temporary works and, buildings, all watching, lighting, bailing, pumping and draining, all prevention of or compensation for trespass, all barriers and arrangements for the safety of the public or of employees during the execution of works, all sanitary and medical arrangements for labour camps as may be prescribed by the DFCCIL, the setting of all work and of the construction, repair and upkeep of all centre lines, bench marks and level pegs thereon, site clearance, all fees duties, royalties, rent and compensation to owners for surface damage or taxes and impositions payable to local authorities in respect of land, structures and all material supplied for the work or other duties of expenses for which the Contractor may become liable or may be put to under any provision of law for the purpose of or in connection with the execution of the contract, and all such other incidental charges or contingencies as may have been specially provided for in the specifications.

38. **Deleted**

39.(1) **Rates for extra items of works:-** Any type 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 "Schedule of Rates of Railway" modified by the tender percentage and such items are 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.

39.(2) Provided that if the Contractor commences work or incurs any expenditure in regard thereto before the rates as determined and agreed upon as lastly hereunto fore-mentioned, then and in such a case the Contractor shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of determination of rates as aforesaid according to the rates as shall be fixed by the Engineer. However if the Contractor is not satisfied with the decision of the Engineer in this respect he may appeal to the General Manager/Co. within 30 days of getting the decision of the Engineer, supported by analysis of the rates claimed. The General Manager/CO.'s decision after hearing both the parties in the matter would be final and binding on the Contractor and the DFCCIL.

40. (1) Handing over of works: - T h e Contractor shall be bound to hand over the works executed under the contract to the DFCCIL complete in all respects to the satisfaction of the Engineer. The Engineer shall determine the date on which the work is considered to have been completed, in support of which his certificate shall be regarded as sufficient evidence for all purposes. The Engineer shall determine from time to time, the date on which any particular section of the work shall have been completed, and the contractor shall be bound to observe any such determination of the Engineer.

40.(2) Clearance of site on completion:- On completion of works, the Contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and works clean and in a workman like condition to the satisfaction of the Engineer. No final payment in settlement of the accounts for the works shall be paid, held to be due or shall be made to the, Contractor till, in addition to any other condition necessary for final payment, site clearance shall have been affected by him, and such clearance may be made by the Engineer at the expense of the Contractor in the event of his failure to comply with this provision within 7 days after receiving notice to that effect. Should it become necessary for the Engineer to have the site cleared at the expenses of the Contractor, the DFCCIL shall not be held liable for any loss or damage to such of the Contractor's property as may be on the site and due to such removal there from which removal may be effected by means of public sales of such materials and property or in such a way as deemed fit and convenient to the Engineer.

VARIATIONS IN EXTENT OF CONTRACT

41. Modification to contract to be in writing: - In the event of any of the provisions of the contract requiring to be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the DFCCIL 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 DFCCIL unless and until the same is incorporated in a formal instrument and signed by the DFCCIL and the Contractor, and till then the DFCCIL shall have the right to repudiate such arrangements.

42.(1) Powers of modification to contract:- The Engineer on behalf of the DFCCIL 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.

42.(2) (i) Unless otherwise specified in the contract, the accepted variation in quantity of each individual item of the contract would be up to 25% of the quantity originally contracted, except in case of foundation work. The contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any claim or any compensation whatsoever up to the limit of 25% variation in quantity of individual item of works.

(ii) In case of earthwork, the variation limit of 25% 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.

42.(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.

42.(4) 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 25% 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 25% 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 125% of the agreement quantity subject to the following conditions:

(a) Operation of an item by more than 125% of the agreement quantity needs the approval of Competent Authority of DFCCIL;

(i) Quantities operated in excess of 125% but up to 140% of the agreement quantity of the concerned item, shall be paid at 98% of the rate awarded for that item in that particular tender;

(ii) Quantities operated in excess of 140% but up to 150% of the agreement quantity of the concerned item shall be paid at 96% of the rate awarded for that item in that particular tender;

(iii) 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 96% of the rate awarded for that item in that particular tender.

(b) The variation in quantities as per the above formula will apply only to the Individual items of the contract and not on the overall contract value.

(c) Execution of quantities beyond 150% of the overall agreement value should not be permitted and, if found necessary, should be only through fresh tenders or by negotiating with existing contractor, with approval of Competent Authority of DFCCIL.

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

(a) The contract signing authority can decrease the items up to 25% of individual item without finance concurrence.

(b) For decrease beyond 25% for individual items or 25% 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 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.

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

6. 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).

7. - Deleted -

8. - Deleted -

9. - Deleted -

10. 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.

CLAIMS

43. (1) Monthly Statement of Claims: - The Contractor shall prepare and furnish to the Engineer once in every month 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 month and no claim for payment for and such work will be considered which has not been included in such particulars.

43.(2) Signing of "No Claim" Certificate:- The Contractor shall not be entitled to make any claim whatsoever against the DFCCIL under or by virtue of or arising out of this contract, nor shall the DFCCIL entertain or consider any such claim, if made by the Contractor, after he shall have signed a "No Claim" Certificate in favour of the DFCCIL in such form as shall be required by the DFCCIL after the works are finally measured up. The contractor shall be debarred from disputing the correctness of the items covered by "No Claim" Certificate or demanding a clearance to arbitration in respect thereof.

MEASUREMENTS, CERTIFICATES AND PAYMENTS

44. Quantities in schedule annexed to Contract: - The quantities set out in the accepted schedule of rates with items of works quantified are the estimated quantities of the works and they shall not be taken as the actual and correct quantities of the work to be executed by the Contractor in fulfilment of his obligations under the contract.

45. Measurement of works: - 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 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 measures. 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.

46. (1) "On-Account" Payments:- The Contractor shall be entitled to be paid from time to time by way of "One-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 or the Engineer's representative's certificates of 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 10% of the total value of the contract provided always that the Engineer may by 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.

46.(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 paise shall be omitted and sums of 50 paise and more up to Re. 1/- will be reckoned as Re. 1/-

46.(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 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.

46. (4) Manner of payment: - Unless otherwise specified payments to the Contractor will be made by cheque/RTGS but no cheque/RTGS will be issued for and amount less than Rs. 100/-

46A PRICE VARIATION CLAUSE:

46A.1 Applicability: Price variation clause shall be applicable for this contract and irrespective of the contract completion period. Variation in quantities shall not be taken into account for applicability of PVC in the contract.

Materials supplied free of cost by DFCCIL to the contractors shall fall outside the purview of price variation clause. If, in any case, accepted offer include some specific payment to be made to consultant or some materials supplied by DFCCIL free or at fixed rate, such payment shall be excluded from the gross value of the work for the purpose of payment /recovery of price variation.

46A.2 Base month: The base month for the 'Price Variation Clause' shall be taken as month of opening of tender including extensions, if any, unless otherwise stated elsewhere. The quarter of applicability of PVC shall commence from the month following the month of opening of tender. The price variation shall be based on the average price Index of the quarter under consideration.

46A.3 Validity : Rates accepted by DFCCIL shall hold good till completion of work and no additional claim shall be admissible on account of fluctuations in market rates increase in taxes / any other levies / tolls etc. except that payment recovery for overall market situation shall be made as per Price variation clause given hereunder.

46A.4 Adjustment for variation in prices of material, labour, fuel, explosives detonators, steel, concreting, ferrous, nonferrous, insulator, zinc and cement shall be determined in the manner prescribed hereunder.

46A.5 Components of various items in a contract on which variation in prices be admissible shall be material, labour, fuel, explosives detonators, steel, cement and lime, concreting, ferrous, nonferrous, insulator, zinc, erection, etc. However, for fixed component, no price variation shall be admissible.

46A.6 the percentages of labour, material, fuel, component etc. in various types of Engineering Works shall be as under:

Component	% age	Component	% age
(A**) Earthwork contracts**	N.A		
Labour component	-	Other material components	-
Fuel component	-	Fixed component *	-
(B**) Ballast and Quarry products Contracts**	N.A		
Labour component	-	Other material components	-
Fuel component	-	Fixed component*	-
(C**) Tunnelling Contracts**	N.A		
Labour component	-	Detonator Component	-
Fuel component	-	Other material components	-
Explosive Component	-	Fixed component*	-
(**D) Other work Contracts**			
Labour component	30%	Fuel component	15%
Material component	40%	Fixed component*	15%

* It shall not be considered for any price variation

46A.7 Formulae: The amount of variation in prices (increase / decrease) in the several components (labour, material etc.) shall be worked out by the following formulae:

(i) $$L = \frac{W \times (L_Q - L_B)}{L_B} \times \frac{L_C}{100}$$

(ii) $$M = \frac{W \times (M_Q - M_B)}{M_B} \times \frac{M_C}{100}$$

(iii) $$F = \frac{W \times (F_Q - F_B)}{F_B} \times \frac{F_C}{100}$$

(iv) $S = S_W \times (S_Q - S_B)$

- Applicable for Schedule E.
- No other PVC shall be paid on Schedule E

(v) $$C = \frac{C_V \times (C_Q - C_B)}{C_B}$$

- Applicable for Schedule D.
- No other PVC shall be paid on Schedule D

L Amount of price variation in Labour.

M Amount of price variation in Materials.

F Amount of price variation in Fuel.

S Amount of price variation in Steel.

C Amount of price variation in Cement.

W Gross value of the work done by the contractor as per on account bill(s), excluding cost of materials supplied by DFCCIL at fixed price, minus the price values of cement and steel. This will also exclude specific payment, if any, to be made to the consultants engaged by contractors (such payment shall be indicated in the contractor's offer)

L_B Consumer price index number for industrial workers- All India- published in RBI bulletin for the base period.

L_Q Consumer Price Index Number for industrial workers -All India- Published in RBI bulletin for the average Price Index of the three months of the quarter under consideration.

M_B Index Number of wholesale prices–By groups and sub groups-All commodities- As published in the RBI Bulletin for the base period

M_Q Index Number of wholesale prices – By Groups and sub Groups-All commodities as published in the RBI Bulletin for the average Price Index of the three months of the quarter under consideration.

F_B Index Number of wholesale prices – By Groups and sub Groups for fuel, power, light and lubricants as published in the RBI Bulletin for the base period

F_Q Index Number of wholesale prices – By Groups and sub Groups for fuel and power as published in the RBI Bulletin for the average Price Index of the three months of the quarter under consideration.

S_W Weight of steel in tonnes supplied by the contractor as per the on accounts bill for the Month under consideration.

S_Q SAIL's (Steel Authority of India Limited) ex-works price plus applicable GST and Cess on GST (if any) there of (in rupees per tonne) for the relevant category of steel supplied by the contractor as prevailing on the first day of the month in which the steel was purchased by the contractor (or) as prevailing on the first day of the month in which the steel was brought to the site by contractor whichever is lower.

In case, there is no notification by SAIL for the month under consideration, the price of steel, as notified in the last available month is to be taken.

S_B SAIL's Ex- works price plus applicable GST and Cess on GST (if any) there of (in rupees per tonne) for the relevant category of steel supplied by the contractor as prevailing on the first day of month in which the tender was opened.

In case there is no notification by SAIL for the month under consideration, the price of steel as notified in the last available month is to be taken. If the rates in negotiated tenders are accepted, this will be the month in which negotiations were held.

C_V Value of cement supplied by contractor as per on account bill in the quarter under consideration.

C_B Index Number of wholesale prices of sub Group (of cement & lime) as published in the RBI Bulletin for the base period.

C_Q Index Number of wholesale prices of sub Group (of cement & lime) as published in the RBI Bulletin for the average price index of three months of quarter under consideration.

L_C % of labour component

M_C % of Material component

F_C % of Fuel component

46A.8 the demands for escalation of cost shall be allowed on the basis of provisional indices

made available by Reserve Bank of India. Any adjustment needed to be done based on the finally published indices shall be made as and when they become available.

46A.9 Relevant categories of steel for the purpose of operating the above price variation formula, as mentioned in this clause, based on SAIL's ex works price plus **applicable GST and Cess on GST (if any) thereof,** shall be as under:

S. No.	Category of steel supplied in Railway work	Category of steel produced by SAIL whose ex works price plus applicable GST and Cess on GST (if any) would be adopted to determine price variation.
1	Reinforcement bars and other rounds	TMT8mm,IS1786Fe 415/Fe500D
2	All types and sizes of angles	Angle 65X65X6mmIS2062E250ASK
3	All types and sizes of plates	PMPlatesabove10-20mmIS2062E250A SK
4	All types and sizes of channels and joists	Channels 200x75mmIS2062E250ASK
5	Any other section of steel not covered in the above categories and excluding HTS	Average of price for the 3 categories covered under S.No.1,2, 3 above

Special Note

(1) It is clearly indicated that price variation implies both increase as well decrease in input prices and therefore price variation during the currency of the contract may result in extra payment or recovery as the case may be.

(2) The Index Number for the base period will be the Index Number as obtained for the month of opening of the tender and the quarter will commence from the month following the month of opening of tender. If the rates quoted in negotiated tenders are accepted, the base month for PVC will be month in which Negotiations are held.

(3) General Conditions of Contract shall be applicable in context of Price variation. However, decision of Engineer shall be final & finding, in case of any conflict.

46A.10 Price Variation during Extended Period of Contract

The price adjustment as worked out above, i.e. either increase or decrease shall be applicable upto the stipulated date of completion of work including the extended period of completion where such extension has been granted under Clause 17-A of the General Conditions of Contract. However, where extension of time has been granted due to contractor's failure under Clause 17-B of the General Conditions of Contract, price adjustment shall be done as follows:

(a) In case the indices increase above the indices applicable to the last month of original completion period or the extended period under Clause 17-A, the price adjustment for the period of extension granted under Clause 17-B shall be limited to the amount payable as per the Indices applicable to the last month of the original completion period or the extended period under Clause 17-A of the General Conditions of Contract; as the case may be.

(b) In case the indices fall below the indices applicable to the last month of original/extended period of completion under Clause 17-A, as the case may be; then the lower indices shall be adopted for the price adjustment for the period of extension under Clause 17-B of the General Conditions of Contract.

47.0 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 passing 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 DFCCIL 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.

48. (1) Certificate of completion of works: - As soon as in the opinion of the Engineer, the works 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 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 DFCCIL. 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.

48.(2) Contractor not absolved by completion Certificate:- The Certificate of completion in respect of the works referred to in sub-clause (1) of this clause shall not absolve the Contractor from his liability to make good any defects imperfections, shrinkages or faults which may appear during the period of maintenance specified in the tender arising in the opinion of the Engineer from materials or workmanship not in accordance with the drawings or specifications or instruction of the Engineer, which defects, imperfections, shrinkages or faults shall upon the direction in writing of the Engineer be amended and made good by the Contractor at his own cost: and in case of default

on the part of Contractor the Engineer may employ labour and materials or appoint another Contractor to amend and make good such defects, imperfections, shrinkages and faults and all expenses consequent thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from any moneys due to him under the contract.

49.0 Approval only by maintenance Certificate:- No certificate other than maintenance certificate referred to in Clause 50 of the conditions shall be deemed to constitute approval of any work or other matter in respect of which it is issued or shall be taken as an admission of the due performance of the contract or any part thereof or of the accuracy of any claim or demand made by the Contractor or of additional varied work having been ordered by the Engineer nor shall any other certificate conclude or prejudice any of the powers of the Engineer.

50.(1) Maintenance Certificate:- The Contract shall not be considered as completed until a Maintenance Certificate 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) 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 DFCCIL.

50.(2) Cessation of Railway's / DFCCIL Liability: - The DFCCIL shall not be liable to the Contractor for any matter arising out of or in connection with the contract of the execution of the works unless the contractor shall have made a claim in writing in respect thereof before the issue of the Maintenance Certificate under this clause.

50.(3) Unfulfilled Obligations:- Notwithstanding the issue of the Maintenance certificate the Contractor and (subject to sub-clause 2 of this clause) the DFCCIL shall remain liable for the fulfilment of any obligation incurred under the provision of the contract prior to the issue of the maintenance Certificate which remains unperformed at the time such certificate is issued and for the purposes of determining the nature and extent of any such obligations the contract shall be deemed to remain in force between the parties thereto.

51.(1) Final Payment:- On the Engineer's certificate of completion in respect of the works, adjustment shall be made and the balance of account based on the Engineer or the Engineer's representative's certified measurements of the total quantity of work executed by the contractor up to the date of completion and on the accepted schedule or 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 Contactor having delivered to the Engineer 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 correct, 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 woks 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.

51.(2) 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 any excess amount paid to him if as a result of such examination any over-payment to him is discovered to have made in respect of any works done or alleged to have been done by him under the contract.

51A. Production of vouchers etc. by the Contractor:-

(i) For a contract of more than one crore of rupees, the contractor shall, whenever required, produce or cause to be produced for examination by the Engineer any quotation, invoice, cost or other account, book of accounts, voucher, receipt, letter, memorandum, paper of 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 any way relating to the execution of this contract or relevant for verifying or ascertaining cost of execution of this contract (the decision of the engineer on the question of relevancy of any documents, information or return being final and binding in the parties).The contractor shall similarly produce vouchers; etc., if required to prove to the Engineer, that materials supplied by him, are in accordance with the specifications laid down in the contract.

(ii) If any portion of the work in a contract of value more than one crore of rupees be carried out by a sub-contractor or any subsidiary or allied firm or company (as per Clause 7 of the General Conditions of Contract), the Engineer shall have power to secure the books of such sub-contract or any subsidiary or allied firm or company, through the contractor, and such books shall be open to his inspection.

(iii) The obligations imposed by sub clause (i) & (ii) above is without prejudice to the obligations of the contractor under any statute rules or orders binding on the contractor.

52.0 Withholding and lien in respect of sums claimed:- Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the contractor, the DFCCIL shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, the DFCCIL shall be entitled to withhold the said cash security deposit or the security if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the DFCCIL shall be entitled to withhold and have a lien to the extent of the such claimed amount or amounts referred to supra, from any sum or sums found payable or which at any time thereafter may become payable to the contractor under the same contract or any other contract with this or any other DFCCIL or any Department of the Central Government pending finalization or adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above, by the DFCCIL will be kept withheld or retained as such by the DFCCIL till the claim arising out of or under the contract is determined by the arbitrator (if the contract governed by the arbitration clause) or by the competent court as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to supra and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the DFCCIL shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may be whether in his individual capacity or otherwise.

52A. Lien in respect of claims in Other Contracts:-

(i) Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the DFCCIL, against any claim of this or any other DFCCIL or any other Department of the Central Government in respect of a payment of a sum of money arising out of or under any other contract made by the contractor with this or any other Department of the Central Government.

(ii) However, recovery of claims of DFCCIL in regard to terminated contracts may be made from the Final Bills, Security Deposits and Performance Guarantees of other contract or contracts, executed by the contractor. The Performance Guarantees submitted by the Contractor against other contracts, if required, may be withheld and encashed. In addition, 10% of each subsequent 'on-account bill' may be withheld, if required, for recovery of DFCCIL/Railways' dues against the terminated contract.

(iii) It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the DFCCIL will be kept withheld or retained as such by the DFCCIL till the claim arising out of or under any other contract is either mutually settled or determined by arbitration, if the other contract is governed by arbitration clause or by the competent court as the case may be and contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

53.0 Signature on Receipts for Amounts:- Every receipt for money which may become payable or for any security which may become transferable to the Contractors under these presents, shall, if signed in the partnership name by anyone of the partners of a Contractor's firm be a good and sufficient discharge to the DFCCIL in respect of the moneys or security purported to be acknowledged thereby and in the event of death of any of the Contractor, partners during the pendency of the contract it is hereby expressly agreed that every receipt by anyone of the surviving Contractor partners shall if so signed as aforesaid be good a sufficient discharge as aforesaid provided that nothing in this clause contained shall be deemed to prejudice or effect any claim which the DFCCIL may hereafter have against the legal representative of any contractor partner so dying for or in respect to any breach of any of the conditions of the contract,

provided also that nothing in this clause contained shall be deemed to prejudice or effect the respective rights or obligations of the Contractor partners and of the legal representatives of any deceased Contractor partners interest.

LABOUR

54.0 Wages to Labour: - The Contractor shall be responsible to ensure compliance with the provision of the Minimum Wages Act, 1948 (hereinafter referred to as the "said Act" and the Rules made there under in respect of any employees directly or through petty contractors or subcontractors employed by him on road construction or in building operations or in stone breaking or stone crushing for the purpose of carrying out this contract.

If, in compliance with the terms of the contract, the Contractor supplied any labour to be used wholly or partly under the direct orders and control of the DFCCIL whether in connection with any work being executed by the Contractor or otherwise for the purpose of the DFCCIL such labour shall, for the purpose of this clause, still be deemed to be persons employed by the Contractor.

If any moneys shall, as a result of any claim or application made under the said Act be directed to be paid by the DFCCIL, such money shall be deemed to be moneys paid by it as aforesaid within seven days after the same shall have been demanded, the Railway/DFCCIL shall be entitled to recover the same form any moneys due or accruing to the Contractor under this or any other Contract with the DFCCIL.

54A. Apprentices Act: - The Contractor shall be responsible to ensure compliance with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued there under from time to time in respect of apprentices directly or through petty contractors or sub-contractors employed by him for the purpose of carrying out the Contract.

If the contractor directly or through petty contractors or sub-contractors fails to do so, his failure will be a breach of the contract and the DFCCIL may, in its discretion, rescind the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation of the provisions of the Act.

Note: The contractors are required to engage apprentices when the works undertaken by them last for a period of one year or more and / the cost of works is rupees one lakh or more.

55.0 Provisions of payments of Wages Act: - The Contractor shall comply with the provisions of the Payment of Wages Act, 1936 and the rules made there under in respect of all employees directly or through petty contractors or sub-contractors employed by him in the works. If In compliance with the terms of the contract, the Contractor directly or through petty contractors of sub-contractors shall supply any labour to be used wholly or partly under the direct orders and control of the Engineer whether in connection with the works to be executed hereunder or otherwise for the purpose of the Engineer such labour shall never the less be deemed to comprise persons employed by the contractor and any moneys which may be ordered to be paid by the Engineer shall be deemed to be moneys payable by the Engineer on behalf of the Contractor and the Engineer may on failure of the contractor to repay such

money to the Railways/DFCCIL deduct the same from moneys due to contractor in the terms of contract. The DFCCIL shall be entitled to deduct from any moneys due to the contractor (whether under this contract or any other contract) all moneys paid or payable by the DFCCIL by the way of compensation of aforesaid or for costs of expenses in connection with any claim thereto and the decision of the Engineer upon any question arising out of the effect or force of this clause shall be final and binding upon the Contractor.

55A. Provisions of Contract labour (Regulation and Abolition) Act, 1970:

55A.(1) The contractor shall comply with the provision of the contract labour (Regulation and Abolition) Act, 1970 and the Contract labour (Regulation and Abolition) Central Rules 1971 as modified from time to time, wherever applicable and shall also indemnify the DFCCIL from and against any claims under the aforesaid Act and the Rules.

55A.(2) The Contractor shall obtain a valid licence under the aforesaid Act as modified from time to time before the commencement of the work and continue to have a valid licence until the completion of the work. Any failure to fulfil the requirement shall attract the penal provision of the Contract arising out of the resultant non-execution of the work.

55A. (3) The Contractor shall pay to the labour employed by him directly or through subcontractors the wages as per provision of the aforesaid Act and the Rules wherever applicable. The Contractor shall notwithstanding the provisions of the contract to the contrary, cause to be paid the wages to labour indirectly engaged on the works including any engaged by subcontractors in connection with the said work, as if the labour had been immediately employed by him.

55A.(4) In respect of all labour directly or indirectly employed in the work for performance of the contractor's part of, the contract, the Contractor shall comply with or cause to be complied with the provisions of the aforesaid Act and Rules wherever applicable.

55A.(5) In every case in which, by virtue of the provisions of the aforesaid Act or the Rules, the DFCCIL is obliged to pay any amount of wages to a workman employed by the Contractor or his sub-contractor in execution of the work or to incur any expenditure on account of the Contingent, liability of the DFCCIL due to the contractor's failure to fulfil his statutory obligations under the aforesaid Act or the rules the DFCCIL will recover from the Contractor, the amount of wages so paid or the amount of expenditure so incurred, and without prejudice to the rights of the DFCCIL under the section 20, sub-section (2) and section 2, sub-section (4) of the aforesaid Act, the DFCCIL shall be at liberty to recover such amount or part thereof by deducting it from the security deposit and/ or from any sum due by the DFCCIL to the contractor whether under the contract or otherwise. The DFCCIL shall not be bound to contest any claim made against it under sub-section (1) of section 20 and sub-section (4) of section 21 of the aforesaid Act except on the written request of the contractor and upon his giving to the DFCCIL full security for all costs for which the DFCCIL might become liable in contesting such claim. The decision of the DFCCIL regarding the amount actually recoverable from the contractor as stated above shall be final and binding on the Contractor.

55B. Provisions of Employees Provident Fund and Miscellaneous Provisions Act, 1952:

The Contractor shall comply with the provisions of Para 30 & 36-B of the Employees Provident Fund Scheme, 1952; Para 3 & 4 of Employees' Pension Scheme, 1995; and Para 7 & 8 of Employees Deposit Linked Insurance Scheme, 1976; as modified from time to time through enactment of "Employees Provident Fund & Miscellaneous Provisions Act, 1952", wherever applicable and shall also indemnify the DFCCIL from and against any claims under the aforesaid Act and the Rules.

55C. Provisions of "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 thereto by the concerned State Govt. and submit certificate of Registration, issued from the Registering Officer of the concerned State Govt. (Labour Dept.). As per this Act, the tenderer shall be levied a cess @1% of cost of construction work, which would be deducted

From each bill. Cost of material, when supplied under a separate schedule item, shall be outside the purview of cess.

56.0 Reporting of Accidents of Labour: - The Contractor shall be responsible for the safety of all employees directly or through petty contractors or sub- contractor employed by him on the works and shall report serious accidents to any of them however and wherever occurring on the works to the Engineer or the Engineers Representative and shall made every arrangements to render all possible assistance.

57.0 Provision of Workmen's Compensation Act:- In every case in which by virtue of the provisions of section 12 sub-section (1) of the Workmen's Compensation Act 1923, DFCCIL is obliged to pay compensation to a workman directly or through petty contractor or subcontractor employed by the Contractor in executing the work, DFCCIL will recover from the Contractor the amount of the compensation so paid, and, without prejudice to the rights of DFCCIL under Section 12 Sub-section (2) of the said Act, DFCCIL shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by DFCCIL to the Contractor whether under these conditions or otherwise, DFCCIL shall not be bound to contest any claim made against it under Section 12 Sub-section (1) of the said Act except on the written request of the Contractor and upon his giving to DFCCIL full security for all costs for which DFCCIL might become liable in consequence of contesting such claim.

57A. Provision of Mines Act:- The contractor shall observe and perform all the provisions of the Mines Act, 1952 or any statutory modifications or re-enactment thereof for the time being in force and any rules and regulations made there under in respect of all the persons directly or through the petty contractors or sub-contractors employed by him under this contract and shall indemnify the DFCCIL from and against any claims under the Mines Act, or the rules and regulations framed there under, by or on behalf of any persons employed by him or otherwise.

58.0 DFCCIL not to provide quarters for Contractors: - No quarters shall normally be provided by the DFCCIL for the accommodation of the contractor or any of his staff employed on the work.

59.(1) Labour Camps:- The contractor shall at his own expense make adequate arrangements for the housing, supply of drinking water and provision of latrines and urinals for his staff and workmen, directly or through the petty contractors or sub-contractors and for temporary crèche (Bal-mandir) where 50 or more women are employed at a time. Suitable sites on DFCCIL land, if available, may be allotted to the contractor for the erection of labour camps, either free of charge or on such terms and conditions that may be prescribed by the DFCCIL. All camp sites shall be maintained in clean and sanitary conditions by the contractor at his own cost.

59. (2) Compliance to rules for employment of labour: - The contractor(s) shall conform to all laws, by-laws rules and regulations for the time being in force pertaining to the employment of local or imported labour and shall take all necessary precautions to ensure and preserve the health and safety of all staff employed directly or through petty contractors or sub-contractors on the works.

59. (3) Preservation of peace: - The contractor shall take requisite precautions and use his best endeavours to prevent any riotous or unlawful behaviour by or amongst his workmen and other employed directly or through the petty contractors or sub-contractors on the works and for the preservation of peace and protection of the inhabitants and security of property in the neighbourhood of the works. In the event of the DFCCIL requiring the maintenance of a special Police Force at or in the vicinity of the site during the tenure of works, the expenses thereof shall be borne by the contractor and if paid by the DFCCIL shall be recoverable from the contractor.

59.(4) Sanitary arrangements:- The contractor shall obey all sanitary rules and carry out all sanitary measures that may from time to time be prescribed by the Railway Medical Authority and permit inspection of all sanitary arrangements at all times by the Engineer, the Engineer's Representative of the Medical staff of the DFCCIL. Should the contractor fail to make the adequate sanitary arrangements, these will be provided by the DFCCIL and the cost therefore recovered from the contractor.

59.(5) Outbreak of infectious disease:- The contractor shall remove from his camp such labour and their families as refuse protective inoculation and vaccination when called upon to do so by the Engineer or the Engineer's representative on the advice of the DFCCIL. Should cholera, plague or other infectious disease break out, the contractor shall burn the huts, beddings, clothes and other belongings of or used by the infected parties and promptly erect new huts on health sites as required by the engineer, failing which within the time specified in the Engineer's requisition, the work may be done by the DFCCIL and the cost therefore recovered from the contractor.

59. (6) Deleted

59.(7) Medical facilities at site: - The Contractor shall provide medical facilities at the site as may be prescribed by the Engineer on the advice of the DFCCIL in relation to the strength of the Contractor's resident staff and workmen.

59.(8) Use of intoxicants: - The sale of ardent spirits or other intoxicating beverages upon the work or in any of the buildings, encampments or tenements owned, occupied by or within the control of the contractor or any of his employees shall be forbidden and the Contractor shall exercise his influence and authority to the utmost extent to secure strict compliance with this condition.

59. (9) Non-employment of female labour: - The Contactor shall see that the employment of female labour on / in Cantonment areas, particularly in the neighbourhood of soldier's barracks, should be avoided as far as possible.

59.(10) Restrictions On The Employment Of Retired Engineers Of Railway/DFCCIL Services Within one Year Of Their Retirement : The Contractor shall not, if he is a retired Government Engineer of Gazetted rank, himself engage in or employ or associate a retired Government Engineer of Gazetted rank, who has not completed one year from the date of retirement, in connection with this contract in any manner whatsoever without obtaining prior permission of the President and if the Contractor is found to have contravened this provision it will constitute a breach of contract and administration will be entitled to terminate the contract and forfeit Earnest Money Deposits (EMD),Performance Guarantee (PG)and Security Deposits (SD) of that contract.

60. (1) Non-employment of labours below the age of 15:- the Contractor shall not employ children below the age of 15 as labourers directly or through petty contractors or subcontractors for the execution of work.

60.(2) Medical Certificate of fitness for labour: - It is agreed that the contractor shall not employ a person above 15 and below 19 years of age for the purpose of execution of work under the contract unless a medical certificate of fitness in the prescribed form (Performa at Form No.15) granted to him by a certifying surgeon certifying that he is fit to work as an adult is obtained and kept in the custody of the contractor or a person nominated by him in this behalf and the person carries with him, while at work; a token giving a reference to such certificate. It is further agreed that the responsibility for having the adolescent examined medically at the time of appointment or periodically till he attains the age of 19 years shall devolve entirely on the contractor and all the expenses to be incurred on this account shall be borne by him and no fee shall be charged from the adolescent or his parent for such medical examination.

60. (3) Period of validity of medical fitness certificate:- A certificate of fitness granted or renewed for the above said purposes shall be valid only for a period of one year at a time. The certifying surgeon shall revoke a certificate granted or renewed if in his opinion the holder of it is, no longer fit for work in the capacity stated therein. Where a certifying surgeon refuses to grant or renew a certificate or revoke a certificate, he shall, if so required by the person concerned, state his reasons in writing for doing so.

60.(4) Medical re-examination of labourer:- Where any official appointed in this behalf by the Ministry of labour is of the opinion that any person employed in connection with the execution of any work under this contract in the age group 15 to 19 years is without a certificate of fitness or is having a certificate of fitness but no longer fit to work in the capacity stated in the certificate, he may serve on the Contractor, or on the person

nominated by him in the regard, a notice requiring that such persons shall be examined by a certifying surgeon and such person shall not if the concerned official so directs, be employed or permitted to do any work under this contract unless he has been medically examined and certified that he has been granted a certificate of fitness or a fresh certificate of fitness, as the case may be.

EXPLANATIONS:-

(1) Only qualified medical practitioners can be appointed as "Certifying Surgeons" and the term "Qualified Medical Practitioners" means a person holding a qualification granted by an authority specified in the Schedule to the Indian Medical Degrees Act, 1916 (VII to 1916) or in the Schedule to the Indian Medical Council Act, 1933 (XXVII) of 1933.

(2) The Certifying surgeon may be a medical officer in the service of State or Municipal Corporation.

DETERMINATION OF CONTRACT

61.(1) Right of DFCCIL of determine the contract:- The DFCCIL shall be entitled to determine and terminate the contract at any time should, in the DFCCIL/Railway's opinion, the cessation of work becomes necessary owing to paucity of funds or from any other cause whatever, in which case the value of approved materials at site and of work done to date by the Contractor will be paid for in full at the rate specified in the contract. Notice in writing from the DFCCIL of such determination and the reasons therefore shall be conclusive evidence thereof.

61. (2) Payment on determination of contract: - Should the contract be determined under sub clause (1) of this clause and the Contractor claims payment for expenditure incurred by him in the expectation of completing the whole of the work, the Railways /DFCCIL shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction of the Engineer. The DFCCIL/Railway's decision on the necessity and propriety of such expenditure shall be final and conclusive.

61.(3) The contractor shall have no claim to any payment of compensation or otherwise, howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of determination of contract.

62. (1) Determination of contract owing to default of contractor: - If the Contractor should**:-**

(i) Becomes bankrupt or insolvent, or

(ii) Make an arrangement with of assignment in favour of his creditors, or agree to carry out the contract under a Committee of Inspection of his creditors, or

(iii) Being a Company or Corporation, go into liquidation (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or

(iv) Have an execution levied on his goods or property on the works, or

(v) Assign the contract or any part thereof otherwise than as provided in Clause 7 of these conditions, or

(vi) Abandon the contract, or

(vii) Persistently disregard the instructions of the Engineer, or contravene any provision of the contract, or

(viii) Fail to adhere to the agreed programme of work by a margin of 10% of the stipulated period, or

(ix) Fail to remove materials from the site or to pull down and replace work after receiving from the Engineer notice to the effect that the said materials or works have been condemned or rejected under clause 25 and 27 of these conditions, or

(x) Fail to take steps to employ competent or additional staff and labour as required under clause 26 of the conditions

(xi) Fail to afford the Engineer or Engineer's representative proper facilities for inspecting the work or any part thereof as required under clause 28 of the conditions, or

(xii) Promise, offer or give any bribe, commission, gift or advantage either himself or through his partner, agent or servant to any officer or employee of the DFCCIL or to any person on his or on their behalf in relation to the execution of this or any other contract with this DFCCIL.

(xiii) (A) At any time after the tender relating to the contract, has been signed and submitted by the Contractor, being a partnership firm admit as one of its partners or employee under it or being an incorporated company elect or nominate or allow to act as one of its directors or employee under it in any capacity whatsoever any retired engineer of the gazetted rank or any other retired gazetted officer working before his retirement, whether in the executive or administrative capacity, or whether holding any pensionable post or not, in the Railways/DFCCIL for the time being owned and administered by the President of India before the expiry of one year from the date of retirement from the said service of such Engineer or Officer unless such Engineer or Officer has obtained permission from the President of India or any officer duly authorized by him in this behalf to become a partner or a director or to take employment under the contract as the case may be, or

(xiii) (B) Fail to give at the time of submitting the said tender:-

(a) The correct information as to the date of retirement of such retired engineer or retried officer from the said service, or as to whether any such retired engineer or retired officer was under the employment of the Contractor at the time of submitting the said tender, or

(b) The correct information as to such engineers or officers obtaining permission to take employment under the contractor, or

(c) Being a partnership firm, the correct information as to, whether any of its partners was such a retired engineer or a retired officer, or

(d) Being in incorporated company, correct information as to whether any of its directors was such a retired engineer or a retired officer, or

(e) Being such a retired engineer or retried officer suppress and not disclose at the time of submitting the said tender the fact of his being such a retired engineer or a retired officer or make at the time of submitting the said tender a wrong statement in relation to his obtaining permission to take the contract or if the contractor be a partnership firm or an incorporated company to be a partner or director of such firm or company as the case may be or to seek employment under the contractor.

Then and in any of the said clause, the Engineer on behalf of the DFCCIL may serve the Contractor with a notice (Proforma at Form No.16) in writing to that effect and if the contractor does not within seven days after the delivery to him of such notice proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid of the entire satisfaction of the Engineer, the DFCCIL shall be entitled after giving 48 hours' notice (Proforma at Form No. 17) in writing under the hand of the Engineer to rescind the contract as a whole or in part or parts (as may be specified in such notice) and after expiry of 48 hours' notice, a final termination notice (Proforma at Form No. 18) should be issued and adopt the following courses:

To measure up or the whole or part of the work from which the contractor has been removed and get it completed by another contractor, the manner and method in which such work is completed shall be in the entire discretion of the Engineer whose decision shall be final.

62. (2) Right of DFCCIL after, rescission of contract owing to default of contractor:

In the event of any or several of the courses, referred to in sub-clause (1) of the clause, being adopted.

(a) The contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any commitments or made any advances on account of or with a view to the execution of the works or the performance of the contract and contractor shall not be entitled to recover or be paid any sum for any work thereto for actually performed under the contract unless and until the Engineer shall have certified the performance of such work and the value payable in respect thereof and the contractor shall only be entitled to be paid the value so certified.

(b) The Engineer or the Engineer's representative shall be entitled to take possession of any materials, tools, implements, machinery and buildings on the works or on the property on which these are being or ought to have been executed, and to retain and employ the same in the further execution of the works or any part thereof until the completion of the works without the contractor being entitled to any compensation for the use and employment thereof or for wear and tear or destruction thereof.

(c) The Engineer shall as soon as may be practicable after removal of the contractor fix and determine ex-parte or by or after reference to the parties or after such investigation or enquiries as he may consider fit to make or institute and shall certify what amount(if any) had at the time of rescission of the contract been reasonably earned by or would reasonably accrue to the contractor in respect of the work then actually done by him under the contract and what was the value of any unused, or partially used materials, any constructional plan and any temporary works upon the site. The legitimate amount due to the contractor after making necessary deductions and certified by the Engineer should be released expeditiously.

STATEMENT OF DISPUTES - INDIAN RAILWAY ARBITRATION RULES

63.0 Matters finally determined by the DFCCIL – All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during the progress of the work or after its completion and whether before or after the determination of the contract, shall be referred by the contractor to the Director(PP) /General Manager/GM/Co, DFCCIL and the Director(PP)/General Manager/GM/Co. DFCCIL shall within 120 days after receipt of the contractor's representation make and notify decisions on all matters referred to by the contractor in writing provided that matter for which provision has been made in clauses 8, 18, 22.(5), 39, 43.(2), 45.(a), 55, 55A.(5), 57, 57A, 61.(1), 61.(2) and 62.(1) to (xiii)(B) of General Conditions of contract or in any special clause of the conditions of the contract shall be deemed as 'excepted matters' (matters not arbitrable) and decisions of the DFCCIL authority, thereon shall be final and binding on the contractor; provided further that 'excepted matters' shall stand specifically excluded from the purview of the arbitration clause.

64. (1) Demand for Arbitration:-

64. (1)(i) In the event of any dispute or difference between the parties hereto as to the construction or operation of this contract, or the respective rights and liabilities of the parties on any matter in question, dispute or difference on any account or as to the withholding by the DFCCIL of any certificate to which the contractor may claim to be entitled to, or if the DFCCIL fails to make a decision within 120 days, then and in any such case, but except in any of the 'excepted matters' referred to in clause 63 of these conditions, the contractor, after 120 days but within 180 days of his presenting his final claim on disputed matters shall demand in writing that the dispute or difference be referred to arbitration.

64.(1) (ii) The demand for arbitration shall specify the matters which are in question, or subject of the dispute or difference as also the amount of claim item wise. Only such dispute or difference, in respect of which the demand has been made, together with counter claims or set off, given by the DFCCIL, shall be referred to arbitration and other matters shall not be included in the reference.

64. (1) (iii)

(a) The arbitration proceedings shall be assumed to have commenced from the day, a written and valid demand for arbitration is received by the DFCCIL.

(b) The claimant shall submit his claim stating the facts supporting the claims along with all the relevant documents and the relief or remedy sought against each claim within a period of 30 days from the date of appointment of the Arbitral Tribunal.

(c) The DFCCIL shall submit its defence statement and counter claim(s), if any, within a period of 60 days of receipt of copy of claims from Tribunal thereafter, unless otherwise extension has been granted by Tribunal.

(d) The place of arbitration would be New Delhi

64.(1)(iv) No new claim shall be added during proceedings by either party. However, a party may amend or supplement the original claim or defence thereof during the course of arbitration proceedings subject to acceptance by Tribunal having due regard to the delay in making it.

64.(1)(v) – If the contractor(s) does/do not prefer his/their specific and final claims in writing, within a period of 90 days of receiving the intimation from the Railways/DFCCIL that the final bill is ready for payment, he/they will be deemed to have waived his/their claim(s) and the Railways/DFCCIL shall be discharged and released of all liabilities under the contract in respect of these claims.

64.(2) Obligation During Pendency of Arbitration:– Work under the contract shall, unless otherwise directed by the Engineer, continue during the arbitration proceedings, and no payment due or payable by the DFCCIL shall be withheld on account of such proceedings, provided, however, it shall be open for Arbitral Tribunal to consider and decide whether or not such work should continue during arbitration proceedings.

64. (3) Appointment of arbitrator

64.(3)(a)(i) In cases where the total value of all claims in question added together does not exceed Rs.25,00,000 (Rupees twenty five lakhs only), the Arbitral tribunal shall consist of a sole arbitrator nominated by the MD/DFCCIL The sole arbitrator shall be appointed within 60 days from the day when a written and valid demand for arbitrator is received by MD/DFCCIL .

64. (3) (a) (ii) In cases not covered by the clause 64(3) (a) (i), the Arbitral Tribunal shall consist of a Panel of three officials, as the arbitrators. For this purpose, the DFCCIL will send a panel of more than 3 names of DFCCIL officers which may also include the name(s) of Officer(s) empanelled to work as Arbitrator to the contractor within 60 days from the day when a written and valid demand for arbitration is received by the MD/DFCCIL. Contractor will be asked to suggest to MD/DFCCIL at least 2 names out of the panel for appointment as contractor's nominee within 30 days from the date of dispatch of the request by Railway /DFCCIL. The MD/DFCCIL shall appoint at least one out of them as the contractor's nominee and will, also simultaneously appoint the balance number of arbitrators either from the panel or from outside the panel, duly indicating the 'presiding arbitrator' from amongst the 3 arbitrators so appointed. MD/DFCCIL shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of contractor's nominees. While nominating the arbitrators it will be necessary to ensure that one of them is from the Accounts department. An officer of selection grade of accounts department shall be considered of equal status to the officers in SA grade of other department of DFCCIL for the purpose of appointment of arbitrator.

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

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

64. (3) (a) (v) While appointing arbitrator(s) under sub-clause (i), (ii) & (iii) above, due care shall be taken that he/they is/are not the one/those who had an opportunity to deal with the matters to which the contract relates or who in the course of his/their duties as DFCCIL servant(s) expressed views on all or any of the matters under dispute or differences. The proceedings of the arbitral Tribunal or the award made by such Tribunal will, however, not be invalid merely for the reason that one or more arbitrator had, in the course of his service, opportunity to deal with the matters to which the contract relates or who in the course of his/their duties expressed views on all or any of the matters under dispute.

64. (3) (b) (i) the arbitral award shall state item wise, the sum and reasons upon which it is based. The analysis and reasons shall be detailed enough so that the award could be inferred there from.

64.(3)(b)(ii) A party may apply for corrections of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award of a tribunal and interpretation of a specific point of award to tribunal within 60 days of receipt of the award.

64.(3)(b)(iii) A party may apply to tribunal within 60 days of receipt of award to make an additional award as to claims presented in the arbitral proceedings but omitted from the arbitral award.

64. (4) In case of the Tribunal, comprising of three Members, any ruling on award shall be made by a majority of Members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.

64. (5) where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period till the date on which the award is made.

64. (6) the cost of arbitration shall be borne by the respective parties. The cost shall inter-alia include fee of the arbitrator(s), as per the rates fixed by the DFCCIL from time to time and the fee shall be borne equally by both the parties.

64(7) Subject to the provisions of the aforesaid Arbitration and Conciliation Act 1996 and the rules there under and any statutory modifications thereof shall apply to the arbitration proceedings under this clause.

JOINT VENTURE (JV) FIRMS IN WORKS TENDERS

65.0 **Participation of Joint Venture (JV) Firms In Works Tender:** This Clause shall be applicable for works tenders of value as approved and communicated by Railway Board /DFCCIL from time to time.

65.1 Separate identity / name shall be given to the Joint Venture Firm.

65.2 Number of members in a JV Firm shall not be more than three.

65.3 A member of JV Firm shall not be permitted to participate either in individual capacity or as a member of another JV Firm in the same tender.

65.4 The tender form shall be purchased and submitted only in the name of the JV Firm and not in the name of any constituent member.

65.5 Normally earnest money deposit (EMD) shall be submitted only in the name of Employer "Dedicated Freight Corridor Corporation of India Limited" A/C JV Firm and not in the name of constituent member. However, in exceptional cases EMD in the name of Employer "Dedicated Freight Corridor Corporation of India Limited" A/C JV Firm and not in the name of Lead Member can be accepted subject to written confirmation from JV members to the effect, that EMD submitted by the Lead Member may be deemed as EMD submitted by JV Firm.

65.6 One of the members of the JV Firm shall be its Lead Member who shall have a majority (at least 51%) share of interest in the JV Firm and also, must have satisfactorily completed in the last three previous financial years and the current financial year upto the date of opening of the tender, one similar single work for a minimum value of 35% of advertised tender value and as defined in technical eligibility criteria. The other members shall have a share of not less than 20% each in case of JV Firms with upto three members. In case of JV Firm with foreign member(s), the Lead Member has to be an Indian Firm with a minimum share of 51%.

65.7 A copy of Memorandum of Understanding (MoU) executed by the JV members shall be submitted by the JV Firm along with the tender. The complete details of the members of the JV Firm, their share and responsibility in the JV Firm etc. particularly with reference to financial, technical and other obligations shall be furnished in the MOU. (The MOU format for this purpose is enclosed along with the tender, Form No. 9).

65.8 Once the tender is submitted, the MoU shall not be modified / altered / terminated during the validity of the tender. In case the tenderer fails to observe/comply with this stipulation, the full Earnest Money Deposit (EMD) shall be liable to be forfeited.

65.9 Approval for change of constitution of JV Firm shall be at the sole discretion of the Employer (Railways /DFCCIL). The constitution of the JV Firm shall not be allowed to be modified after submission of the tender bid by the JV Firm, except when modification becomes inevitable due to succession laws etc. and in any case the minimum eligibility criteria should not get vitiated. However, the Lead Member shall continue to be the Lead Member of the JV Firm. Failure to observe this requirement would render the offer invalid.

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

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

65.12 On issue of LOA (Letter Of Acceptance), an agreement among the members of the JV Firm (to whom the work has been awarded) shall be executed and got registered before the Registrar of the Companies under Companies Act or before the Registrar/Sub-Registrar under the Registration Act, 1908. This JV Agreement shall be submitted by the JV Firm to the Railways / DFCCIL before signing the contract agreement for the work. In case the tenderer fails to observe/comply with this stipulation, the full Earnest Money Deposit (EMD) shall be forfeited and other penal actions due shall be taken against partners of the JV and the JV. This Joint Venture Agreement shall have, inter-alia, following Clauses:

65.12.1 Joint And Several Liability - Members of the JV Firm to which the contract is awarded, shall be jointly and severally liable to the Employer (Railways /DFCCIL) for execution of the project in accordance with General and Special Conditions of Contract. The JV members shall also be liable jointly and severally for the loss, damages caused to the Railways / DFCCIL during the course of execution of the contract or due to non-execution of the contract or part thereof.

65.12.2 Duration of the Joint Venture Agreement - It shall be valid during the entire currency of the contract including the period of extension, if any and the defect liability period after the work is completed.

65.12.3 Governing Laws - The Joint Venture Agreement shall in all respect be governed by and interpreted in accordance with Indian Laws.

65.13 Authorized Member - Joint Venture members shall authorize one of the members on behalf of the Joint Venture 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/correspondences with respect to the contract would be sent only to this authorized member of the JV Firm.

65.14 No member of the Joint Venture Firm 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 (Railways /DFCCIL) in respect of the said tender/contract.

65.15 Documents to be enclosed by the JV Firm along with the tender:

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

(a) Notary certified copy of the Partnership Deed,

(b) Consent of all the partners to enter into the Joint Venture Agreement on a stamp paper of appropriate value (in original).
(c) Power of Attorney (duly registered as per prevailing law) in favour of one of the partners of the partnership firm to sign the JV Agreement on behalf of the partnership firm and create liability against the firm.

65.15.2 In case one or more members is/are Proprietary Firm or HUF, the following documents shall be enclosed:

Affidavit on Stamp Paper of appropriate value declaring that his/her Concern is a Proprietary Concern and he/she is sole proprietor of the Concern OR he/she is in position of "KARTA" of Hindu Undivided Family (HUF) and he/she has the authority, power and consent given by other partners to act on behalf of HUF.

65.15.3 In case one or more members is/are limited companies, the following documents shall be submitted:

(a) Notary certified copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement, authorizing MD or one of the Directors or Managers of the Company to sign JV Agreement, such other documents required to be signed on behalf of the Company and enter into liability against the company and/or do any other act on behalf of the company.
(b) Copy of Memorandum and Articles of Association of the Company.
(c) Power of Attorney (duly registered as per prevailing law) by the Company authorizing the person to do/act mentioned in the para (a) above.

65.15.4 Deleted

65.16 Credentials & Qualifying Criteria: Technical and financial eligibility of the JV Firm shall be adjudged based on satisfactory fulfillment of the following criteria :

65.16.1 Technical Eligibility Criteria: As defined in Preamble and General Instructions to tenderers.

65.16.2 Financial Eligibility Criteria: As defined in Preamble and General Instructions to tenderers.

66. MSME

66.1 Public Procurement Policy for Micro and Small Enterprises (MSEs) is being followed. Participating MSE shall enclose with their offers the proof of their being MSE registered with any of the agencies mentioned in the notification of Ministry of MSME indicated below:

(i) District Industries Centers.
(ii) Khadi and Village Industries Commission.
(iii) Khadi and Village Industries Board.
(iv) Coir Board.
(v) National Small Industries Corporation.
(vi) Directorate of Handicraft and Handloom.
(vii) Any other body specified by Ministry of MSME.

The MSEs must also indicate the terminal validity date of their registration. MSEs owned by Scheduled Castes or Scheduled Tribes (SC/ST) Entrepreneurs may be indicated and proof of same may be enclosed.

SPECIAL CONDITIONS OF CONTRACT

PART - I
CHAPTER V

SPECIAL CONDITIONS OF CONTRACT

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 15 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

(a) All materials used in the work shall be of the best quality as per codes / Specifications

(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.

1.5.6 Expenses of Employer' Representative – All the expenses of Engineer's representative 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 Deleted

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 licence, 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 (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.

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 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 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 6 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 six month 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/Co. 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 periods of guarantee , provided in any case that the Contractor has complied fully with his obligations under clause 1.5.15, 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 Mobilization Advance:- (Applicable for Advertised tender of value more than Rs. 25.00 crore)

(a) The Tenderer/Contractor may be granted a recoverable interest bearing mobilisation advance upto 10% of the contract value provided mobilisation advance is admissible as per the tender conditions and he specifically applies for it while tendering. If the tenderer fails to apply specifically for Mobilisation Advance while giving his offer at the tendering stage in case where grant of Mobilisation Advance is permissible, no subsequent requests from him for grant of this advance will be entertained. The rate of interest is 4.5% per annum above the Base Rate of State Bank of India, as effective on the date of approval of payment of Mobilisation Advance by the competent authority.

(b) The advance will be granted in two instalments viz., 5% of the contract value on signing of the contract agreement and the balance 5% on Mobilisation of site establishment, setting up offices, bringing in equipment and actual commencing of work. Each instalment will be released on submission of a security in a form acceptable to the DFCCIL (similar to Performance Guarantee notified in Clause 16.(4) (b) of General conditions of contract for the amount of the atleast 110% of the value of the sanctioned advance amount covering instalment together with interest charges calculated upto the end of the contract period. The tenderer who seeks Mobilisation Advance should be specific about the course of action proposed to be followed in producing the security to the satisfaction of the Railway. Each security should be atleast not less than one lakh rupees. These securities shall be returned as and when the value of the advance plus interest is recovered from the running bill.

(c) The recovery of the advance and interest thereon will be made through the every on account bills, pro-rata, commencing from the time the value of the work executed under the contract reaches 15% of the contract value and completed when the value of the work executed under the contract reaches 85% of the contract value or assessed value whichever is less.

(d) The Mobilisation Advance granted shall be returned back to the DFCCIL in case the work is not completed in the original contract completion period.

(e) The Bank Guarantee shall be from a Nationalised Bank in India or State Bank of India, in a form acceptable to DFCCIL. (Tender Form No. 19 placed at Part IV of the tender documents).

Note: The instruments as listed under Performance Guarantee vide Clause 16 (4) (b) of General Conditions of contract will also be acceptable for Guarantee in case of Mobilisation Advance.

1.5.21 Arbitration:- Refer to clause 63 of GCC.

1.5.22 GST

GST as applicable from time to time on taxable value of each running account bill shall be paid by Contractor.

1.5.23 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 including GST tax. **GST will be paid by Contractor as per prevailing rate.**

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.

1.5.24 STATUTORY INCREASE IN DUTIES, TAXES ETC

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 1.7 above.

Further **DFCCIL** shall not honour any claim arising out of any increase in any of the prevailing statutory duties, taxes, levies, octroi, etc **including GST**. 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.

1.5.25 EXCISE DUTY OR ANY OTHER TAXES/DUTIES:

The contractor shall bear full taxes /duties including **GST 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.

1.5.26 ROAD TAX CHARGES:

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.

1.5.27 FOREIGN EXCHANGE REQUIREMENTS:

Any demand of foreign exchange for importing of equipment's and materials shall not be accepted.

1.5.28 ANTI PROFITEERING CLAUSE.

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.

1.5.29 INTEGRITY PACT:-

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. 20 for signature of bidder as acceptance, as and when Independent External monitor is appointed.

1.5.30 Experience to carry out Electrical Work:- Either tenderer himself should have executed work of electrical wiring of multi-story buildings with lighting, have executed AC/HVAC work, have provided lifts and firefighting arrangement in a multi-story building completed in last three financial years and current financial year for schedule F,G,H,I separately for minimum value of 35 % of the each similar nature of work for the schedule given below:-

OR

Main tenderer will associate his/their associated electrical contractor/contractors to carry out the electrical work given in tender schedule F (wiring work), G (Firefighting work), H (AC/HVAC work), I (lift work). Main tenderer can associate different electrical sub-contractors to carry out the electrical works of schedule F, G, H & I having the requisite experience of similar nature of work of each schedule separately.

Main Tenderer or associated electrical contractor/contractors should have completed at least one similar nature of work given for each schedule as given below at (a), (b), (c) & (d) in last three financial years and current financial year, for a minimum value of 35 % of the each similar nature of work as under, for different schedules as in tender schedule separately:-

(a) Should have executed electrical wiring of multi stored buildings with lighting. **(Any work related HT & LT installation)** for Schedule "F"
(b) Should have executed the firefighting work. **(Any work of Fire Fighting work)** for schedule "G".
(c) Should have executed the work of AC/HVAC **(Any work of AC/HVAC)** for schedule "H".
(d) Should have executed the work of installation * commissioning of lifts/Escalators. **(Any work of Lifts/Escalators.)** for Schedule "I"
(e) The Main/associated electrical contractor for schedule should have received contractual payment at least 150 % of Electrical schedules in last three financial years and current financial year.

(f) If the tenderer engages associate electrical contractor, he /they is/are required to submit legally enforceable agreement duly signed with the associated electrical contractor, before starting work of particular schedule in the form of MOU as per proforma-I of tender document. MOU must be on the non-judicial stamp paper duly notarized of Rs. 100/- or as per the stamp Act of the concerned State.

(g) 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 at later stage. However in case of any force majeure, competent authority may permit another eligible associate electrical contractor.

(h) Electrical items will be used as per the list of standard make for power supply and General Service items/Equipment as enclosed with tender document.

PROFORMA MOU

CERTIFICATE FOR ASSOCIATE ELECTRICAL CONTRACTOR 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 for work of schedule……. 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) Financial credentials, for 150% of contractual payment received……..
(Certificates to be attached)
(vi) Validity on registration……
(viii) Licensed No. with validity……..

CONSENT LETTER

I hereby 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 DFCCIL specifications and additional conditions of the contract. I will also engage suitable Engineers for the work as per condition of the contract. I further certify that above particulars pertaining to me are correct.

Signature of Main Contractor Signature of Associate Electrical Contractor

TECHNICAL SPECIFICATION

PART-II
TECHNICAL SPECIFICATIONS

For technical specifications, refer 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.

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 Supply of cement to various specifications as required for various items under different schedules will be paid under the items in Schedule.

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: 12174:1987or 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 Central Railway Unified Standard Schedule of Rates (Works and Materials), Engineering Department - 2010 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 of by the Contractor himself.

2.1.7.7 Cement not more than 03 months old from the date of manufacture shall be used. It shall be transported and stacked by the contractor in his godown at his own cost with all safety against loss/ theft by providing necessary security/watchman. The DFCCIL shall entertain no extra cost.

2.1.7.8 Contractor has to submit original purchase invoice/ Challans for the proof of purchase.

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 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, GI binding wire, used in concrete construction shall be as per 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 minimum 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 D/550D) 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 accountable 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 bears 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 Deleted

2.2.6.2 Deleted

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 go downs / 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 26.1.2.7of 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 pounding 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 is 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-20	M-25	M-30

2.2.13.3 Cementitious Material Content:- Maximum Cementitious Material Content shall be limited to 500kg/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	240	M30	300
Severe	M30	250	M35	350
Extreme	M35	300	M40	400

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 manufacturer's 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:-

tripping 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.

Tolerances for Finished Concrete Bridge Structure		
S 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

2.2.26.3 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.

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 shall be 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 DELETED

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 material specifications as required for the work along with other concerned specifications.
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 structural steel at his cost. No extra payment will be made for conducting such tests and the agree mental rate is inclusive of above testing charges.

2.4.3 PROCUREMENT OF STEEL:

2.4.3.1 S**teel 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:

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 ADVANCE PAYAMENTS FOR STRUCTURAL STEEL:

No Advance Payment shall be made. 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 Deleted

Technical Specification Electrical Work (Schedule-F)

Sr. Item No.	Specification of Item
A	**Electrification**
1	Wiring LP/TP/FP/Ex-Fan: Supply of material and wiring of LP/TP/FP/Ex-Fan point with 2.5sqmm PVC single core multi-stranded copper wire insulated concealed in stone/brick masonry wall in 19/20mm PVC conduit with 1.5sqmm PVC copper wire for earth wire and one-way piano switch modular type 5/6A and good quality ceiling rose.
2	5/6A Socket: Supply and fixing plug 5-pin 230V with switch, existing board and wiring with 2.5 sqmm PVC CU cable as per DFC Requirement
3	POWER PLUG : 15/16A Socket: Supply and fixing plug 5-pin 230V with switch, existing board and wiring with 2.5 sqmm PVC CU cable as per DFC Requirement
4	Supply and providing modular type electronic fan regulator 5step type on existing board and connection as per DFCCIL requirement.
5	Supply and fixing 12 module modular plate for fixing of switches and sheet metal box of good quality concealed fixing of MS/PVC as per site requirement.
6	Supply and fixing 8 module modular plate for fixing of switches and sheet metal box of good quality concealed fixing of MS/PVC as per site requirement .
7	Supply and fixing 4module modular plate for fixing of switches and sheet metal box of good quality concealed fixing of MS/PVC as per site requirement .
8	Wiring of sub-main with single core insulated, multi-stranded 2x2.5sqmmPVC CU cable in PVC conduit ISI mark 19/20 or 25mm concealed in stone/ bricks masonry wall separate or same conduit & 1.5sqmm PVC CU cable insulated multi-stranded for earth wire. For separate conduit the size shall be 19/20mm 1.5mm thick and for same conduit the size shall be minimum 25 mm dia.
9	Wiring of sub-main with single core insulated, multi-stranded 2x4sqmm PVC CU cable in PVC conduit ISI mark 19/20 or 25mm concealed in stone/ bricks masonry wall separate or same conduit & 1.5sqmm PVC CU cable insulated multi-stranded for earth wire. For separate conduit the size shall be 19/20mm 1.5mm thick and for same conduit the size shall be minimum 25 mm dia.
10	Wiring of sub-main with single core insulated, multi-stranded 2x6sqmm PVC CU cable in PVC conduit ISI mark 19/20 or 25mm concealed in stone/ bricks masonry wall separate or same conduit & 2.5sqmm PVC CU cable insulated multi-stranded for earth wire. For separate conduit the size shall be 19/20mm 1.5mm thick and for same conduit the size shall be minimum 25 mm dia.
11	Computer Board:- Supply and fixing computer point consisting 4 Nos. 5/6A switch, 5/6 pin socket 230V or above (modular) and connection complete in all respect as per DFCCIL Requirement

12	Supply and fixing metal clad plug socket 20A single phase with 32A MCB 10kA including fixing and sheet metal enclosure box with one 20A plug top (Ray roll type) to be supplied with board.
13	Supply and fixing modular type exhaust fan 225/250mm heavy duty including air curtain and making hole in wall if not exist including repairing the same properly with cement-sand or concrete and connection complete in all respect.
14	Supply, fixing and connecting wall mounted Bracket Fan 400mm sweep with 3 speed regulator & fixing with fastener, and nut bolts in wall as per site requirement and connection with cord flexible and complete in all respect.
15	Supply and providing Modular LED foot light in square/rectangular SS body complete with 1 No. Yellow1- watt LED and step down transformer as required complete in all respect.
16	Supply and fixing of 7W LED Tilt able Mirror light in Aluminium body with glass cover in sand grey finishing 6000k, Approx. dimension 320x78x28mm or above, catalogue no. LLT 004 - Make Ludlum or similar complete in all respect as per DFCCIL Requirement.
17	Supply and fixing of picture light track mounting luminaire with LED lamp complete in all respect as per DFCCIL requirement.
18	Supply & fixing of Recess mounted 36W (2feetx2feet) LED Luminaire comprising CRCA sheet steel housing with white powder coating complete with Electronic Driver and with small optical window added with high Translucent frosted diffuser. Having System wattage of 36W and System lumen efficacy of 100 Lumen/Watt complete with Electronic Driver. Operating voltage range 140 to 270 volt, THD<10%, Power factor>0.95, surge protection 2.5 KV and CRI>80. Cat No. LCTLRN-36 CDL of Crompton make or similar complete in all respect as per DFCCIL Requirement
19	OCTAGONAL POLE- Supply and fixing 5meter long hot dip galvanized octagonal pole with foundation and base plate size 200x200x12mm as per standard specifications with fixing of 1 no. arms 1000mm for the fittings as per requirement including smart pack junction box with 6A MCB and terminals and connection.
20	Supply and fixing of decorative wall bracket in SS finish & frosted glass complete with holder and lamp. Complete in all respects as per DFCCIL requirement.
21	Supply of energy efficient LED based streetlight fitting with pressure Dia cast Aluminium housing, Minimum four LEDs with driver and suitable fixing arrangement in existing pipe IP-65 for outdoor application, operating voltage (140-270)V, minimum, 2000 Lumens, system efficacy 100 1m/W (min) , colour Temperature 5700^0 K, CRI>65 and warranty of 60 months from the date of commissioning or 72 months from date of supply, whichever is earlier.
22	Supply, installation, testing & commissioning of water coolers 150 ltrs capacity. The contractor will construct the required masonry foundation and pipe connection from water point available near the water cooler as per satisfaction of site incharge.
23	Supply, installation testing and commissioning of decorative ceiling fan having 1200mm/1400 mm Energy efficient as per DFCCIL requirement

24	Supply and fixing of 2W, 12V LED wall lamp with flexible pipe & ON/Off switch on base which is made of stainless steel and head made of brass with stainless steel finish complete with driver as per DFCCIL Requirement.
25	Supply, fixing, testing & commissioning of LED sleek surface mounted round down lighter 18W make-Bajaj, CG, HPL, Havells or similar and complete in all respect as per DFCCIL Requirement
26	Supply and fixing of (Modal No. Crompton LDLL20-CDL-20 Watt similar) 18/20 LED tube light fitting, four feet with its driver and enclosure for in-door application as per DFCCIL requirement
27	Supply, installation and connection of call bell 220/230 V AC as per DFCCIL Requirement.
28	Supply, installation testing & commissioning of LED garden light 12 watt (warm white) syska model no. SSK-3005 or similar complete in all respect as per DFCCIL Requirement.
29	Supply, fixing testing & commissioning of astronomical timer multifunctional digital Legrand make catalogue No. 412657 or similar.
30	Supply and fixing of energy efficient 70-80W LED floodlight Luminaries comprising die cast aluminum housing with toughened glass, complete with electronic driver, luminaries has the system efficacy of 100 lumen/watt, complete in all respect as per DFCCIL requirement
31	Supply, install, test and commissioning of outdoor type LED based projector flood light for façade lighting with IP-65 version in 40 watt as per DFCCIL Requirement.
32	Supply of Mono-Block energy efficient pump set 10HP, 3-phase , 415V AC 50 Hz suction x deliver size 65x50mm, head 52 meter or above , rpm 2900 or above, with all accessories as per DFCCIL Requirement.
33	INSTALLATION:- Complete installation of submersible pump set in open well/bore well at site shall be done by contractor as per instruction of Railway Engineer at site including fixing of GI pipe 50mm dia B class with flanges as per ISI239 or latest. The supporting and holding assembly clams on top the well/bore to hold complete pump and pipes shall be minimum 8mm thick 2 Nos. The bolts shall be high tensile steel. Laying of flat cable including cable clips (min. Two clips per pipe) to be provided by the contractor. Necessary flanges with rubber packing along with welding of flanges at pipe joint shall be done by contractor. The work of delivery line from pump out let to delivery valve on top shall be provided by contractor as per requirement. After execution of work the bore head shall be sealed with suitable MS covering with locking arrangements.
34	AUTOMATIC CONTROL PANEL:- Floor mounted panel board fully automatic air break star delta starter suitable to 10HP pump motor set offered with over load and under voltage protection relay. All the contractor of starter shall be of min 32A with O/L relay setting of 0.6 times, the actual load current of pump motor and O/L shall be suitable for contractor mounting type. The starter confirms to relevant IS and complete for automatic operation of pump and shall be provided with. a) One single phasing preventer of suitable for pump motor b) One ammeter of 95x95mm size

	c) One voltmeter 0-500v with selector switching for measuring different phase voltage (size 95x95mm) d) Indication lamp for start/run position of pump e) MCB triple poles of suitable capacity or DFC Requirement f) Water level guard for run protection with probe and connecting cable for WLC in bore well g) Electronic hours meter seven digits 5+2 decimal. h) Electronic time switch for automatic operation of pump i) 2 Nos. earthing terminals of controls panel at suitable location j) All the components/starter/relay/contractor etc shall be confirm to relevant ISS k) The control panel shall be dust tight vermin proof of made out of sheet metal (18swg) suitable for floor mounting & lockable type with provision of louvers for heat dissipation. l) The automatic control panel shall have one switch for selecting manual and automatic control. m) Switching on & off of pump shall be through electronic time switch. n) The panel shall be complete with wiring with copper PVC cable 6mmsq for load wires of pump including connections and provide with 2 Nos earthing terminals. o) Size of control panel (70x40x25cms or above) and fixing of panel as per DFC requirement. The panel shall be painted with one coat of red oxide and two coats of enamel paint.
35	Supply fabrication fixing and installation of MS sheet steel enclosure free standing outdoor type with heat dissipation sides 2 feet above ground level for control panel and accessories of 16swg sheet size 120x70x60cms or above with painting and locking arrangement and foundation with installation of automatic control panel inside the box.
36	Supply and fixing of energy efficient 5 star Electric storage water (Geyser) capacity 15 Ltr. Vertical element capacity.
B	**Power distribution arrangement**
1	Supply, installation, testing & commissioning of VTPN 12 way MCCB 160A 25KA, 4 pole adjustable type, IP 43 complete in all respect as per DFCCIL requirement.
2	Supply and fixing MCB 63A four poles 10KA complete in all respect as per DFCCIL Requirement
3	Distribution Board 32A SPN 8OG: supply, fixing, testing & commissioning of distribution board single-phase and neutral with 32A DP MCB incoming and 8 Nos outgoing 6A-16A MCB single pole or as per site requirement
4	RCBO; Supply, fixing, testing and commissioning of RCBO Confirming to IEC 61009 or latest, sensitivity 30mA with connections capacity 63A, , 4-pole, 50Hz AC on separate main board as per site requirement. The RCBO to be connected in the Separate board as per requirement by making proper connection in the main board and fixing the RCBO. Any alteration in the wiring of main board if required is to be done by the contractor. The features of RCBO should have inclusive of following features: (a) Isolation with positive break

	indication. (b) Immune to nuisance tripping due to transit over voltage (Lighting, switching surges) (c) Trip indication.
5	DISTRIBUTION BOARD 63A: Supply fixing testing and commissioning of distribution board double door 3 phase and neutral concealed in wall with 63A four pole. 10KA incoming MCB and 12Nos outgoing MCB 6-32A single, as per site requirement pole with front cover looking arrangement, 4 MCB per phase as required by DFCCIL.
6	RCBO; Supply, fixing, testing and commissioning of RCBO Double pole. Confirming to IEC 61009 or latest, sensitivity 30mA with connections capacity 25A, 230V or above, 50Hz AC on existing/ separate main board as per site requirement. The RCBO to be connected in the existing/Separate board as per requirement by making proper connection in the main board and fixing the RCBO. Any alteration in the wiring of main board if required is to be done by the contractor. The features of RCBO should have inclusive of following features: (a) Isolation with positive break indication. (b) Immune to nuisance tripping due to transit over voltage (Lighting, switching surges) (c) Trip indication.
7	Supply, laying & commissioning of IS mark FRLS unsheathed insulated multistranded single core copper conductor eable in existing metal/PVC conduit pipe, its accessories, metal box recessed in wall etc of size 10sqmm.
8	Supply and fixing of 50mm MS conduit with it all accessories, complete in all respect as per DFCCIL requirement.
C	**Power supply arrangement**
1	Technical specification of 11KV SF6 metal enclosed, outdoor ring main (RMU) consisting of 4 VCB consisting of 2 incomers and 2 outgoing. 1.1 Scope:- Supply, installation, testing and commissioning of 11kV, 630Amp. 21kA. outdoor (with IP54 extensible 4-way SF6 gas insulated, floor mounted with copper bus bar Compact Distribution board consisting VCB as incoming 2 Nos outgoing VCB as outgoing. The extensible bushing should be at the lop of RMU bolted connection for ease of coupling. No plug-in type bushings are acceptable. All live parts, bus bars. VCB be enclosed a single tank (Minimum 5 VCB in a single tank) in robotically welded 3+/-0.5mm thick non-ferr. Non-magnetic 304 grade Stainless steel tank filled with SF6 at 1.4 bar with IP class IP 67, leak rate less than and tested for Internal arc 20kA/l-sec as per latest IEC 62271-200. The Compact Switchgear should be degree of protection such that the main enclosure door should cover complete front part including from copper cable covers. The earthingbusbar should be of copper. The earthingbusbar shall be provided in each compartment and throughout the length of Switchgear. Ring Main unit shall be internal arc proof and test totally safe for human beings. The release of gas to be from the top of the unit, so that even if the (operating the unit with the cover open; the release will be at the top. The release in no case should be from a or bottom of the unit, as the same is unsafe for the

operating personnel/pedestrian or general public RMU compliant to Internal Arc Classification (1AC) AFLR 21kA/l second. The unit shall include the following necessary standard fitting required at site all as specified and directed by E1C:-

This RMU should be complete with all components necessary for its effective and trouble free operation also associated equipment etc. such components should be deemed to be within the scope of supplier's supply.

The RMU should be fixed type SF-6 insulated with Vacuum circuit breakers with O/C & E/F relay protection of the transformer. It should be maintenance free equipment, having stainless steel robotically IP67 enclosure. Outdoor enclosure should be IP54.

STANDARDS AND REFERENCE DOCUMENTS

i) *Codes and Standards:* The RING MAIN UNIT (RMU) / COMPACT SWITCHGEAR (CSG) designed, manufactured and tested to the latest version of:

1.2 IEC 60694 Common specifications for high-voltage switchgear and control gear standards.

IEC 62271-200 : A.C metal-enclosed switchgear and control gear for rated voltages above IKV and including 72KV and the IEC Codes herein referred.

IEC 60129/ IEC 62271-102: Alternating current disconnections (isolators) and earthing switches

1.3 IEC 60529: Classification of degrees of protection provided by enclosures

IEC 60265 High-voltage switches-Part I: Switches for rated voltages above 1 kV and less than 52kv

IEC 60056: Circuit breakers

IEC 60420 High-voltage alternating current switch-fuse combinations

IEC 60185 Current transformers

IEC 60186 Voltage transformers IEC 60255 Electrical relays

Any other codes recognized in the country of origin of equipment might be considered provided fully comply with IEC & Indian standards.

ii) The design of the switchgear should be based on safety to personnel and equipment during operation maintenance, reliability of service, ease of maintenance mechanical protection of equipment interchangeability of equipment and ready addition of future loads.

RMU of the package sub-station should have following configuration:-

i) 11kv SF6 outdoor ring main unit (RMU), comprising of 630A load break switches, and fixed type 630A vacuum circuit breakers with (3 O/C & IE/F) relays, 1 No. metering module and Aux. supply unit with battery backup

ii) The CSG shall be manual operated for VCB.

1. Circuit Breaker (630A)- with manual operation Circuit Breaker should have the following:- Manually operated 630A fixed type vacuum circuit breaker with series disconnector cum earthing switch with making capacity
   - Mechanical tripped on fault indicator
   - Auxiliary contacts 1 No and 1 NC
   - Anit-reflex operating handle

1.4 **"Live Cable"** LED Indicators thru Capacitor Voltage Dividers mounted on the bushings.

- 30/C + 1E/F self powered relay with Low and High set for Over current and Earth Fault. Relay should have facility to display the maximum loaded phase current also. Relay should have facility to trip the breaker from remote commands without shunt trip coil.
- Protection Class CTs of suitable ratio, 2.5VA burden, Class 10P10 for Protection
- Mechanical ON/OFF/EARTH Indication
- The ON-OFF operation of the VCB shall be manual/motorised at local & operated through SCADA from remote
- Breaker ON/OFF/TRIP LED Indications
- **2. Common Items-**
- Gas pressure Low manometer
- Suitable isolation MCB, Control and terminals etc.
- RMU of the package sub-station should have following features:-

i) Modular, metal enclosed design.

ii) RMU must be made of robotically welded Non Ferrite, Non magnetic stainless steel of grade 304 with thickness of minimum 2.5 mm with all live parts inside stainless steel tank.

iii) **The RMU/CSG should have provision of Gas refilling at site, in case there is some leakage of the gas.**

iv) Cable covers must be interlocked with Earth switch to have complete safety of operating person. The cable bushings shall be bolted type design.

DIELECTRIC MEDIUM

i) **SF6 GAS shall be used for the dielectric medium, Arc quenching should take place in vacuum for** 11K.V RMU's/CSG's in accordance with IEC376. It is preferable to fit an absorption material in the tank to absorb the moisture from the SF6 gas and to regenerate the SF6 gas following arc interruption. The SF6 insulating medium shall be constantly monitored via a temperature compensating gas pressure indicator offering a simple go, no-go indication.

1.5 DESIGN CRITERIA

1. Service conditions

i) The offered switchgear and control gear should be suitable for continuous operation under the basic services conditions indicated below. Installation should be in normal indoor conditions in accordance with IEC 60694
Ambient temperature- 1˚C to + 45˚C
Relative humidity up to 95%
Altitude of installation up to 1000m, IEC 60120

General structural and mechanical construction

i) The offered RMU/CSG should be of the fully arc proof metal enclosed, free standing, floor mounting, flush fronted type, consisting of modules assembled into one or more units. Each unit is made of a cubicle sealed-for lift with SF6 and contains ail high voltage **components sealed off from the environment. The overall design of the switchgear should be such that front access only is required. It should be possible to erect the switchboard against a substation wall, with HV and LV cables being terminated and accessible from the front.**

ii) The units should be constructed from robotically welded Non Ferrite ,Non Magnetic grade stainless steel of grade 304 of minimum 2.5mm thickness to ensure very high degree of precision in sealing of SF6 tank.

1.6 The design of the units should be such that no permanent or harmful distortion occurs either when being lifted by eyebolts or when moved into position by rollers.

iii) The cubicle should be have a pressure relief device. In the rare case of an internal are, the high pressure by the care will release it, and the hot gases is allowed to be exhausted out at the bottom of the cubicle. A continues direction of flow of the hot gas should be achieved.

iv) The switchgear should have the minimum degree of protection (in accordance with IEC 60529) IP 67 for tank with high voltage components

- IP 2x for the front covers of the mechanism
- IP 3x for the cable connection covers

v) The RMU/CSG shall be internally are tested for 20KA for 1 sec for the gas tank & it should be interlocking are tested for cable compartment with are proof doors. Relevant type test reports should be submitted by manufacture.

vi) CICRUIT BRAKERS

1. Vacuum bottles should be use as interrupters of the currents. The circuit breaker main circuit should be connection in scries with a three-position disconnector- earthing switch . The operation between circuit breaker disconnector earthing must be interlocked.
2. Vacuum circuit breaker must self tripping and have self powered relay

vii) Bus Bars

1. Comprising the 3 single phases copper bus bars and the connections to the switch or circuit breaker. The should be integrated in the cubicle bus bars should be rated to withstand all dynamic and thermal stresses for full length of the switchgear .

viii) Earthing Switch

1. Earthing switches should be rated equal to the switchgear rating.
2. Earthing switches should be quick make type capable of making rated fault current. Earthing switch should operated from the front of the cubicle by means of a removable handle.

1.7 ix) The mechanisms

1. All mechanisms should be situated in the mechanism compartment behind the front covers outside the SF6. The mechanism for the switch and the earthing switch is operating both switches via one common shaft mechanism provide independent manual operation for closing and opening of the switch, independent closing earthing switch and dependent opening of the earthing switch.

1.8 2. The mechanism for the T-off switch and earthing switch is operating both switches via one common shaft mechanism has stored spring energy and provide independent manual operation for closing an opening switch, independent closing of the ear thing switch and dependent opening of the ear thing switch.

1.9 The mechanism for the vacuum circuit breaker (VCB) and disconnector- earthing switch is operating the VCB and the disconnector earthing switch via to separate

shafts. The mechanism for the VCB has stored spring energy and provide independent manual operation for closing and opening of the VCB. The mechanism has a relay with related and/or remote tripping device. The mechanism for the disconnector earthing switch provide independent manual operation for closing and opening of the disconnector, independent closing of the earthing switch and dependent opening of the earthing switch.

x) Front Covers

1. The front cover contains the mimic diagram of the main circuit with the position indicators for the switch device. The voltage indicators are situated on the front panels. Access to the cable bushings is in the lower each module.

xi) Position Indicators

1. The position indicators are visible through the front cover and are directly linked to the operating shaft switching devices.

xii) Voltage indicator

1. The voltage indicators are situated on the front cover, one for each module, and indicate the voltage condition each incoming cable. Identification of the phases is achieved with 1abels, L1, L2 and L3 on the front of the voltage indicators. The voltage indicator satisfies the requirement of IEC61243.

xiii) Cable compartment

1. The cables access in the RMU/CGS shall be from the front.
2. The cable bushings shall be bolted type and should be replaceable at site whenever required.

xiv) Power connection

The cables are installed in the dedicated compartment below the mimic front cover. At the bottom of the compartment an earthing bar system made of copper/GI with a minimum cross section of 120mm should be in each compartment the earthing bar should be fitted with 4 screws M10. The earthing system is connected tank by a copper/GI bar, which rises up to the connecting point of the tank behind the rear partition wall on the middle of the switchgear.

xv) INTERLOCKING

1. The mechanism for the cable switch should be provide a built in interlocking system to prevent operation of the switch when the earthing switch is closed, and to prevent operation of the earthing switch when the switch is in the closed position.
2. The mechanism for the T-off switch should be provide a built in interlocking system to prevent operation of the switch when the earthing switch is closed, and to prevent operation of the earthing switch when the switch is in the closed position. The mechanism for the VCB and the disconnector-earthing switch should be has a built in interlocking system to prevent operation of the disconnector earthing switch when the VCB is in the closed position.
3. Further is should not be possible to Open the Cable doors unless the Earthing Switch is Turned ON. In case the Cable door is accidentally left open a positive interlock shall prevent operation of Load Break Switch and Isolators/ Breaker from any operation.

xvi) **Current Transformers**

1. All current transformers should be complying with IEC 60185.
2. Current transformers should be of dry type, with ratings and ratios as required.
3. Cable current transformers used in circuit breaker modules should be maximum 100mm wide. Current transformers used in metering cubicles should be having dimensions according to DIN 42600, Narrow type. Current transformer shall be placed in the cable covers so that it can be easily replaced at site without removing the bushings.

TECHNICAL DATA

S.N.	Particular	Description
1	Standard to which switchgear complies	IEC & IS
2	Type of Ring main unit/compact switchgear	Metal Enclosed panel type, compact module
3	Number of phases	3
4	Whether RMU is type tested	Yes
5	Whether facility is provided with pressure relief	Yes
6	Insulating gas	SF6
7	Nominal operating gas pressure	1.4 bar abs. 20° C
8	Gas leakage rate/annum%	0.1% per annum
9	Expected operating lifetime	30 year
10	Whether facilities provided for gas monitoring can be delivered	Yes, temperature compensated manometer
11	Material used in tank construction	Stainless steel sheet, grade AIS 304/equiv.
12	Rated operating sequence of circuit breaker	O-3min-CO-3min-CO
13	Mechanical operations of switch	CO 1000
14	Mechanical operation of circuit breaker	CO 3000 or higher
15	Degree of protection	
	High Voltage live parts	SF6 tank IP 67
	Front cover mechanism	IP 2X
	Cable covers	IP 3X

TESTING AND CERTIFICATION.

i) TYPE TEST.

1.10 I) Units should be type tested in accordance with IEC standards 60056, 60129, 60265, 60298,60420, 60529 and 60694. The following type tests should perform on the HT Switchgear and report should submit with offer.

- Short time and peak withstand current test
- Temperature rise tests
- Dielectric tests
- Test of apparatus i.e. circuit breaker and earthing switch - Arc fault test
- Measurement of resistance of main circuit.
- Mechanical endurance test.

	• Duty cycle test. • Internal arc test for HT chamber. • RMU should be APLR type tested. Type test reports for above type shall be submitted with the offer. **ii) ROUTINE TESTS.** 1. Routine tests should be carried out in accordance with 1EC 60298 & IS standards. These tests should be ensure the reliability of the unit. 2. Below listed test should be performed as routine tests before the delivery of units; • Withstand voltage at power frequency • Measurement of the resistance of the main circuit • Withstand voltage on the auxiliary circuits • Operation of functional locks, interlocks, signaling devices and auxiliary devices - Suitability and correct operation of protections, control instruments and electrical connections of the circuit breaker operating mechanism - Verification of wiring • Visual inspection • Time travel characteristics measurement facility for Breaker should be available with the manufacturer to access the quality of RMU. VCB -Consisting of the following: Short time current - 21 kA/ 3 sec Making Capacity - 52.5 kA Auxiliary contacts - 2NO + 2NC 1.12 Power frequency withstand voltage - 50 kV Impulse withstand voltage - 95 kV Nominal operating gas pressure - 1.4 Bar abs. Front cover mechanism - IP2X Cable covers - 3X and IP54 with Outer enclosure for outdoor type Three position disconnector/earthing switch downstream vacuum circuit breaker. Three position single spring mechanism for disconnector/earthing switch The operating handle of VCB should be preferrably built-in type in mimic "Live cable" LED indicators through Capacitor Voltage Dividers mounted on the bushings. Green (ON) / Red (OFF) push buttons to operate VCB. 30/C + 1E/F self powered numerical protection relay with Low and High set for Over current and Earth Fault. The relay shall have LCD display. Relay should have facility to display the maximum loaded phase current also. Relay shall record minimum 5 fault records with time stamping. The relay shall have RS485 port for communication on MODBUS protocol Mechanical ON/OFF/EARTH/Spring Charging Indication Cable boxes should be Arc Proof with hinged doors interlocked with respective Earthing Switches. Resin cast ring core protection CT 100-50/1 Amp, 5P10,2.5VA - 03 Nos. Interlock between incomers The successful tenderer shall submit the arrangement GTP and other relevant drawings for approval as per standard make prior to supply and execution of work.

2

Technical Specification for package Type Substation (Unitized Sub-station) (1.0 to 6.4)

1.0 **CODE & STANDARDS:**

1.1 All equipment and material shall be designed manufactured and tested in accordance with the latest applicable Indian Standard/ IEC standard.

1.2 Equipment and malarial confirming to any other standard which ensures equal or better quality may be accepted. In such case copies of English version of the standard adopted shall be submitted.

1.3 The electrical installation shall met the requirement of Indian Electricity Rules as amended upto date relevant IS code of practice and Indian electricity act.

1.4 The Unitized Sub-station offered shall in general comply with the latest issues including amendments of the following standards but not restricted to it.

Title	**Indian Standards**
High Voltage low Voltage pre-Fabricated Substation	IEC: 1330
11KV Switchgear cubicles	IS: 13118, IS:3427, IEC: 694, IEC:298
Ring main unit 11KV grade	IS: 9920, IEC:265
Code of practice for selection, installation and maintenance of switchgear	IS: 10118
Distribution Transformer	IS: 2026
Dry Type power Transformer	IS: 11171
Colour for ready mix paints	IS: 5
Enamel synthetic, exterior a) Undercoating b) finishing	IS: 2932
Indian Electricity Rules	1956
Indian Electricity Act	1910

2.**0 DESIGN CRITERIA**

2.1 Package sub-station consisting of **11KV non-extensible Ring main unit SF6/VCB + Transformer + LT Switchgear** with all connection accessories, fittings & auxiliary equipment in an enclosure to supply low-voltage energy from high-voltage system as detailed in this specification. The complete unit shall be installed on a substation plinth (base) as outdoor substation located at very congested places. The vacuum circuit breaker shall be used to control and isolate the 11KV/433V Distribution transformer. The transformer LT side shall be

connected to LT switchgear. The connection cables to consumer shall be taken out from the LT switchgear.

2.2 The prefabricated- unitized substation shall be designed for a) Compactness, b) fast installation c) maintenance free operation, d) safety for worker/operator & public

2.3 The switchgear and component there of shall be capable of withstanding the mechanical and thermal stresses of short circuit listed in ratings and requirements clause without any damage or deterioration of the material.

2.4 For continues operation at specified ratings temperature rise of the various switchgear components shall be limited to permissible values stipulated in the relevant standard and/or this specification.

2.5 Service Conditions:

2.5.1 The equipment offered shall be suitable for continuous satisfactory operation in tropical area of installation.

a. Ambient Temperature: 45 Deg C

b. Relative Humidity: upto 95%

c. Altitude of installation : upto 1000m

d. The Enclosure, High Voltage switchgear. Low Voltage switchgear & Transformer of the Unitized substation shall be designed to be used under **normal outdoor service condition** as mentioned. The enclosure should take minimum space for the installation including the space required for approaching various doors & equipment inside. The enclosure construction shall be such that it fully protects ingress of rainwater & rusting. For tills purpose, construction without welded joint is preferred.

3.0 SPECIFIC REQUIRMENT

3.1 The main components of a package substation are transformer. High voltage switchgear. Low- voltage switchgear, corresponding interconnections (using cable, flexible, bus bar) & auxiliary equipment. The components shall be enclosed, common enclosure or by an assembly of enclosure. All the components shall comply with their relevant IEC standards.

3.1.1 Rathings

Description	**Unit**	**Value**
Rated Voltage/Operating voltage	KV rms	11
Rated frequency & Number of phases	Hz & nos.	50&3
Rated maximum power of substation	KVA	AS per tender schedule item.
Rated ingress protection class of Enclosure	IP:	IP 23D
Rated temp class of Transformer Compartment		K20
HV Insulation Level		
Rated withstand voltage at power frequency of 50 Hz	kV rms	28
Rated impulse withstand voltage	kV peak	75

HV Network & Busbar		
Rated current	Amp	630A
Rated short time withstand current	kA rms/3sec	21
Making capacity for switch-disconnector & earthing switches	kA peak	52.5KA
Breaking capacity of Isolators (rated full load)	A	630A
I.V. Network		As per tender schedule

3.2.0 **Outdoor enclosure:**

3.2.1 The enclosure shall be completely made of only Galvanised Sheet Steel (any other enclosure material shall not be accepted) with slanted roof tropicalized to Indian weather conditions.

3.2.2 The metal base shall ensure rigidity for easy transport & installation.

3.2.3 The structure of the substation shall have adequate mechanical strength & the roof of the substation compartment shall be designed to support adequate loads.

3.2.4 The protection degree of the Enclosure shall be **IP: 23D for transformer compartment & IP: 54 for HV & LV compartments**, for Proper/adequate ventilation aperture shall be provided for natural ventilation by way of Louvers etc.

3.2.5 The doors shall be provided with concealed padlocking arrangement.

3.2.6 The H.V. & L.V. outgoing of the transformer are to be connected to HV switchgear & incoming of the L.V. panel.

3.2.7. Internal Fault: Failure within the unitized substation due either to a defect, an exceptional service condition or mat-operation may initiate an internal are. Such an event may lead to the risk of injury, if persons are present. It is desirable that the highest practicable degree of protection to persons shall be provided.

3.2.8 Covers & Doors: Covers & doors are part of the enclosure. When they are closed, they shall provide the degree of protection specified for the enclosure. Ventilation openings shall be so arranged or shielded that same degree of protection as Specified for enclosure is obtained. Additional wire mesh may be used with proper Danger board for safety of the operator. All covers, doors or roof shall be provided with locking facility. The doors shall open outward at an angle of at least 90deg. & he quipped with a device able to maintain them in an open position.

3.2.9 Farthing: All metallic components shall be earthed to a common earthing point. It shall be terminated by un adequate terminal intended for connection to the earth system of the installation, by way of flexible jumpers strips & Lug arrangement. The continuity of the earth system shall be ensured taking into account the thermal & mechanical stresses caused by the current it may have to carry. The components to be connected to the earth system shall include:

a. The enclosure of Unitized/prefabricated substation.
b. The enclosure of High voltage switchgear & control gear from the terminal provided for the purpose.
c. The metal screen & the high voltage cable earth conductor.
d. The transformer tank or metal frame of transformer.
e. The frame &/or enclosure of low voltage switchgear.

3.2.10 Their shall be arrangement for internal lighting activated by associated switch for HV, Transformer & LV compartments separately.

3.2.11 **Labels:** Labels for warning, manufacturer's operating instructions etc. & those according to local standards & regulations shall be durable & clearly legible.

3.2.12 **Cleaning & Painting:**

a. The paints shall be carefully selected lo withstand tropical heal rain. The paint shall not scale off or crinkle or be removed by abrasion due to normal handling. Considering outdoor application the enclosure should he painted using polyurethane paint from the exterior.
b. Special care shall be taken by the manufacturer lo ensure against rusting of nuts, bolts and linings during operation. All bushings and current carrying parts shall be cleaned properly after final painting.

11KV RMU with SF6/VCB circuit Breaker INDOOR TYPE with metering module:

3.3.0 The requirement of 11kv Ring Main Unit is as under.

3.3.1 SF6 Gas tilled Non-extensible Ring Main Units with all SF6/VCB moduless comprising of following accessories enclosed in welded **single stainless steel tank** as indicated below: RMU enclosure made of only stainless steel is acceptable. Bolted tanks, separate tanks/ joined tanks/cast resin tanks etc. shall not be acceptable.

3.3.1.1 **Package type substation no. 1:** 1 nos incomer - **630A T-off** 5F67VCB with inbuilt series off-load isolator & earthing switch in scries with the breaker complete with operating mechanism, protection system with one Number cable box accessible from the front

3.3.1.2 2 Nos outgoing- **630A on-load isolators** SF6/VCB insulated with load breaking fault making capacities with one Number cable box accessible from the front

3.3.1.3 **Important Note:** The above 2 outgoing isolators should have key interlocking mechanism, such (hat either of the isolators is in close position & another in open position & vice versa at an) given point of lime operated by single common key.

3.3.1.4 **Air insulated Metering module:** The RMU should be coupled with air insulated metering module consisting of 3 nos. single phase PTs, of ratio 11000root3/110root3 accuracy class CI. 1.O. VA burden 50. The Metering module

should consist of 1 nos digital type multifunction meter (A.V. KWH,KVAR,PF,F) connected with the main incomer SF6/VCB. Indication lamps for RYB Phases.

3.3.1.5 **APFC Panel:** The HT Compartment of Package substation no.l should have an APFC panel of 70 KVAR consisting of steps (2x25KVAR + lx20KVAR), Capacitors should be MPP Resin Impregnated type, internal delta connected, lest voltage 3 KV. Losses 0.5w/Kvar. internal fuse in each element. APFC relay, type RVC. CTs. etc.

3.3.2.1 **Package type substation no. 2:** Their shall be no HT switchgear in this substation. However the incoming to the transformer shall be fed from one of the outgoing on-load isolators of package substation no. 1

3.3.2.2 **The above 11KV switchgears all busbars, SF6/VCBS, Isolators & other live parts should be mounted inside a robotically welded sealed for life, single stainless steel tank of 3 mm thick sheet metal. The tank should be filled with SF6 gas at adequate pressure. The degree of protection for gas tank should be IP67. Bolted stainless steel tanks/enclosures are not acceptable only robotically single welded tanks are acceptable.**

3.3.3 The Circuit Breaker is required to control 11KV/433 volts distribution Transformer of rating 250KVA and relay settings shall be selected accordingly.

3.3.4 Circuit Breaker must have 40 nos full short circuit (21 KA/3 sec) operations & 2000 mechanical operations under normal load conditions.

3.3.5 **General Finish:** Totally enclosed, metal clad, vermin and dust proof suitable for tropical climate use as detailed in the specifications.

3.3.6 **Ratings:** The busbars shall have continuous rating of 630 Amps. Circuit Breaker shall have a continuous rating of 630 Amps, in accordance with relevant IEC standard

3.3.7 **Breaking Capacity:** The Circuit Breaker shall be capable of having rupturing Capacity of 21kv/3 sec symmetrical at 11KV.

3.3.8 **Busbar:** Switchgear shall be complete with all connection, bus-bars etc. Copper busbars continuous rating shall be 630 Amps.The busbars should he full encapsulated b SF6 gas inside the steel tank.

3.6.1 **Switchgear:**

3.6.1.1 The RMU shall be Sealed for life, the enclosure shall meet the "sealed pressure system" criteria in accordance with IEC: 298 (a system for which no handling of gas is required through out service life of approximate 25 years.) There shall be no requirement to top up' the SF6 gas. **In addition, manufacturer should confirm that maximum leakage rate of gas is lower than 0.1% per year, valid type test report could be asked whenever required.** It shall provide full insulation, making

the switchgear insensitive to the environment. Thus assembled, the active parts of the switchgear unit shall be maintenance free.

3.6.1.2 The switchgear & switchboard shall be designed so that the position of different devices is visible lo the operator on the front of the switchboard & operations are visible as well. The switchboard shall he designed so as to prevent access to all live parts during operation without the use of tools.

3.6.1.3 RMU should be tested for internal arc fault lest.

3.7 **On-load Isolators:** The Isolators offered shall conform to IEC60129. The isolator shall he triple pole, spring assisted, hand operated, non-automatic type with quick break contacts. The operating handle shall have three positions 'ON', 'OFF' and 'EARTH' which shall be clearly marked with suitable arrangement to padlock in any position. Each isolator should be provided with series earthing switch for suitable earthing of HT cables only when isolator is in "OFF" position. A self interlocking safety arrangement shall be provided in each on-load isolating switch with corresponding earthing switch such that the operation shall be prevented from 'ON" position to 'EARTH' position or vice versa in a single operation. i.e earthing switch cannot be made "ON" until & unless isolating switch is turned 'OFF' & vice versa. This feature is must for safety of operator to work on HT cable.

3.7.1 SF6/ Vacuum Circuit Breaker:

3.7.1.1 The unit shall consist 630A spring assisted three position manually operated three pole SF6/VCB. with off-load isolator in series & also integral fault making/dead breaking earthing switch- The function/operation shall be fully interlocked to prevent the main CB. off-load isolator & earth switch from being switched "ON" at the same time & the CB not allowed to trip in "Earth On' position. The selection of the main/earth switch lever on the panel, which is allowed to move only if the main or earth switches in the off position. The lever shall be able to be pad locked in either the main or earth position.

3.7.1.2 The manual operation of the circuit breaker shall not have an effect on the trip spring. This should only be discharged under a fault (electrical) trip condition, the following manual reset operation should recharge the trip spring & reset the CB mechanism in 'main off position.

3.7.2 **Protection Relays :** The CB shall be fitted with microprocessor based self powered relay inside the front cover to avoid any tampering. The relay should be 3 Over Current + 1 Earth Faull. self powered type, fed by protection CTs mounted in the cable box.

3.7.2.1 **Cable Box & Covers :** Every on-load isolator & SFS/VGB shall be provided with suitable and identical cable boxes in front for connecting 3 core. 11KV cable from vertically below. The cable boxes shall be so located at convenient height to facilitate easy cable jointing work. The height available for cable termination should he minimum **501mm the Cable termination shall be done by Heat shrinkable Termination method** so adequate clearances shall be maintained

between phases for Termination. The most importantly each cable box cover should be provided with stainless steel hinges & self interlocking mechanism with corresponding earth switches, i.e when earthing switch is in "ON" position then only cable covers can be opened for cable maintenance A vice versa this feature is must for operator's security.

3.7.2 Locking Arrangement: Suitable padlocking arrangements shall be provided as stated below.

a. CB manual operating handle in the "OFF" position.
b. Each feeder Panel operating handle in 'Closed' "Open"' or "Earth" position.
c. Each isolator operating handle in "Closed". 1 Open', or 'Earth1 position.

3.4 Ratings:-

		Non- Extensible Ring main unit
3.8.1	Switchgear Data	
a)	Service	Outdoor bur inside GI enclosure
b)	Type	Metal clad
c)	Number of phases	3
d)	Voltage	11000V
e)	Rated Frequency	50Hz
f)	Rated Current	630 Amp
g)	Short Circuit rating	
	i) Breaking	21 KA rms for breaker
	ii) Short time withstand for 3 sec.	21 KArms
	iii) Rated S/c making	52.5 KA peak for breaker
h)	Short duration power freq.	28KV
i)	Insulation Level	75 KV peak
j)	System earthing	Solidly earthed at substation
3.8.2	Breaker	
a)	Type	SF6/VCB in SF6 Tank
b)	Rated voltage	11KV
c)	Breaking Current	
	Load breaking	21KA
d)	Making current	52.5 KA peak
e)	Rated Current	630 Amps
f)	No. of Poles	3
g)	Operating mechanism.	Trip free & free handle type with manually spring charged operation, mechanical indications & pad locking
h)	**Short circuit operations (21KA)**	40 nos
i)	**Mechanical operations (rated current)**	2000 nos
3.8.3	Isolations	
a)	Type	Load breaking and fault making

		in SF6 tank
b)	**Rated current**	630 Amps
d)	Rated breaking capacity	630 Amps
e)	**Fault making capacity**	52.5 KA peak
f)	**No. of poles**	3
g)	**Operating mechanism**	Operating handle with ON, Off, Earth positions with arrangement for padlocking in each position
3.8.4	**Busbars**	
a)	Material	Copper
b)	Type	SF6 insulated
c)	Rated Current	Ps

3.5.Tests For RMC: Each type of 11KV switchgear shall be completely assembled, wired, adjusted and tested at the factory as per IEC: 265, IEC 298

3.6 **Routine Tests:** The tests shall include but not necessarily limited to the following....

a. Operation under simulated service condition lo ensure accuracy of wiring, correctness of control scheme and proper functioning of the equipment.

b. All wiring and current carrying part shall be given appropriate High Voltage test. Distribution Transformer

4.0.0 **Oil filled Transformer: Requirement:** 11000/433 Volt. 250KVA Oil immersed, DNAN cooled suitable for installation at outdoor in Enclosure for ground mounting. The transformer should be hermitically sealed & should be with corrugated wall design.

4.1.1 **Voltage Ratio :** No load voltage 11000/433 volts within tolerance as stipulated in 1S:2026.

4.1.2 **Rating :-** The transformer shall have a continuous rating as specified at any of the specified tapping position and with the maximum temperature rise specified.

4.1.3 **Temperature Rise:** The maximum temperature rise at the specified maximum continuous output shall not exceed 35°C by thermometer in the hottest portion of the oil or 45°C measured by resistance of winding above ambient temperature. not exceeding 40°C daily average or 55°C maximum in open execution.

4.1.4 **Type of Load:** The transformer shall be suitable for carrying load within temperature rise indicated in the Indian Standard specification IS:6600 Guide for loading of oil immersed Transformer.

4.1.5 **Overloads**: The transformers shall be suitable for Carrying overload within temperature rise indicated in IS:6600 'Guide for Loading of oil immersed transformer''.

4.1.6 **Connections:** H.V Delta and I.V Star connected with neutral brought out on the secondary side for connection to earth; Vector group n11 of IS : 2026

4.1.7 **Tapping :** Each transformer shall be provided with **tap switch** so as to provided for a voltage adjustment on H.V. from +5% to -5% of rated voltage of 11000 volts in 4 equal steps (5 position) lo obtain rated voltage of 433 volts on I.V. side.

4.2.1 **Cleaning & Painting :**

a. All steel surfaces shall be thoroughly cleaned by sand blasting or chemical agents, as required to produce a smooth surface free of scales, grease and rust.

b. The internal surfaces in contact with insulating oil shall be painted with heat resistant insulation paint which shall not react & be soluble in the insulating liquid used.

c. The external Surfaces, alter cleaning, shall be given two coats of high quality epoxy based rust resisting primer as per IS: 2074 followed by filter coats.

d. The transformer shall he furnished with coals of weather resisting battleship gray epoxy based enamel paint as per IS: 2932 specially recommended for transformer use.

e. The paints shall be carefully selected lo withstand tropical heal rain, effect of proximity to the sea etc. The paint shall not scale off or crinkle or be removed by abrasion due to normal handling.

f. Special care shall be taken by the manufacturer to ensure against rusting of nuts. bolts and fillings during operation. All bushings and current currying parts shall be cleaned properly after final painting.

4.2.2 Both H.V. and I.V. bushings shall have creepage corresponding **to very heavily polluted atmosphere.**

4.2.3 **Oil:** New transformer oil used shall be according to IS: 335 with first filling.

4.2.4 **Phase Marking & Danger Plate :** Phase markings in fluoresced paint on small non-corrodible metallic lags shall be permanently fixed for H.V. and 1.V sides. Phase markings tags shall be properly fixed with proper alignment.

4.3 **Core and Coil:**

4.3.1 **Core:** The core shall be constructed from high grade, cold rolled, non-ageing, low loss, high permeability, grain oriented, cold-rolled grain oriented silicon steel laminations. The transformer shall be so designed as to have minimum humming noise. The percentage harmonic potentials with the maximum flux density under any conditions shall be such that capacitors connected in the system shall not be overloaded.

4.3.2 The core and coil assembly shall be securely fixed in position so that no shifting or deformation occurs during movement of transformer. The core and coil assembly shall be capable of withstanding without injury, the thermal and mechanical effects of short circuit at the terminals of any winding as per IS:2026

4.3.3 **Impedance Volts:** The Percentage impedance value at 75 Deg. C shall be as per the IS & percentage tolerances shall be as specified in IS: 2026. The value of the impedance volts at each tapping over the specified range shall be specified in the bid.

4.3.4 **Regulation:** The regulation at 75° C at full load at unity and 0.8 power factor subject to the usual tolerance as per lS:2026 shall be specified in the bid.

4.3.5 **Power Freq. High Voltage & Insulation Level (Impulse voltage):** The distribution transformer shall he designed so that they are capable of withstanding high voltage & impulse voltages as per IS:2026 and as given below:

a. Impulse Voltage for 11KV winding: 75 KV (1.2/50 microsecond wave shape)

b. High Voltage: 28KV rms.

4.4 **Miscellaneous: RATINGS (Summary):**

	Application	Corrugated Tank
4.4.1	Service	Outdoor (inside package sub-station)step down
4.4.2	Type	250KVA oil immersed corrugated tank
4.4.3	Cooling system	ONAN
4.4.4	No. of Phases	3
4.4.5	No. of winding per phase	2
4.4.6	Rated output (KVA) with AMAN cooling	As per tender schedule requirements
4.4.7	Rated voltage in KV (line to line)	HV-11KV LV-0.433KV
4.4.8	Rated frequency	50Hz
4.4.9	Temperature rise above 40° C	
A	In winding by resistance	35°C
B	In oil by thermometer	45°C
4.4.10	Insulation level	
A	H.V. Power Freq. KV rms	28 KV
B	H.V. (KV peak_ Impulse	75KV
C	L.V. (KV)	-
4.4.11	Vector Group	Dyn 11
4.4.12	Parallel operation	Yes
4.4.13	Type of taps provided	Off Load full capacity
A	Taps provided on	HV winding
B	Range of Taps	+5% in steps of 2.5% (4steps, 5 position)
C	Method of Tap change control	Tap switch
D	Manual load	Yes off circuit
4.4.14	Percentage impedance at 75 Deg C	As per IS
4.4.15	System earthing	
A	H.V.	Solidly earthed
B	L.V.	Solidly earthed
4.4.16	Terminal arrangement	
A	H.V.	From H.V. bushing on Top.
B	L.V.	From H.V. bushing on Top.
C	L.V. Neutral	From L.V. Neutral bushing on Top.
4.4.17	Transformer-bushing voltage class a) H.V. (KV) b) L.V. (KV)	12KV class 1.1KV class
4.4.18	Short circuit withstand capability duration	Sec.

4.5.1 **Fittings & Accessories For Corrugated Tank Transformer:** The following accessories conforming to IS: 3639 shall be provided for 11KV/0.433 kV, distribution transformer.

4.5.2 Two earthing terminals with copper lugs. The lugs shall be provided in such a way that they shall not obstruct the movements of rollers. The earthing continuity for all the connected equipment's shall be property done.

4.5.3 Two lilting lugs for complete transformer as well as enclosure.

4.5.4 Off circuit lapping switch shall be. 3 pole gang operated, top mounting type only. Tap switch shall he suitable for rated current considering 20% overloading & operating voltage. Switch shall be provided with externally operating hand wheel handle with indicator and locking device, with direction changing facility and locking arrangement.

4.5.5 **Rating plate and diagram plate** of durable non-corroding metal giving information as required under IS: 2026. Rating plate shall also include Transformer **Actual %Z, No-Load Loss & Full- Load Loss at 75°C** along with details like Purchase Order Number, date. The name plate marking shall be done with fluorescent colour. Each equipment shall carry individual name-plate with proper instructions & affixed with Screws.

5.0 L.T. PANEL

5.1 **System:**

A. **Declared Voltage :-** 3 Phase, 415V (+6%) 50 Hz

B. **Neutral:-** Solidly earthed at substation .

5.2 **General Finish:-** Tropical-totally enclosed, metal-clad, weather-proof, vermin and dust proof.

5.3 **Circuit Ways:-** As per Tender Schedule.

5.4 **Construction:**

5.4.1 The terminals shall be of sufficient mechanical strength and shall provide adequate electrical contact for the appropriate size of cable used. They shall be capable of receiving appropriate size of Aluminium conductors. They shall be provided with suitable hardware, plane washers and spring washers for cable connection.

5.4.2 The panel bus bar material shall be of copper & enclosure of L.T shall be constructed using 1.5/2mm CRCA sheet steel.

5.4.3 No contact pressure shall be transmitted through insulating material & the gripping of the conductor shall take place between metal faces.

5.4.4 **Metering:-** Each LT panel should consist of digital Voltmeter with selector switch, digital Ammeter with selector switch. Indication lamps for RYB.

5.0 **Earthing :-** Earthing arrangement shall be provided for earthing each cable. PVC cable gland, neutral busbar, chassis and frame work of the cubicle with separate earthing terminals at two ends. The main earthing terminals shall be suitably marked. The earthing terminals shall be of adequate size, protected against corrosion, and readily accessible. These shall be identified by means of sign marked in a legible manner on or adjacent to terminals.

6.0 **TYPE TESTS FOR THE PACKAGE SUBSTATION:**

6.1 **The offered package substation should be fully type tested as per the TEC-1330**

6.2 **Routine Tests:** The routine tests shall be made on each complete prefabricated substation.

	A. Voltage tests on auxiliary circuit. B. Functional Test. C. Verification of complete wiring. 6.3 **Test Witness:-** Routine test shall be performed in presence of Owner's representative if so desired by the Owner. The Contractor shall give at least fifteen (15) days advance notice of the date when the tests are to be carried out. 6.4. **Test Certificates:** All relevant Type Test reports to be submitted along with offer. Certified reports of all the tests carried out at the works shall be furnished for approval of the DFCCIL.
3	**LT Distribution Panel:** Supply fixing, testing and commissioning of LT distribution panel board dust and vermin proof of MS sheet 1.6 mm thick. IP 42 degree protection consisting 2x400A 4-pole 36kA MCCB, as incoming and 10 x100A 4-pule 36A MCCB as outgoing having suitable size Cupper bus bar and 3-phase 50A electronic digital energy meter 2 No. in incoming, indicating lamp with Digital A-meter. Digital V-meter and one set of Neon type indicating lamp with fuses. CT. selector switches. Copper bus and earth bus etc. as required by Railway complete in all respect. All MCCBs should be of Load adjustable Feature and vertical type.
4	ACB shall be 1000 Amps 4 pole, 415V, 3 phase 50Hz AC electronic draw out type, front operated microprocessor based LCD protection release for adjustable over current. Short circuit and earth fault protection. The breaker shall have minimum braking capacity 50 KA (RMS). The ACB should have ICS=ICU=ICW for 1 second and over temperature protection and should confirm to IEC 60947/IS-13947/part-II/1939 or latest, Legrand cat. No. 028732 & 028858 of similar complete in all respect as per DFCCIL requirement.
5	ACB (for bus coupling application) shall be 1000 Amps 4 pole, 415V, 3 phase 50Hz AC electronic draw out type, front operated microprocessor based protection release for adjustable over current and short circuit protection. The breaker shall have minimum braking capacity 50 KA (RMS). The ACB should have ICS=ICU=ICW for 1 second and over temperature protection and should confirm to IEC 60947/IS-13947/part-II/1939 or latest, Legrand cat. No. 028732 & 028858 of similar complete in all respect as per DFCCIL requirement.
6	Supply, fixing, testing and commissioning of SCPCU 1000A straight length L=3 M 3 OUTL. Make- legrand cat. No. 65280131P or similar complete in all respect as per DFCCIL requirement
7	Supply, fixing, testing and commissioning of SCPCU 1000A end feed unit RH Make-legrand cat. No. 65280101P or similar complete in all respect as per DFCCIL requirement
8	Supply, fixing, testing and commissioning of SCP end B120 make-legrand cat No. 65283101P or similar complete in all respect as per DFCCIL requirement

9	Supply, fixing, testing and commissioning of SC B120 hanger with bracket and spring (riser) make-Legrand cat No. 655213711 or similar complete in all respect as per DFCCIL requirement
10	Supply, fixing, testing and commissioning of SCP Plug in box 125 Amp IP-55 empty Make - legrand cat No. 65285012P or similar complete in all respect as per DFCCIL requirement
11	Supply, fixing, testing and commissioning of Manual change over switch - 1000A ,4P (on Load type) complete in all respect as per DFCCIL requirement
12	Laying of LT/HT Cable in AIR / Pipe/ Wall/ Cable tray with proper fixing arrangement by MS iron clamp, MS strip, nut bolts complete in all respect as per DFCCIL requirement
13	Horizontal Directional Drilling (HDD)/Boring and trenchless cabling. Supply, transportation and insertion of self-lubricated HDPE pipe and laying of cables in boring under the track /road /ground/ masonry building by using self-lubricated HDPE pipe of 120mm outer dia and 103.5mm inner dia in the bore and laying of cables in the bore under the track/road/ground/masonry building. The depth of horizontal boring should be minimum 1 metre or more from rail flange/road level/ground, as per site requirement.
14	Excavation of 0.50mtr width 1.20 mtr deep trench in all kind of soil for laying of HDPE/spun concrete pipe for underground cable crossing/laying. The trench should be refilled with same soil and restored to original position, Whenever excavation is to be done across the road, than road should be repaired with concrete cement properly, complete in all respect as per DFCCIL requirement. All work will be done in presence of DFC representative without disturbing the DFC track/installation taking all necessary safety precautions. HDPE PIPES (dia 160 mm under road/ground/floor/railway track) This item covers supply & laying of HDPE pipe in already excavated trench under road/ground/floor/railway track etc. with technical specification 160 mm dia (OD) . Wall thickness between 6.2mm to 7.1mm material grade PE-80 and class of pipe should be PN-4 with confirming to IS:4984/1995 or latest . Make: Sangir, Dutron, NOCIL, Hasti, Reliance, supreme of equivalent. After laying of HDPE pipe, the trench should be refilled with same soil and restored to original position & pipe should be laid in trench such that possible to withdraw the cable for repair or replacement. The pipe shall be laid with a gradient to facilitate drainage of water and it shall be right angle to the track, for each power crossing, contractor shall have to lay two length of pipe for 02 nos. of cable to be laid or as per instruction of site engineer. Accessories related with laying of HDPE pipe like fitting bends joints/coupler, junction, flange end cap etc. as per site requirement will be provide by contractor and no extra payment will be given for above items. The contractor shall arrange inspection of HDPE pipe at manufacture's works before dispatch at his own cost if required by the DFC and have to submit manufacture's test certificate of HDPE pipe.

15	Excavation of 0.50mtr width 1.20 mtr deep trench in all kind of soil for laying of HDPE/spun concrete pipe for underground cable crossing/laying. The trench should be refilled with same soil and restored to original position, Whenever excavation is to be done across the road, than road should be repaired with concrete cement properly, complete in all respect as per DFCCIL requirement. All work will be done in presence of DFC representative without disturbing the DFC track/installation taking all necessary safety precautions. HDPE PIPES (dia 160 mm under road/ground/floor/railway track) This item covers supply & laying of HDPE pipe in already excavated trench under road/ground/floor/railway track etc. with technical specification 160 mm dia (OD) . Wall thickness between 6.2mm to 7.1mm material grade PE-80 and class of pipe should be PN-4 with confirming to IS:4984/1995 or latest . Make: Sangir, Dutron, NOCIL, Hasti, Reliance, supreme of equivalent. After laying of HDPE pipe, the trench should be refilled with same soil and restored to original position & pipe should be laid in trench such that possible to withdraw the cable for repair or replacement. The pipe shall be laid with a gradient to facilitate drainage of water and it shall be right angle to the track, for each power crossing, contractor shall have to lay two length of pipe for 02 nos. of cable to be laid or as per instruction of site engineer. Accessories related with laying of HDPE pipe like fitting bends joints/coupler, junction, flange end cap etc. as per site requirement will be provide by contractor and no extra payment will be given for above items. The contractor shall arrange inspection of HDPE pipe at manufacture's works before dispatch at his own cost if required by the DFC and have to submit manufacture's test certificate of HDPE pipe.
16	HT XLPE CABLE LAYING: Laying and commissioning of PVC/XLPE HT insulated armored sheathed aluminium conducto 11000/33000 V volts grade cable underground/under the road/under the track along-with pol./wall/in air already laid pipe. Before laying of cable in the trench, it should be thoroughly checked for sharp ballast and stones so that the cable may not be damaged. Before and after laying cable the IR value should be checked. While laying the cable care should be taken that no tree roots/water lodging area come on the way of cable, as it may damage the outside insulation of cable. Armoring at both ends of the cable should be eathed. At termination point of cable aluminium lugs and brass glands of suitable size and good quality shall be provided. The contractor shall restore the original condition of the space after laying of cable. Bending radius of the cable shall not be less than 16 times of dia of the cable. The trench shall be 35 cm. Wide and 100 cm. Deep and the cable shall be covered with good quality bricks/RCC

	cover of 50 mm thick of ratio 1:3:6. The trench shall be refilled with soil available. Wherever the cable emerges out the ground at least two loops of sufficient radius should be laid. Installation of cable along with wall/pole/roof top/ underneath sheds wherever required shall be done with Support of GI saddies/clamp of proper size/GI pipe. The cost of GI pipe is taken separately. Breaking of floor/wall/road and other civil structures and repairing upto original condition, shall be done by the contractor and no extra cost will be paid for it. Permission for crossing any road if required shall be arranged by the contractor in coordination with concerned rail supervisor, and all the expenditures will be borne by the contractor. Test report if any should by jointly signed by the contractor and concerned supervisor. All the instruments required for insulation testing high voltage testing shall be arranged by contractor at his own cost. The cable shall be transported by the contractor through his own means from major electrical depot to required site of work. Before transportation of the cable it shall be tested at site to ascertain the serviceability of the cable by the contractor.
17	Digging and filling of trench size 0.4x0.12 mtr as per spec (Trench work may be on kuchha/pucca and land and all type of soil as per site requirement and without protective layer of brick) surface of trench shall be made good in all respect and satisfaction of site engineer as per DFC requirement. While digging it should be ensured that there is no damage to water/sewarage pipe lines/S&T cables/Telecom cables etc. if so, any loss on this account will be borne by the contractor.
18	Supply of LT cable size 4x300sqmm as per DFCCIL Requirement
19	Supply of LT cable size 4x16 sqmm as per DFCCIL Requirement
20	Supply of LT cable size 4x35 sqmm as per DFCCIL Requirement
21	Supply of LT cable size 4x70 sqmm as per DFCCIL Requirement
22	Supply of LT cable size 4x185 sqmm as per DFCCIL Requirement
23	Supply of LT cable size 3x70 sqmm as per DFCCIL Requirement
24	HT CABLE END BOXES: Indoor supply installation, testing & commissioning of heat shrinkable termination kit indoor type suitable for 11KV with required accessories complete in all respect suitable for 3 core, up to 50 to 120 sqmm HT XLPE cable. The cable end boxes shall be fixed with fixing brackets.
25	HT CABLE END BOXES: Outdoor supply installation, testing & commissioning of heat shrinkable termination kit outdoor type suitable for 11KV with required accessories complete in all respect suitable for 3 core, up to 50 to 120 sqmm HT XLPE cable. The cable end boxes shall be fixed with fixing brackets.
26	HT CABLE Straight Joint: supply installation, testing & commissioning of heat shrinkable termination HT cable joint suitable for 11KV with required accessories complete in all respect suitable for 3 core, up to 50 to 240sqmm XLPE cable.

27	Copper plate Earthing:- Supply of material and providing copper plate earthing 4 meter deep size 600x600x3 mm with 4 meter long GI B- class pipe 19/20mm for pouring of water with 10 kg and 60 kg charcoal including masonry RCC earth enclosure with pull out handle and 25x3 mm copper flat strip from earth pit bottom to earth pit top. The copper plate to be provided with 02 nos. Holes of 10mm dia and copper flat strip to be joint by 10mm brace nut and bolt. The copper flat strip shall be providing with 03 holes of 10mm dia 02 nos. For earth plate and 01 no. Hole on top for connection of extra flat. The earth value to be measured and should maintained resistance level as per IE rule and marked on earth pit.
28	Copper earth flat - Supply and lying copper earth flat strip 25x3mm from earth pit top to main board/equipment/panel.
29	Supply, fixing, testing & commissioning of feeder pillar distribution box made of MS sheet 1.6mm thick size 600x300x600mm or above with suitable MS stand and copper Bus bar 200A capacity with 2 no. MCB 63A 4-pole as per requirement of DFC complete in all respect and connections for supply.
30	Supply and providing of cable marker- The cable marker shall be made of MS sheet 1.5mm thick size 150 x 100mm welded with 12mm dia MS rod 85cm long. The lower end of rod should be turned in hooks shape and attached with the cable at the laying.
31	**PIPE EARTHING:-** supply of material and providing earth electrode 4 mtr. Long of GI 'B' class pipe 50mm dia fixed vertically downward with 12mm dia holes around the pipe at a distance of 30 cms each with 50kg charcoal and 10kg salt with RCC/bricks cement earth enclosure with 3 "thickness top cover of either RCC slab or single pucca stone slab and earth electrode should be connected by 8 swg GI earth wire from earth pit to main MSB/DB/LT panel/HT apparatus. The GI cap on top of earth pipe to be provided for protection against foreign material. The GI pipe to be tapered at one end. The 8swg GI earth wire to be fixed at bottom and top of earth pipe with 12mm dia MS nut and bolt. Dimension of digging area below ground level should be min. 350mm or above either cylindrical or square shape to provide adequate area for filling charcoal and salt. (i) Earthing should be as per IS 3043-1987 or latest and should give desired value of resistance as per I.E. rules. (ii) The location of earth electrode will be such where the soil has reasonable chance of remaining moist. (iii) As far as possible entrenches, permanent road ways etc. are to be definitely avoided for locating the earth electrodes. (iv) A plate of 14 SWG MS sheet size 150x100mm painted with black enamel paint shall be fixed near the earth the following information shall be indicated (a) Earth No. (b) individual value of earth (c) Date of testing. (v) For easy tightening/un-tightening of hut bolt for measurement of earth value. Size of earth pit (enclosure) should be 12"x12"x18" excluding thickness of wall which should be 4.5" min area below earth pit (foundation) should be soiled with thickness of 6" minimum

	(vi) The distance between two electrodes should be less than eight meter and shall not situate within a distance of 1.5 mtr. Form the building whose installation system is being earthed. (vii) The GI pipe should be tapered at one end. Hot dip GI earth wire shall be used and connected from earth to main board/mtr. Board/equipment. The wire shall be run in 15mm "A" class GI pipe, along with wall/pole. The depth of 8 SWG wire in ground shall be minimum 30 cms running in 'A' class GI pipe. Value of each shall be measured after commissioning to earth.
32	GI Pipe: Supply and fixing/laying GI Pipe B class as per IS 1239 or latest size 38/50 mm dia for cable use including all bends sokcets required for the work. When GI pipe is laying through/across road or pucca platform the same should be repaired with concrete- cement properly
33	GI Pipe: Supply and fixing/laying GI Pipe B class as per IS 1239 or latest size 38/50 mm dia for cable use including all bends sokcets required for the work. When GI pipe is laying through/across road or pucca platform the same should be repaired with concrete- cement properly
34	Supply and fixing of 250 KVA 3 phase liquid cooled Diesel Generator set with AMF control Panel make cummins or similar as per DFCCIL requirement

Technical Specification for Fire Fighting Work (Schedule-G)

Specification of supply, installation, testing& commissioning of Down Comer (fire fighting) System

1.0 The down Comer (firefighting) system shall have to be got approved from local fire authority by the contractor himself. After this only the down comer (fire fighting) system shall be taken over by DFCCIL.

2.0 **Compliance with regulations and Indian Standards:** -All work shall be carried out in accordance with relevant regulations, both statutory and those specified by the Indian Standards related to the works covered by this specification. In particular the equipment and installation will comply with the following: -

i) IS Standards as applicable
ii) Workmen's Compensation Act.
iii) Local fire norms applicable.
iv) Any other regulation of Central Govt. and/or State Govt.

2.1 Nothing in this specification shall be constructed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulation and safety codes.

3.0 Painting: -The tendered cost shall include cost of painting of entire exposed steel work in the complete installation, after two coats of anti-corrosive primer paint. Final finishing & painting shall invariably be done at site. One coat of final finishing of approved colour may be given to the entire installation after completing the work.

4.0 Acceptable makes: -The accepted makes for different items shall be as under:

Sr. No.	Item	Acceptable makes
1.	Pump	Kirloskar/Beacon Weir/Greaves/Peerless or similar
2.	Motor	Kirloskar/NGEF/Siemens/Crompton/ABB or similar
3.	MS Pipe	Jindal Hissar/TATA/Prakash Surya or similar
4.	CI Valves (Sluice & NR)	Kirloskar/Macneil/Major/Advance/Zoloto/Kartar or similar
5.	Gun metal valve	Divine/Sant/Leader ISI marked or similar
6.	MCCB	L&T/Siemens/ABB/GE/legrand or similar

7.	Cushy foot mountings	Dunlop or similar
8.	Batteries	Lucas/Excide/Standard/Amararaja or similar
9.	Selector switch	L&T/Kaycee/Sailzer or similar
10.	Indication lights	Concordd/vaishno or similar
11.	Ammeter/Voltmeter	AE/IMP or similar
12.	Pressure switches	Danfoss/Ranutrol or similar
13.	Motor starter	L&T/Siemens/GE/Cutler Hammer or similar
14.	Relays	L&T/Siemens/GE/Cutler Hammer/Crompton or similar
15.	CTs	AE/Kappa or similar
16.	Pressure gauges	Fei big/H.guru/Taylor/IRA or similar
17.	Armoured power cables	Universal/Gloster/Polycabb/Incabb/Asian/national or similar
18.	Control cables	Grandlay/National/Polycab or similar
19.	Dash fastener	Canco/hilti or similar
20.	Control Panel	CPRI approved
21.	Hydrant valves, Fire Brigade Inlet, Hose Coupling, Hose Reel Drum, Shut Off Nozzle, Branch Pipe	Minimax/Newage/Getech or similar
22.	Strainer	Jayper/dashmesh/Audco/Kartar/Zoloto or similar
23.	Enamel Paints	Asian/Goodlas Nerolec/Jenson Nicholsons or similar
24.	Rubber Hose Reel	Jyoti/Getech/Dozz or similar
25.	RRL Hose pipe	Jayshree/CRC/Getech/newage/Tulsi or similar
26.	Butter fly valve	Advance/Audco or similar
27.	Fire Alarm panel	System sensor/cooper/Agni or similar
28.	Ball valve	Zaloto/Danfos or similar
29.	Wire & Flat Cable	Polycab/L&T/Finolex/Asian or similar
30.	Expansion Joint	Easyflex or similar
31.	Fire Extinguisher	Minimex/ safetech or similar
32.	Self-Contained Breathing appraters	Draggar/ MSA/ Fenzey/Rsqe or similar

5.0 Technical specifications

5.0 Piping

5. 1.1 only M.S. black steel pipes (IS marked) shall be used.

5.1.2 M.S. pipe up to 100 mm dia shall have all fittings as per IS: 1239 (heavy duty)

6.7.3 Any hangers and supports used shall be capable of carrying the sum total of all concurrently acting loads. They shall be designed to provide the required supporting effects and allow pipe lines movements as necessary.

6.7.4 Flanged joints shall be used for connections to vessels, equipments, flanged valves and also on suitable straight length of pipe line of strategic points to facilitate erection and subsequent maintenance work.

6.7.5 All pipelines shall be pressure tested to 10.5 kg / cm2.

6.7.6 Pipes shall be given one primary coat of red-oxide paint before being installed pipes shall be sloping towards drain points.

6.7.7 Fitting shall be new and from reputed manufacturer. Fittings shall be of malleable casting of pressure ratings suitable for the piping system. Fittings used on welded piping shall be of the weld able type. Flanges shall be new and from standard manufacturers.

6.7.8 Tee-off connection shall be through reducing tees, wherever possible, otherwise ferrules welded to the main pipe shall be used. Drilling and tapping of the walls of the main pipe shall not be resorted to.

6.7.9 All equipment and valve connections shall be through flanges.

6.7.10 All welded piping is subject to the approval of the Engineer-in-charge and sufficient number of flanges and unions shall be provided.

6.8 Piping Installation

6.8.1 Piping shall be properly supported on C.C. base at suitable intervals or suspended by stands, clamps, hangers etc. as specified and as required. The tenderer shall adequately design all the supports, brackets, saddles, clamps, hangers etc. and be responsible for their structural integrity.

6.8.2 For suspending smaller size pipes suspension arrangements including materials like dash fasteners, saddles, brackets etc. shall be provided and fixed by the contractor undertaking this work.

6.8.3 Pipe supports shall be of steel, adjustable for height and primer coated with rust preventive paint and finish coated black. Where pipe and clamp are of dissimilar material, a gasket shall be provided in between. Pipe supports shall be spaced suitably keeping in view the site and structural requirements of different locations. Pipe hangers shall be fixed on walls and ceiling by means of dash fasteners.

6.8.4 All pipes using screwed fittings shall be accurately cut to the required sizes and threaded in accordance with IS: 554 and burs removed before laying. Open ends of the piping shall be locked as the pipe is installed to avoid entrance of foreign matter. Wherever reducers are to be made in

horizontal runs, eccentric reducers shall be used if the piping is to drain freely, in other locations concentric reducers may be used.

6.8.5 Any item required to be welded/ Bragged to prevent the theft will be done by the contractor.

6.9 **Vibration elimination-** Piping installation shall be carried out with vibration elimination fittings wherever required.

6.10 Testing

6.10.1 All piping shall be tested to hydrostatic test pressure of 7.0 kg / cm2 or twice the designs pressure whichever is higher for a period of not less than 24 hours. All the leaks and defects in joints revealed during the testing shall be rectified to the satisfaction of the Engineer-in-charge.

6.10.2 Piping required subsequent to the above pressure test shall be re-tested in the same manner.

6.10.3 Systems may be tested in sections and such sections shall be securely capped.

6.10.4 The Engineer-in-charge shall be notified well in advance by the contractor of his intention to test a section of piping and the Engineer-in-charge or his authorized representative shall witness all testing.

6.10.5 The contractor shall make sure that proper noiseless circulation of fluid is achieved through the system concerned. If proper circulation is not achieved due to air bound connections, the contractor shall rectify the defective connections. He shall bear all the expenses for carrying out the above rectifications including the tarring –up and re-finishing of floors walls etc. as required.

6.10.6 The contractor shall provide all materials, tools, equipment, instrument, services and labour required to perform the test and shall ensure that the areas are cleaned up and spill over water is removed.

6.11 **Painting** -After the piping has been installed, tested and run for at least ten days, the piping shall be given two finish coats of approved colour. The direction of flow of fluid in the pipes shall be visibly marked in white arrows or as directed by the Engineer-in-charge.

6.12 **Pressure Switches**

6.12.1 The pressure switches shall be employed for starting and shutting down operation of pumps automatically, dictated by line pressure. The pressure switch shall be diaphragm type. It shall be suitable for line pressures up to 10kg/cm^2.

6.12.2 The switch shall be suitable for consistent and repeated operations without change in values. It shall be provided with IP:66 water and environment protection.

6.12.3 The enclosure shall be of aluminum and pressure element and wetted parts shall be of stainless steel. The switch shall be snap acting type with 1 number NO/NC contract.

6.13 **Air vessel and release valve**

6.13.1 The air vessel shall be provided to compensate for slight loss of pressure in the system and to provide an air cushion for counter acting pressure surges whenever the pumping set comes into operation. It shall be normally partly full of water, the remaining being filled with air, which will be under compression when the system is in normal operation.

6.13.2 Air vessel shall be fabricated from 8 mm thick MS plate of 1.2 M height and 250 mm dia with dished ends and suitable supporting legs. It shall be provided with a flanged connection from pump, one 25mm drain with ball valve. The air vessel shall be hydraulically tested to twice the working pressure.

6.13.3 The air vessel shall also be provided with an air release valve mounted at the top.

6.14 **Hose Reel**-The Hose Reel shall be drum type. The rubber hosepipe shall be fixed on a drum that shall be fixed to the wall by means of a heavy-duty bracket.

The rubber tubing shall be of approved make. The wall-mounted bracket shall be fixed by means of fasteners. The Hose Reel shall have G.M. nozzle.

The Hose Reel shall be connected to the riser by means of 25 mm dia MS pipe with threaded bends, union etc as required. A cut off ball valve shall also be provided.

6.15 **External Hose Cabinets-** The cabinet shall be of minimum 2 mm thick MS sheet and framing of 25 x 25 x 4 mm thick angle section with single opening glazed doors (clear glass of 4 mm thickness). The glass shall be firmly fixed by means of steel clips and screws. Hinges shall also be screwed and not welded. The Hose Cabinet paint shall be stove enameled of approved colour.

6.16 **Hydrant-** Hydrant valve shall be of S.S as per IS: 5290. The valve shall be oblique type complete with hand wheel, quick coupling connection, spring and gun metal blank cap as per IS : 5290.

The Hydrant shall be constructed from SS and finished to a smooth polish on screwed ends. The Hydrant shall have screwed inlet of 75 mm dia, flanged type with 4 nos. holes. The outlet shall be 63 mm female instantaneous oblique type. The Hydrant shall have a plug with chain fixed

body of the hydrant. The hydrant shall not leak at any screwed joint. Threaded parts shall be sealed with hold tight.

6.17 **Fire Bridage Inlet-**For Brigade, inlet connection shall be taken directly to the Down Comer. It shall comprise of two instantaneous male inlets coupling with plug and steel chain. The inlet shall have a water type non-return valve and a butterfly valve on the line up to the Down Comer. The fire Brigade inlet shall be complete with necessary components like special fittings of MS bend, flanged tees etc.

6.18 **Valve Pits (If require) -**A masonry pits of internal dimensions 1 M x 1 M x 1.2 M depth shall be built to accommodate each of the valves placed externally. Walls shall be of 75-class designation brickwork in cement mortar 1: 6 (1 cement: 6 fine sand) with CI manhole cover with frame. Inside plastering with cement mortar 1: 3 (1 cement: 3 coarse sand) 12 mm thick finished with a floating coat of neat cement all complete.

6.19 **Couplings-**Coupling shall be of SS as per IS: 318, machined and polished to requirements. Both Male and female couplings shall be fitted into each other smoothly and without any unnecessary force. Couplings shall be IS: 903 marked with the name of the manufacturer. The Male couplings shall be provided with lugs for inserting female coupling.

6.20 **Non-Return Valve-**Non-return valve shall be cast iron swing action gravity actuated check type. An arrow mark in the direction of flow is marked on the body of the valve. The valve shall be as per IS: 531 certification.

The valve shall be of cast iron body and cover. The internal flap in the direction of flow of water shall be of cast iron and hinged by a hinge pin of high tensile brass or stainless steel. Cast iron parts shall be conforming to IS: 210 /70, grade 200/260 types.

The gasket shall be of high quality rubber and flap seat ring of leaded gun metal to BS 1400 LG 2 C. At high pressure of water flow the flapper shall seat tightly to the seat. The valve shall be capable of handing pressure up to 15 kg / cm^2.

6.21 LT Cable LayingLaying and commissioning of different sizes of cables in trench / under the road / under the track / along-with pole / wall / in air/cable tray/ already laid pipe. Before laying of cable the trench should be thoroughly checked for sharp ballast and stones so that the cable may not be damaged. Before and after laying the cable the IR value should be checked. While laying the cable care should be taken that no tree roots come on the way of cable, as it may damage the outside insulation of cable. Armouring at both ends of cable should be earthed. At termination point

of cable aluminium lugs and Brass glands of suitable size and good quality shall be provided. Cable markers should be provided on both the sides/ each turn of the cable and at each 20 mtrs (The coast of cable marker are taken separately) and all bends. Bending radius of the cable shall not less than 16 times of dia of the cable. The trench shall be 35 cm. Wide and 75 cm and the cable should be laid in it and the cable shall be covered with bricks And the trench shall be refilled with soil available. Wherever the cable emerges out of the ground at least two loops of sufficient radius should be laid. Installation of cable along with wall / pole / underneath sheds wherever required shall be done with support of G. I. Saddles / J bolts of proper size / G. I. Pipe. The cost of G. I. Pipe are taken separately. Breaking of floor / wall / road and other civil structures and repairing upto original condition, shall be done by the contractor, and no extra cost will be paid for it. Permission for crossing any road if required shall be arranged by the contractor in coordination of concerned DFCCIL supervisor, and all the expenditures will be borne by the contractor. Before and after laying of cable, IR value should be checked. Test report should be jointly signed by the contractor and concerned supervisor. All the instruments required for insulation testing/ high voltage testing shall be arranged by contractor at his own cost. Transportation of the cable is to be done by contractor from main depot to required site.

6.22 **EARTHING**

Pipe Earthing

The earthing shall be done with 3 mtrs long 50 mm B class G.I. pipe earth electrode with 12 mm dia holes around the pipe at a distance of 30 cms each with at least 50 kg charcoal and 10 kg salt (alternate layer of salt and charcoal). Earth electrode to be put vertically downward. The GI pipe should be tapered at one end. A brick cement / cement concrete enclosure shall be provided. Hot dip G.I. earth wire shall be used and connected from earth to main board/ meter board. The wire shall be run in 15 mm 'A' class G.I. pipe, along with wall / pole upto 1.5 mtr. The depth of 8 SWG wire in ground shall be minimum 30 cms . Value of each earth shall be measured after commissioning of earth. A plate of 14 SWG MS sheet size 150 x 100 mm painted with black enamel paint shall be fixed near the earth and following information shall be indicated

(i) Earth No.
(ii) Individual value of earth
(iii) Date of testing. The earth pipe shall be provided with GI cap to prevent blocking of the pipe.

A cement concrete cover for each earth electrodes enclosure shall be provided with pull out handle. A G.I. cap is to be provided on the top of the pipe earth electrode in order to prevent the dust/garbage entrance in the pipe and avoid choking. The distance between two earths shall not be less than 2L.

Technical Specification of HVAC (Schedule-H)

NS. Item No.	Specification of Item
1	Supply, installation, testing and commissioning of 5 star rated split type 1.5 ton air conditioners as per DFCCIL Requirement.
2	Supply and installation of cassate type units of 3 TR capacity having indoor/outdoor complete with cordless remote control and with in built heating and cooling arrangement scrool compressor as per DFCCIL Requirement.
3	Supply and installation of copper pip with nitril insulation having specification of 19.05mm OD for suction line and 12.7 mm OD for liquid line with drian pipe and connecting wire as per DFCCIL Requirement.
4	Testing and commissioning of 3 TR cassate unit inclusive first charging of refrigerant if required as per DFCCIL Requirement.
5	Supply and installation of cassate type units of 1.8/2.0 capacity having having indoor/outdoor complete with cordless remote control and with in built heating and cooling arrangement scrool compressor as per DFCCIL Requirement.
6	Testing and commissioning of 1.8/2.0 TR cassate unit inclusive first charging of refrigerant if required as per DFCCIL Requirement.
7	Supply and installation of copper pip with nitril insulation having specification 15.88 OD for suction line and 6.35mm OD for liquid line with drian pipe and connecting wire as per DFCCIL Requirement.
8	Supply and fixing of CPVC pipe 20mm dia for split AC condensate water drain including cutting/making hole in wall, laying of CPVC pipe with elbow TEE reducer, Socket etc. as per site requirement.
9	Supply and fixing of CPVC pipe 25mm dia for split AC condensate water drain including cutting/making hole in wall, laying of CPVC pipe with elbow TEE reducer, Socket etc. as per site requirement.
10	Supply fixing and PVC conduit size 25mm dia, thickness 1.6mm ISI marked surface/concealed complete in all respect as per DFCCIL requirement.
11	Supply, laying and connecting for power supply by copper cable 2.5sqmm 3 core as per relevant and latest IS.
12	Supply & installation of refrigerant copper piping with insulation (size 1/2" & 1/4") complete in all respect as per DFCCIL requirement.
13	Supply & laying of communication cable 4 core 1 sqmm complete in all respect as per DFCCIL requirement.
14	Supply & fixing of outdoor unit stand for installation of air conditioner's outdoor unit complete in all respect as per DFCCIL requirement.

Technical specification of Lift- (Schedule-I)

Explanatory Notes

1. Site details and drawings required, for supply of material to start the work on the project, will be supplied by DFCCIL at site.
2. Completely enclosed elevator hoist way with all walls duly finished & painted, including lift pit will be made available by DFCCIL.
3. Ventilation on the lift shaft will be provided by DFCCIL.
4. Hoist way doorframe of hoist with required pocket etc. will be provided by Contractor.
5. Required size and length of 3½ cores, aluminium PVC, armoured, cable will be supplied by DFCCIL. Contractor has to lift the cable from DFCCIL store, transport it to site of work and lay the cable between Machine room of the lift to Power room in the Ground floor, through lift shaft GI spacer & GI saddles at a distance of 300 mm shall be supplied and provided by the contractor, cable shall be secured with the help of spacer and saddles in the shaft, cable between lift shaft shall be laid in the cable tray if the cable tray is exist, otherwise, cable has to be laid in the floor of ground floor through class 'B' GI pipe, by cutting the floor and remaking the same to its original condition by the contractor.
6. Metal enclosed TPN-SFU with HRC fuses of sufficient & appropriate rating of DFCCIL approved make, shall be supplied and provided to terminate the above mentioned cable in the machine room by the contractor.
7. Supply of material such as casing capping 1.5 sq. mm flexible, 1100 v grade copper conductor, PVC insulated wire of any ISI marked, DFCCIL approved Make, PVC junction boxes, PVC batten holders/angular holder, earth wire, CFL of 18 W, etc. and sufficient light points shall be provided for lighting in the lift shaft and machine room A separate circuit breaker for this lighting shall be supplied and provided to the machine room by the contractor. All material shall be of DFCCIL approved make.
8. Required ELCB of adequate & appropriate rating/ capacity shall be supplied and provided by the contractor.
9. Electrical Power supply to carry out the erection, testing and commissioning of lifts, contractor has to apply for electrical connection to Sr. Divisional Electrical Engineer, Jaipur office and contractor has to pay the necessary charges OR he may take temporary connection from JVVNL at his own expenditure.
10. Contractor will have to provide scaffolding in the hoist way as per requirement and to remove the same after completion of the assembly work.
11. Hoisting beam in the machine room adequate size of "I" section, ‘C’ section for support of the machine and lift wall divider shall be supplied and provided by the contractor.
12. Duplicate pipe earthing for each individual lift shall be provided by the contractor, duplicate 8 SWG GI wire shall be run along with power cable up to machine room panel, the earth pit and earthing station shall be as specified in Indian Electricity Rules (IE rules).

13. Any item of work whether specifically mentioned in the scope of work or not, but necessary for the completion of work and for proper commissioning of equipment/system as per DCCIL drawing/design/specification shall be deemed to be part of the scope of work. Such item cost shall be borne by the Contractor.
14) The successful tenderer has to make his own arrangements for stores and for shifting of dismantled material and debris.
15) The Bar Chart should be submitted by successful tenderer and to be got approved from DFCCIL Engineer in Charge.
16) A form should be submitted immediately to the lift inspector after receipt of work order. After completion of the work the license should be obtained from Inspector of lifts or as applicable/followed in Jaipur city for lift commissioning.
17) All the incidental requirement of cement, SPS, fasteners etc shall be provided by the Contractor at his own cost.
18) All the claims for payments/invoices of the contractor shall be accompanied by (i) Contractor's challan, Manufacturer's challan, (iii) Test Reports, (iv) Material inspection certificate, (v) Material receipt certificate. No claims for payment shall be entertained without relevant documents specified above.
19. All the material and workmanship shall comply with the provisions of ISS/BSS/ IEC and DFCCIL SPECIFICATONS.
20. All material shall be got inspected by DFCCIL official or his authorised representative.

Detailed specification o lifts

S.N.	Description	Specification
1	DESIG. OF LIFTS	PASSENGER TYPE-GEARLESS MACHINE ROOM TESS
2	QUANTITY	As per schedule
3	CAPCITY	06/13 PASSENGER
4	SPEED	1.0 M/S
5	DRIVE	V3F
6	M/C ROOM LOCATION	MACHIEN ROOM LESS
7	TRAVEL	19.0 M (Approx.)
8	NO. OF STOPS	06 STOPS (5+stilt)
9	SHAFT SIZE AVAILABLE	1950 MM (w) X 2850 MM (D) OR 1950 MM (w) X 1950 MM (D)
10	POWER SUPPLY	415 V-3 PHASE 50 HZ AC

11	AUXILARY	SINGLE PHASE 220 V AC
12	PIT DEPTH	1600MM
13	HEAD ROOM	4200MM
14	CAR CLOSURE	
15	CAR CELING	STAINLESS STEEL
16	CAR OPERATING PANELS	HAIRLINE STAINLESS STEEL BUTTIOSN
17	ILLUMINATION	BRIGHT AND DIFFUSED OR SUBDUED SPOTLIGHT
18	CAR FLOORING	PVC
19	NO. OF ENTRANCE	ONE LOCATION FRONT
20	CAR ENTERANCE	AUTOMATIC CENTER OPENING DOORS IN AS PER STAINLESS STEEL HONEY COMB. FINESH
21	DOOR SAFETY	FULL HEIGHT INFRARED LIGHT CURTAIN
22	LANDING ENTRANCE	AUTOMATIC COPD DOORS IN S.S. HONEY COMB. FINISH
23	CLEAR OPENING	800MM (w) X 2000 MM (H)
24	SKIRTING	HAIRLINE STAINESS STEEL
25	HANDRAIL	ROUND HAIRLINE S.S
26	VENTILATION	CROSS FLOW FAN
27	CONTROL	SELECTIVE (FULL) COLLECTIVE DUPLEX
28	INDICATIORS	SURFACE MOUNTED, MICROPUSH BUTTONS, SEVEN SEGMENT INDICATOR
29	CEILING	STAINLESS STEEL HAIRLINE FINESH

Other features required in the lift are as under:-

a) Direction & position Indicator
b) Emergency alarm
c) 2 phase fire man drive
d) Full height infrared curtain
e) Press and speak intercom
f) VVVF Door operator
g) Emergency light with Be chargeable battery
h) Battery based emergency alarm and intercom
i) Micro movement led base, buttons
j) LWD
k) Automatic Rescue Device (ARD)

The lifts shall conform to following IS standards:-

IS14665: Part 1: 2000:-

Electric traction lift- part-1: guidelines for outline dimensions of passenger, goods, service and hospital lifts.

IS14665: part 2: Sec 1 and 2: 2000:-

Electric traction lift- part-2: code of practice for installation, operation and maintenance- section- 1 passenger and goods lifts- section 2: service lifts.

IS14665: part 3: sec 3 and 2:-

Electric traction left – Part-3: safety rules- section-1 passenger and goods lifts- section-2: service lifts.

IS 14665: part 4: sec 1 to 9: 2001:-

Electric fraction lift- part-4: components- section- 1 lifts buffers- section 2: lift guide rails and guide shoes- section- 3: lift car frame, Car, counterweight and suspension- section 4: lift safety gears and governors- section 5

IS 14665: part 5: 1999:-

Electric- traction lift- specifications-part-5 inspection manual

Technical Specification of Solar Hot Water Plant (Schedule-J)

Evacuated Tube Collector	1) The absorber shall consist of Glass Evacuated Tubes.
	2) The individual tube length should be 1500/1800mm. The inner/outer diameter of the tube should be 47/58mm and the inner diameter should be 37/47mm
	3) The tube should be made of extremely strong transparent borosilicate glass. The inner tube should be coated with a special selective black absorbing coating (AL-N2X/AL-Cy/Al)
	4) There should be vacuum between two glass tubes. A barium getter must be used the two glass tubes.
	5) The tube sealing gaskets fitted with tank should be such that they are capable of withstanding high temperature and should not be susceptible to wear & tear or any leakage.
	6) Nylon cups with suitable support shall be provided for each tube so that any single tube can be removed and refitted at any time.
	7) Specially corrugated plain aluminum reflector for maximum heat collection should be provided at the back of tubes.
	8) Number of tubes (strictly in accordance to MNRE directives) or as for 1000 LPD = 144 Tubes.
Collector & Hot Water tank Support Frame	The structure should be in a position to with stand a wind velocity of 100 Km/hr shall be made with suitable MS angle or pipes section. Vertical support supporting tank and collector shall be firmly grouted with the roof.
Painting of Stand	Proper cleaning and degreasing of the surface should be done before painting. Two coats of zinc chromate red oxide primer shall be applied followed by two coats of enamel paint of suitable colour .Stand can also be powder coated.
Hot water storage Tank & Module Header Material & Insulation	The inner shall be made with 304 For grade Stainless Steel. Outer Cladding with coated steel with 90mm CFC free PUF insulation for 1000 LPD system.

Electrical Back up	The inner shall be fitted with four Nos. 1.5KW 1-1/4" BSP threated electrical element for 1000 LPD system. All electrical element shall be fitted with Thermostat for auto cut-off and 1-meter multi storied heavy duty 3 core electrical wire. Electrical element and thermostat shall be ISI marked.
Cold water Storage Tank with MS stand and associate Piping work	1000 Liters capacity good quality PVC tank to be supplied & erected along with each set of hot water system. These tanks shall be kept at a height of minimum 300 mm above than the hot water storage tank. These tank should be provided with proper stand of suitable size of MS angle iron duly painted. Stand should be fixed properly at site with cement & concrete mixture as required. All necessary piping work to be done by contractor along with accessories required for collecting cold water from railway source and should be done by PE-AL-PE pipe of size 2532 (Inner dia-25mm & Outer dia 32mm) with associate accessories(brass fittings).
Stand Support and Mesh Cover	Stand support should be made of suitable size of powder coated MS angle iron. For protection of tubes mesh cover of suitable size be provided made of 1"X1" powder coated welded mesh.
Safety Features	Each system is provided with pressure relief valve, Air bleeding valve sacrificial anode.
Hardware	All bolts & nuts should be stainless steel.
Spare tubes	Spare tubes to be supplied with each system along with inner tank silicon seals as under:-1000LPD-04 Nos. The following system shall also be installed in solar hot water tank to bypass the tank in the summer season.
Composite pipe & Water Piping	The contractor shall have to supply, install, test & commissioning of Multi-layer-**PE-AL-PE composite pipe** conforming to ASTM F 1282-95/ IS 15450 withstanding pressure up to 25 bar with end brass fittings split rings, cut to required length, nuts and 'O' rings, laid in dry wall chase, ceiling and floor including jointing, making connection to fixtures, equipment and piping with purposes made connectors and along with necessary supports and arrangement. Main Pipe Line: Multi-layer-PE-AL-PE composite pipe size 2532 (Inner dia-25mm & Outer dia 32mm)-Polyethylene HDPE type (UV) pipe with black colour & working temperature of -40°C to

	90°C with all suitable fitting of brass & required associate accessories (brass fittings). Distribution pipe line: Multi-layer-PE-AL-PE composite pipe size 1620 (Inner dia-16mm & Outer dia 20mm)-Polyethylene HDPE type (UV) pipe with black colour & working temperature of -40°C to 90°C with all suitable fitting of brass & required associate accessories (brass fittings).
Water Taps	The contractor shall have to supply install test & commission water Tap of brass chrome plated water taps of size 15mm 400 gram approx. in weight along with accessories.
(E)	Supply & Wrapping of Hot water pipes with 9 mm thick nitrial foam type tube foam for hot water Exposed and Concealed piping raping work including jointing treatment as per DFCCIL requirement.

REFERENCE LIST FOR MAKE OF PRODUCTS

S. N.	Item	*Relevant Standards/ specifications (Latest Ver.)*	Reference Makes
1	Power Transformer	*IS: 2026/1977 -2011 (Part- 1 to 10) and IS: 1180/1989 & IS: 2026/1977 for upto 100 KVA, 11 kV outdoor type transformer.*	Crompton Greaves, NGEF, Kirloskar, BHEL, Bharat Bijlee, Alsthom (Areva), ABB, Siemens, GEC or Similar.
2	11 kV/HT Vacuum Circuit Breaker, SF-6/11kV gas filled Circuit Breaker	*IS: 3427/1997*	GEC, Siemens, Crompton Greave, Alsthom (Areva), Jyoti, ABB, BHEL, L&T, Schneider or Similar.
3	ACB(11kV)	*IS: 13118/1991*	Siemens, L&T, Crompton Greave, Schneider, Jyoti, GEC, ABB, Legrand or Similar.
4	PSS/CSS with HT/LT switch gear, transformer and connected accessories	*IS:11171/1985 for dry type Power transformer*	ABB, Siemens, L&T, Crompton Greave, BHEL, GEC, Kirloskar, Alsthom (Areva), Schneider or Similar.
5	MCCBs, MCBs, ELCBS/ RCCBs, RCBO, DB, ICTPN, TP, HRC fuse, Changing over switch, Fuse Unit	*IS: 8828/1996 for MCB* *IS: 13947(Part-1)/1993 & part 5/Sec1)/2004 for MCCB* *IS: 12640/2008(Part-1) for RCCB & (Part-2) for RCBO.* *IS: 13703/1993 for LV HRC fuse* *IS: 13947(Part-3)/1993 for SFU*	L&T, Crompton Greave, Siemens, Legrand, Jyoti, GEC, BCH, Schneider, ABB or Similar.
6	XLPE Cable 11/33kV grade	*IS:7098(Part-2)/2011*	Asian, NICCO, Universal, RPG, CCI, Fort Gloster, INCAB or Similar.

7	PVC/XLPE Power Cables up to 1.1kV grade	*IS: 694/2010 for PVC cable,* *IS: 1554(Part-1&2)/1988 for heavy duty PVC cable,* *IS:7098(Part-1)/1988 for XLPE cable*	CCI, Universal Cable, RPG, NICCO, Asian, Fort Gloster, Finolex, INCAB or Similar.
8	Instrument Voltmeter, Ammeter, PF meter	*IS:1248/2003 for Analog,* *IS:13875/2008 for digital*	Automatic Electric, Meco, Industrial Meter, Motwani, Toshniwal, L&T, Siemens or Similar.
9	11kV Cable End Termination & Jointing kits	*IS: 13573/1992* *Part-1,2&3/2011*	Raychem, M-Seal, Xicon brand of CCI, 3M, Densons (Yamuna) or Similar.
10	Relays	*IS: 3231(Part-0&1)/1986 (Part-2&3)/1987*	Siemens, L&T, Alsthom, ABB, BHEL, Jyoti, GE or Similar.
11	LED Luminaries, MH, HPSV, T-5 fittings, CFL, & related accessories	*IS: 9974(Part-1)/1981 for HPSV* *IS:15111/2002 for CFL*	Phillips, Crompton, Bajaj, GE, Osram, Wipro or Similar.
12	PVC insulated Elect. Wires Sheathed/ unsheathed, PVC flexible LT cable, multicore, single core, Flat cable for submersible pumps	*IS: 694/2010 for PVC cable*	Finolex, Asian, Fort Gloster, CCI, NICCO, Universal, RPG, INCAB or Similar.
13	Current Transformer	*IS: 2705/1992*	Automatic Electric, CGL, MECO, Siemens, L&T, Schneider or Similar.

14	On line UPS, Servo Stabilizer, Inverter, CVT	*IS:13314/1992 for Inverter* *IS:11260/1985 for voltage Stabilizer*	AEI, BHEL, Hind Rectifier, L&T, NGEF, Siemens, Autometer, Pyramid, APC, Luminous, Microtech, TATA Libert or Similar.
15	Rotary Switches. Selector Switches	*Relevant IS*	Kaycee, L&T, GE, ABB, Siemens, or Similar.
16	Exhaust fan/Air Circulator/ Bracket & Pedestal fans/Ceiling fan	*IS: 374/1979 for ceiling fan* *IS: 2312/1967 for Exhaust fan*	Crompton, GEC, Usha, Philips, Bajaj, Polar, Orient or Similar.
17	Galvanized High Mast Tower / Tubular pole/ Octagonal pole for general purpose lighting	*IS:875(Part-3)/1987 for High mast Structure,* *BSTN-10025/1993 for High Mast Shaft,* *IS:2026 for other component* *IS: 2629/1985,* *BSEN ISO- 1461 for Galvanization*	Bajaj, Philips, GE, CGL or Similar.
18	Electronic Energy Meter	*IS:13779/1999* *IEC:62053-21*	L&T, IMP, HPL, Secure, ABB, Enercon or Similar.
19	Central Air Conditioning Plants & Package type plant	*IS: 8148/2003 for package type.* *IS: 1391/1992 for Room Air Conditioners.*	Voltas, Blue Star, Carrier, Hitachi, O General, Mitsubishi or Similar.
20	Capacitors- PF correction for Electrical General Services	*IS:13340/1993* *IS:13341/1992*	ABB, BHEL, Unistar, WS Insulators, L&T, Hind Rectifier, Voltas, Siemens, Schneider, or Similar.
21	DG Sets- Portable	*IS: 13364(Part-1)/1992 for Alternator* *IS:10001/1981 for Diesel Engine*	Birla Yamaha, CGL, Shriram Honda or Similar.

22	DG Engine	*IS:13364/1992 For Alternator*	Cummins, Kirloskar, Wartsila, Caterpillar, Ashok Leyland or Similar.
23	Alternator for DG set	*IS:4722/2001* *IS:4728/1975*	KEC, CGL, Stamford, Kirloskar-Green or Similar.
24	Induction Motor	*IS:325/1996* *IS:12615/2011*	Bharat Bijlee, BHEL, CGL, GE, Jyoti, Kirloskar, Siemens, ABB, ASHIKA, NGEF, Alsthom or Similar.
25	LT Switchgear & control gears- Contactors & motor starters, Energy Efficient Soft Starter panel/ Earthing Switch, Single phase preventer	*IS:13947(Part1)/1993* *IS:13947(Part4)/1993* *IS:13947 (Part-5)/2004*	ABB, CGL, Jyoti, L&T, NGEF, Siemens, Legrand (MDS), BCH, Standard, GEC, BHEL, Schneider or Similar.
26	Pumps- Submersible	*IS: 8034/2002 for submersible pump sets IS: 9283/1995 for motors of submersible pump sets IS: 14220/1994 for open well submersible pump sets*	Calama, CGL, Jyoti, Kirloskar, KSB or Similar.
27	Timers- electronic solid state	*IEC: 60947(2004)*	ABB, BHEL, GE, Jyoti, L&T, BCH, Siemens, Legrand or Similar.
28	Water Coolers	*IS: 1475 Part-1/2001* *IS:1475/2005*	Blue Star, Kelvinator, Shriram, Voltas or Similar.
29	Electrical accessories (Piano switch, Plugs & sockets, ceiling rose, Angle holder, holders, Modular switch and socket)	*IS: 3854/1997 for switches* *IS: 1293/2005 for plugs& sockets* *IS: 371/1999 for ceiling rose* *IS: 1258/2005 for lamp holder Bakelite*	SSK (Top line), Anchor (Penta-ornet), Precision (Prime), CONA (Nice-Indian), Legrand, ABB or Similar.

30	Bell Buzzer	*IS:2268/1994 or latest*	CONA, MAX, Anchor, SSK or Similar.
31	Electronic fan regulator	*IS:11037/1984*	Anchor, Usha, ERIK, Leader or Similar.
32	Solar cell/Module system	*IS: 12834/1989* *IEC 61215/2005* *IEC 60904-2006*	TATA BP, BEL, BHEL, REIL, MOSER BEAR, CEL or Similar.
33	Solar Lighting system	*RDSO/PE/SPEC/PS/0093-2008, Rev. 'O' – Amendment '1'*	-----
34	GI/MS Pipe	*IS: 1239(Part-1)/1990*	TATA, Jindal, Prakash, Surya or Similar.
35	Geysers	*IS:2082/1993*	Bajaj, Usha, Crompton, Recold, Venus or Similar.
36	Lifts & Escalators	*IS-14665/2000 for Lift* *RDSO/2013/EM/SPEC/0016 Rev (0) for Lift (Elevator)* *RDSO/PE/SPEC/TL/0095-2008 Rev (0) for Escalator*	OTIS, ThyssenKrupp, Shindler, KONE, Mitsubishi or Similar.
37	LEDs	*IS: 16101-2012,IS: 16102-2012 Part-1,2 IS: 16103-2012*	PHILLIPS, NICHIA, LUMILIDE, AVAGO, SEOL SEMICONDUCTOR, OSRAM, GE or Similar.
38	Solar Water Heaters	*RDSO/PE/SPEC/PS/0094-2008 Rev '0'*	As per MNRE approved sources.
39	Solar Distilled Water Plants	*Relevant IS*	As per MNRE approved sources.
40	Energy savers used for lighting loads	*RDSO/PE/SPEC/PS/0083-2008 Rev. '0'*	As per MNRE approved sources.

41	Air Cooling Plants	*Relevant IS for its concern equipment's*	Voltas, Blue Star, Carrier or Similar.
42	Battery Charger for other than battery room for Train Lighting	*IS:2026/2011-power transformer* *IS:3895/1966* *IS:3136/1965* *IS:4540/1968*	Hind Rectifier, Usha Rectifier, Suresh Electrical, Pyramid, Automatic Electric, Trinity Elect., Universal Ind. Products, Venus Engg., RS Power or Similar.
43	Battery Charger for battery room	*As per RDSO specification having re-generation facility*	Amar Raja, Exide, RS Power or Similar.
44	PVC Conduit pipe & Casing capping for electrical wiring	*IS:9537/2000*	Precision, A.K.G., Polycab, Finolex, Prestoplast or Similar.
45	Aluminium Ladders	*IS:4571/1977*	Sumer, Beatfire or Similar.
46	LT Panels	*IS: 2147-1952 IS:2675-1966*	
47	Air Curtain	*Relevant IS*	Aircon, ALMONARD, Technocrate, Thermadyne, Mitzwak or Similar.

ADDITIONAL TECHNICAL SPECIFICATION

PART - III
ADDITIONAL TECHNICAL SPECIFICATIONS

1.1.1. The work is to be executed as per the direction of Engineer in charge. Item to be operated shall be 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 the rates.

1.2. All construction materials to be used in the work shall be as per relevant IS specification wherever applicable.

1.3. Mixers of approved design shall be used for mixing cement concrete. Form surface vibrators of approved design and quality shall be used for the compaction of the same in RCC/CC work.

1.4 Specifications for the works given in the items of USSOR 2010 of NWR shall be followed. The standard specifications (works & material) received from NWR HQ Part I & II printed in the year 2010 shall be followed.

1.5. The rates quoted by the contractor shall be deemed to be inclusive of all taxes, royalties, octroi etc. (Including GST)

1.6. 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 railway/DFCCIL property on account of contractor's negligence shall be made good at contractor's cost.

1.7. In case any ambiguity between special conditions and general standard condition, special conditions shall prevail.

1.8. Contractor shall be responsible for the safety of his labour, machinery deployed on the work.

1.9 Contractor will be responsible for the safety of DFCC and railway property.

1.10 Contractor has to make all the safety arrangements and provide boards and banners of "work in progress" etc. and safety strips of sufficient length to make aware the Passengers and other users. No extra payment for the same shall be made.

1.11 During the currency of the contract any correction slip related with the items of USSOR 2010 of NWR is issued, the contractor shall be bound to accept the same. No extra claim what so ever shall be admissible in such cases.

1.12 All the tests required during the execution of USSOR 2010 items shall be got done by the contractor from Govt. laboratory or any other reputed private lab for which testing charges shall be borne by the contractor. No extra claim of payment whatsoever shall be admissible for such tests.

1.13 Work to be done in a very efficient manner and up to the entire satisfaction of Engineer in charge. Any defect pointed out by Engineer in charge shall immediately be rectified by the contractor without any extra cost.

2. Further Drawing and Instructions:

(i) General Manager/Co, 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 General Manager/Co, DFCCIL have given an extra order for the same in writing. The contractor shall be responsible for close scrutiny of the drawings.

(ii) 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.

(iii)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.

(iv) The contractor shall submit the detailed design and drawing of structure duly prepared by structural engineer with CAD file prior to start of the work. For this work nothing extra shall be paid to the contractor.

3. 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.

4 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.

5 Any Doubted Points to be referred to the General Manager/Co, 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 General Manager/Co, DFCCIL. Only such reply as the said General Manager/Co, DFCCIL may be in writing given shall be taken as the authoritative interpretation of the point in doubt or obscurity.

6 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.

7 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.

8 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 equipment's which cannot 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.

9 Site Facilities by the Contractor:

Contractor shall provide office / site facilities at the approach 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.

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.

10 SAFE WORKING METHODS:

10.1 All or some of the works executed under this contract involve works on or alongside the Railway /DFCCIL track on which the railway/DFCCIL traffic is kept operative during or immediately after the completion of one or more phases of the contract work. In view of this position maintaining safe working conditions at the work site at all times for the safe passage of the train traffic is a primary over-riding condition required to be fulfilled by the contractor at all times.

10.2 For this purpose, it is understood and agreed to by the contractor that the work executed by him under this contract shall at all times fulfill all the safety conditions in force on the railway from time to time to operate the train traffic.

11. PROTECTION OF THE WORK SITE

11.1 On railway track where the train traffic will be operational during the execution of the contract work the protection of the works site as considered appropriate and adequate shall be arranged by the Engineer's Representative at the Railway's cost.

11.2 Contractor shall be responsible for providing appropriate and adequate system for warning the contractor's workmen about the train traffic on or in the vicinity of the site of work

11.3 The contractor shall remain fully responsible for ensuring safety & in case of any accident, shall bear cost of all damages to the equipment & men and also damages to railway & its passengers.

MILESTONES AND TIME SCHEDULE

PART-IV
CHAPTER - I
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 8 (Eight) months from the date of issue of letter of acceptance from DFCCIL.

The contractor shall be expected to mobilize to the site of works and commence execution of the works within 15 (days) from issue of Acceptance Letter by DFCCIL.

The contractor shall be expected to complete the whole work ordered on the contractor within 8 (Eight) months from the date of issue of Acceptance Letter by DFCCIL.

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 8 (Eight) 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 8 (Eight) 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.

Milestone Targets	**Time allocated within which to achieve completion in total 08** (Eight) **month time**
(a) Physical commencement of work	D + 10 days
(b) Mobilization of equipments	D + 15 days
(c) Full mobilization of plant , machinery, men and material	D + 20 days
(d) Construction of crew running room	D+20 to D+210 days

Note:"D" is the date of issue of Letter of Acceptance by DFCCIL to the contactor.

TENDER FORMS (INCLUDING SCHEDULE OF PRICES)

PART- IV

CHAPTER II

TENDER FORMS

FORM No.	SUBJECT
Form No. 1	Offer Letter
Form No. 2	Tenderer's Credentials
Form No. 2A	Technical Eligibility Criteria Details
Form No. 2B	Financial Eligibility Criteria Details
Form No. 2C	Applicant's Party Information Form
Form No. 3	Summary of Prices
Form No. 4	Schedule of Prices and Total Prices
Form No. 5	Contract Agreement
Form No. 6	Performance Guarantee Bond
Form No. 7	Standing indemnity bond for on account payment.
Form No. 8	ECS / NEFT / RTGS
Form No. 9	Draft MOU for Joint Venture Participation
Form No.10	Draft Agreement for JV
Form No.11	Pro-forma of Participation from each partner of JV
Form No.12	Power of Attorney for authorized signatory of JV Partners
Form No.13	Power of Attorney to lead partner of JV
Form No. 14	Performa for Time Extension
Form No. 15	Certificate of Fitness
Form No. 16	Performa of 7 days' Notice
Form No. 17	Performa of 48 Hours' Notice
Form No. 18	Performa of Termination Notice
Form No. 19	Format of Bank Guarantee for Mobilisation
Form No. 20	Format of Integrity Pact
Form No. 21	Anti-profiteering

FORM No. 1

OFFER LETTER

Tender JP/EN/RE-RGS/WC/Crew Running Room/New Ateli

Name of work - Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway.

To,

General Manager/Co,
DFCCIL, Jaipur

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Documents, including Addenda.
(b) We offer to execute the Works in conformity with the Bidding Documents;
(c) Our bid shall be valid for a period of 90 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
(d) We have not been blacklisted/banned in accordance with para.1.3.13 (ii) (v) (a) of Preamble and General Instructions to tenderers.
(e) We are neither Bankrupt/Insolvent nor in the process of winding-up nor there is a case pending before any Court on deadline of submission of the Bid in accordance with para. 1.3.13 (ii) (v) (b) of Preamble and General Instructions to tenderers.
(f) If our bid is accepted, we commit to obtain a Performance Guarantee in accordance with the Bidding Documents;
(g) If our bid is accepted, we commit to deploy key equipment and key personnel consistent with the requirements of the work.
(h) We understand that this bid, together with your written acceptance thereof included in your notification of award/Letter of Acceptance (LOA), shall constitute a binding contract between us, until a formal contract is prepared and executed; and
(i) All information, statements and description in this bid are in all respect true, correct and complete to the best of our knowledge and belief and we have not made any tampering or changes in the bidding documents on which the bid is being submitted and if any tampering or changes/incorrect information are detected at any stage, we understand the bid will invite summarily rejection and forfeiture of bid security, the contract will be liable to be terminated along with forfeiture of performance security, even if LOA has been issued.

(j) We understand that you are not bound to accept the lowest bid or any other bid that you may receive.

Name .....
In the capacity of .....
Signed .....
Duly authorized to sign the Bid for and on behalf of .....
Date .....

FORM No. 2

TENDERER'S CREDENTIALS

S. No	Description
1.	For technical experience/competence, give details of similar completed works during the last three financial years (i.e. current Financial year and three previous Financial Years) in the Performa given in Form-2A
2.	For financial capacity and organizational resources, give details of contractual payments received for the last three financial years (i.e. current Financial year and three previous financial years) as per audited balance sheet certified by Chartered Accountant in the Performa given in Form-2B
3.	Give constitution of your firm. Attach certified copies of legal documents in support thereof. Form-2C

FORM No. 2A

TECHNICAL ELIGIBILITY CRITERIA DETAILS
Details of the similar works completed (as per Para 1.3.13 (i) of Preamble and General Instructions to Tenderers)

Similar Contract No.		
Contract Identification		
Award date		
Completion date		
Role in Contract	Prime Contractor ☐	Member in JV ☐
Total Contract Amount (Rs.)		
If member in a JV , specify participation in total Contract amount	*[insert a percentage amount]*	*Total contract amount in Rs.*
Employer's Name: Address: Telephone/fax number E-mail:		
Description of the similarity in accordance with Criteria 1.3.13(i)(A)		

The bidder shall attach certified completion certificates issued by the client duly attested by Notary as per Eligibility Criteria of the tender documents.

Signature of the
Tenderer with Seal

FORM No. 2B

FINANCIAL ELIGIBILITY CRITERIA DETAILS

Each Bidder or each member of JV must fill in this form separately. Name of Bidder/JV Partner

Details of contractual payments received during the last three financial years and current financial year

Contractual payments received	
Year	Value of payment received in Rs. (Contract Receipts)
Current Year(2019-2020)	
2018 – 2019	
2017 – 2018	
2016 - 2017	
Total Contractual Payment	

Note: The details should be extracted from the audited balance sheet Certified by the Chartered Accountant or form 16-A issued by the Employer as per clause 1.3.13 of Preamble and General Instructions to Tenderers.

The bidder shall attach necessary documents in support of the above.

Signature of the
Tenderer with Seal

FORM No. 2C

APPLICANT'S PARTY INFORMATION FORM

Applicant name: *[insert full name]*
Applicant's Party name: *[insert full name of Applicant's Party]*
Applicant's Party country of registration: *[indicate country of registration]*
Applicant Party's year of constitution: *[indicate year of constitution]*
Applicant Party's legal address in country of constitution: *[insert street/ number/ town or city/ country]*
Applicant Party's authorized representative information Name: *[insert full name]* Address: *[insert street/ number/ town or city/ country]* Telephone/Fax numbers: *[insert telephone/fax numbers, including country and city codes]* E-mail address: *[indicate e-mail address]*
1. Attached are copies of original documents of □ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above. □ In case of a Government-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and absence of dependent status. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Signature of the
Tenderer with Seal

FORM No. 3

SUMMARY OF PRICES

Name of work:- Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway.

Sl. No.	Description of works	Amount of Schedule (Rs.) (updated DFCCIL Rate / cost)	Rates to be quoted in figures & words (Clearly mention above / below / at par on updated DFCCIL Rate / cost given in column 3)
1	2	3	4
1.	Execution of all works as per Schedule "A, B, C,D,E,F,G,H, I & J"	Rs. 10,81,18,299/-	..... % above/at par/below (in figures) ..... % above/at par /below (In words)

*** Contractor should bear the fact in mind while quoting the rates that GST will be paid by Contractor as per prevailing rate for further deposition of GST to State Govt. and/or Central Govt.** as applicable. Documentary evidence of deposition of GST will be produced by contractor.

Notes:

(i) The above prices are inclusive of all taxes, duties, levies, etc. **Including GST**.

a) **GST** as applicable from time to time on taxable value of each running account bill **shall be paid by Contractor for further deposition of GST to State Govt. and/or Central Govt.** as applicable. Documentary evidence of deposition of GST will be produced by contractor.

b) 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.

(ii) The tenderer should quote single percentage above / at par / below for each schedule.

(iii) If the uniform percentage quoted by the Tenderer does not clearly indicate whether the rates are above/at par/below the estimated rates then through sign convention it will be considered to be on plus side and evaluated accordingly

FORM No. 4

SCHEDULE OF PRICES & TOTAL PRICES

TENDER SCHEDULE

Name of work: New Ateli - Construction of Crew RUNNING ROOM

General Civil Work (Schedule-A)

S.N	ITEM	DESCRIPTION OF ITEM	UNIT	RATE	Qty.	Amount
	011010	Earth work in excavation as per approved drawings and dumping at embankment site or spoil heap, within railway land, including 50m lead and 1.5m lift, the lead to be measured from the centre of gravity of excavation to centre of gravity of spoil heap: the lift to be measured from natural ground level and paid for in layers of 1.5m each, including incidental work, as per specifications-in				
1	011011	All kinds of soils	Cum	95.85	2500.00	239625
	011050	Extra for lead of earth work above initial lead of 50m, in all kind of soils and rocks				
2	011051	For every 50m or part thereof-lead over 50m and upto 150m	Cum	11.79	2400.00	28296
3	011052	For every 50m or part thereof-lead over 150m and upto 500m	Cum	10.10	2400.00	24240
4	011070	Extra for every additional lift of 1.5m or part thereof, after the initial 1.5m for earth work in all soils	Cum	8.85	400.00	3540
5	012010	Extra over item 011010 for excavation in foundations for buildings and bridges to cover dressing to neat dimension and plumbing sides etc. Note:- Dressing under this item is payable for the total quantity of excavation in foundation and not partly	Cum	10.10	2500.00	25250

6	012040	Filling, watering and ramming earth in 15 cm layers in floors and foundations with surplus earth from foundations including 50m lead and 1.5m lift	Cum	21.90	2500.00	54750
	031010	Providing and laying in position cement concrete of specified proportion excluding cost of cement, centering and shuttering - All works upto Plinth level :				
7	031011	1:3:6 (1 cement : 3 sand : 6 graded stone aggregate 20mm nominal size)	Cum	1467.94	542.00	795623
	031020	Providing and laying cement concrete, up to plinth in retaining walls, walls (any thickness) including attached plasters, columns, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets etc., excluding the cost of cement and of shuttering centering				
8	031023	1:2:4 (1 cement : 2 sand : 4 graded stone aggregate 20mm nominal size)	Cum	1682.52	31	52158
	041010	Providing and laying in position M 20 Grade concrete for reinforced concrete structural elements but excluding cost of centering, shuttering, reinforcement and Admixtures in recommended proportion (as per IS:9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer in charge.				
9	041011	All work upto plinth level, including raft foundation of washable aprons, HS tank, pile cap, footings of FOB, and Platform shelter etc.	Cum	1836.48	338.00	620730

10	041012	All work in buildings above plinth level upto floor two level	Cum	2047.43	1400	2866402
	042010	Centering and shuttering including strutting, propping etc. and removal of form for :				
11	042011	Foundations, footings, bases of columns, raft foundation of washable aprons, Pile caps, Footings of FOB etc.	Sqm	127.50	380.00	48450
12	042012	Walls (any thickness) including attached plasters, buttresses, plinth and string courses etc.	Sqm	232.60	520.00	120952
13	042013	Suspended floors, roofs, landings, balconies, FOB slabs, walkway slabs and access platform	Sqm	237.02	4250.00	1007335
14	042014	Lintels, beams, plinth beams, bed blocks, girders, bressumers and cantilevers	Sqm	201.17	2250.00	452633
15	042015	Columns, pillars, , posts and struts	Sqm	282.10	2190.00	617799
16	046010	Extra for RCC work in superstructure above floor two level for every floor or part thereof.	Cum	237.26	700	166079
	051010	Brick work with non-modular (FPS) bricks of class designation 7.5 in foundation and plinth in :				
17	051018	Cement mortar 1:6 (1 cement : 6 coarse sand)	Cum	2150.23	420.00	903097

	55070	Brickwork with clay fly ash FPS bricks of class designation 75 in superstructure above plinth level up to floor two level in				
18	55075	Cement mortar 1:4 (1 cement : 4 coarse sand)	Cum.	2304.45	1400.00	3226230
19	171190	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of WC, kitchen and the like consisting of : (i) 1st course of cement slurry @ 4.4kg/ sqm mixed with water proofing compound conforming to IS: 2645 in recommended proportions incl. rounding of junction of vertical and horizontal surfaces. (ii) 2nd course of 20mm cement plaster 1:3 (1cement: 3coarse sand) mixed with water proofing compound (iii) 3rd course of blown or residual bitumen applied hot @ 1.7kg/ sqm & (iv) 4th course of 400micron thick PVC sheet with 100mm wide overlaps at joints pasted to each other with bitumen @ 1.7kg/ sqm.	Sqm	100.00	440.00	44000
20	171230	Providing and laying integral cement based water proofing treatment incl. preparation of surface on roofs, balconies, terraces etc. (i) Grouting a slurry coat of neat cement @ 2.75kg/ sqm mixed with water proofing compound conforming to IS: 2645 inc. wall mixed with water proofing compound over 20mm thick layer of cement mortar of 1:5 mortar mixed with water proofing compound to required slope, treating adjoining walls upto 300mm height, rounding of junctions. (iii) Curing for 2 days & applyin	Sqm	446.11	620.00	276588

21	171250	Water proofing of Overhead & Underground water tank by : Providing and fixing 12mm N.B.M.S. threaded nozzle of 75mm length upto reqd. depth in an approximate grid pattern at a spacing not exceeding 1.5m c/c on entire flooring, walls etc. followed by inje	Sqm	343.51	410.00	140839
22	171690	Providing & applying Pre-Construction Anti-Termite treatment to proposed structure, with application of Imidacloprid 30.5% SC @ o.075% concentration mixed with water in ratio of 1:475, as per detailed specifications given in Indian Railways Standard Spec	Sqm	76.70	1450.00	111212
	071010	Providing wood work in frames of doors, windows, clerestory windows and other frames and trusses, wrought, framed and fixed in position :				
23	071012	Sal wood	cudm	47.25	8000	378000
	072140	Providing and fixing to IS: 2202 Part-1 marked flush door shutter decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3ply veneering with vertical grains or cross bands and face veneers on both faces				
24	072141	35mm thick including ISI marked stainless steel butt hinges with necessary screws	Sqm	1752.61	300	525783

25	073030	Providing and fixing 25mm thick cup board shutters, with prelaminated flat pressed 3 layer particle board conforming to IS 12823-Grade I, having one side decorative lamination of approved shade and other side balancing lamination including second class teak wood lipping 25x12mm thick with necessary screws and nickel plated bright finished MS piano hinges complete.	Sqm	2088.85	85	177552
	074050	Providing and fixing prelaminated particle board with one side decorative & other side balancing lamination Grade-I, type-II IS 12823 marked in shelves with screws and M.S. or aluminium brackets wherever required, edges to be painted with polyurethene primer (bracket to be paid separately)				
26	074051	18mm thick	Sqm	923.08	40	36923
27	074052	25mm thick	Sqm	1020.04	40	40802
	074220	Providing and fixing nickel plated M/S. pipe curtain rods with nickel plated brackets				
28	074221	20 mm dia (heavy type)	metre	101.66	150	15249
29	074280	Providing 40x5mm flat iron hold fast 40cm long including fixing to frame with 10mm diameter bolts, nuts and wooden plugs and embeddings in cement concrete block 30x10x15cm 1:3:6 mix (1cement: 3coarse sand: 6graded stone aggregate 20mm nominal size)	Each	66.33	2706	179489
	077050	Providing and fixing bright finished brass sliding doors bolts - with screws etc. complete of size				
30	077052	250x16mm	Each	215.00	271	58265

	077060	Providing and fixing bright finished brass tower bolts (barrel type) with necessary screws etc. complete				
31	077062	200x10mm	Each	206.20	201	41446
	077070	Providing and fixing bright finished brass handles - with screws etc. complete - of size				
32	077071	125 mm	Each	135.93	402	54644
33	077090	Providing and fixing bright finished brass 100mm mortice latch and lock with 6 levers and a pair of lever handles with necessary screws etc. complete (best make of approved quality)	Each	586.14	141	82646
34	077140	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws etc. complete	Each	60.77	201	12215
	077190	Providing and fixing IS: 3564 marked aluminium extruded section body tubular type universal hydraulic door closer with double speed adjustment with necessary accessories and screws etc. complete				
35	077191	Hardwyn make (Eddy) or equivalent	Each	1116.57	191	213265
36	078160	Supplying, providing and fixing white colour sliding uPVC window complete, consisting of uPVC frame of size 80mm x 52mm and uPVC shutter of size 54mmx38mm with 1.2mm thick GI section reinforcement wherever required, produced by ISO 9001:2000 and ISO 14001:2004 certified company. Window shutter will consist either of 5mm thick float glass or galvanised wire gauge alongwith complete fittings, e.g. pulley/rollers, transmission gear and handle for operating window	Sqm.	5525.84	437.00	2414792

37	078180	Supplying, providing and fixing white colour sliding uPVC Door complete, consisting of uPVC frame of size 95mm x 60mm and uPVC shutter of size 66mmx42mm with 1.2mm thick GI section reinforcement wherever required, produced by ISO 9001:2000 and ISO 14001:2004 certified company. Door shutter will consist either of 5mm thick float glass or galvanised wire gauge alongwith complete fittings, e.g. pulley/rollers, transmission gear and handle for operating window	Sqm.	5985.35	110.00	658389
	081010	Structural steel work in single section including cutting, bending, straightening, drilling, rivetting, bolting, hoisting, fixing in position, including applying a priming coat of approved steel primer, complete - upto 6m height above GL				
38	081011	In RSJ, tees, angles and channels	Kg	58.15	3000.00	174450
39	081012	In flats, plates, round or square bars	Kg	58.08	8000.00	464640
40	081350	Providing and fixing circular/ hexagonal M.S. sheet ceiling fan box with clamps of internal dia 140mm, 73mm height, 3mm thick rim, top and bottom lid of 1.5mm M.S. sheet. Lids shall be screws into M.S. box by means of 3mm round beaded screws, clamps shall	Each	91.21	100	9121

41	083050	Fabricating, supplying & installing stainless steel railings for staircases, balconies, FOBs, Enquiry/Reservation complex etc., made of SS 304 grade stainless steel, laser cut / water jet cut (no shearing), polished with Automatic round/flat polishing machine to get a uniform hairline finish. All parts shall be connected to each other with the help of prescribed size CNC made solid connectors, countersunk screws. Welding should be finished ensuring that no welding marks are visible and assembly is mounted on floor with the help of dash fasteners. Railings shall be fabricated as per approved drawings by engineer-in-charge. Manufacturer shall submit maintenance manual and basic material test report for grade certification.	Kg.	623.73	1825.00	1138307
	094030	Precast factory made terrazzo tiles 22mm thick with graded marble chips of size upto 12mm in walls, skirting and risers of steps on 12mm thick cement plaster 1:3 (1cement: 3coarse sand) jointed with neat cement slurry mixed with pigment to match the shade				
42	094031	With ordinary cement without any pigment	Sqm	412.44	670.00	276335
	095010	Providing and fixing Ist quality ceramic tiles conforming to Group B-III (Ceramic Wall Tiles) of IS:15622 of manufacturers approved by railway in all colours, shades, and design as approved by the Engineer-in-Charge in skirting, dado				
43	095013	300x450 mm and above	Sqm	675.41	1200.00	810492

	095020	Providing and fixing ceramic tiles conforming to IS:15622 of manufacturers approved by railway in all colours, shades, design and abrasion resistance class as approved by the Engineer-in-Charge **in floors** over 20mm thick bed of cement mortar 1				
44	095021	Of Group B-II Clause 5.1 (for abrasion resistance) of IS:15622 (Ceramic Floor Tiles) of size 300x300mm	Sqm	490.92	360.00	176731
45	095026	Of Group B-I-a of IS : 15622 (Vitrified tiles) of size above 400x400mm upto 600x600 mm	Sqm	776.65	2600.00	2019290
	098020	Supplying and laying interlocking pre-cast CC block pavers of approved design factory manufactured of specified grade cement concrete on passenger platform, foot paths, circulating area, etc. including setting in position over 25mm thick bedding layer of fine sand, filling the joints with fine sand, leveling including compaction as per IS 15658				
46	098022	80mm thick blocks of M35 grade for medium traffic	Sqm	421.57	1930.00	813630
47	098090	Laying 80 mm thick oversized stone ballast 75 mm to 100 mm gauge in soling of floors, hand packed including hand packing, filling voids with sand and watering, ramming and leveling	Sqm	92.64	131.17	12152
	099030	Providing and fixing 18mm thick mirror polished, machine cut for kitchen platforms, vanity counters facias, dados and skirtings and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1cem				
48	099034	Granite Black. Area of slab over 0.5 Sqm but upto 1.0 Sqm	Sqm	2363.56	38.01	89834

	099180	Providing and fixing 25mm thick flame cut/machine cut for floors /stairs and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1cement: 4coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touchups, including rubbing, curing etc. complete at all levels				
49	099183	Granite Pink - Area of slab over 0.2 Sqm but upto 0.5 Sqm	Sqm	2603.10	131.00	341006
50	099185	Granite Pink - Area of slab over 1.0 Sqm but upto 2.0 Sqm Or larger	Sqm	2714.51	210.00	570047
51	106100	Providing and fixing at all height false ceiling of 12.5mm thick tapered edge gypsum board conforming to IS 2095-part-I, including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised with zinc coating of grade 350 as per IS : 277 and consisting of angle cleats of size 25mm x 1.6mm with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with stener 12.5mm dia x 40mm long with 600 dia bolts to the angle hangers of 25x25x0.55mm of required length and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to GI channel with connecting clips made out of 2.64mm dia x230mm long GI wire at every junction including fixing the	sqm	638.42	3000	1915260

		gypsum board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the gypsum board with recommended filler, paper tapes, finisher and two coats of primer suitable for gypsum board as per manufacturers specification and also including the cost of making openings for light fittings, grills, diffusers cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer-in-charge but excluding the cost of painting				
	108160	Providing and fixing on wall face unplasticised - Rigid PVC single socketed rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion.				
52	108162	110mm dia.	Metre	182.18	300	54654
	108170	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised- Rigid PVC rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion.				
53	108172	Coupler, 110mm	Each	139.90	30	4197

	108180	Providing and fixing on wall face unplasticised - PVC moulded bend and shoe for unplasticised- Rigid PVC rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion				
54	108182	Bend 87.5^{o}, 110mm dia bend	Each	160.41	20	3208
	108190	Providing and fixing unplasticised- PVC pipe clips of approved design to unplasticised- PVC rain water pipes by means of 50x50x50mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1cement: 4coarse sand) and making good the wall etc. complete				
55	108192	110mm	Each	133.74	110	14711
56	108200	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15cm dia and weighing not less than 440 grams	Each	48.97	25	1224
57	109090	Treatment of expansion joints by cleaning the joint and surfaces abutting the expansion joint, applying two coats of primer on the cleaned surfaces at the opening of the joint, filling the joint (to a depth equaling half the width) with the paste of a two	metre	929.00	42	39018
	111020	15 mm cement plaster on the rough side of single or half brick wall of mix -				
58	111022	1:6 (1cement: 6 fine sand)	Sqm	71.22	8190.00	583292
	111030	20 mm cement plaster of mix -				
59	111032	1:6 (1cement: 6fine sand)	Sqm	83.31	4300.00	358233
	111150	Cement plaster to ceiling of mix -				
60	111151	6 mm thick 1:3 (1cement: 3 fine sand)	Sqm	54.50	3700.00	201650

61	112040	Providing and applying plaster of Paris putty of 2mm average thickness over plastered surface to prepare the surface even and smooth complete	sqm	78.33	16190	1268163
62	115150	Finishing walls with Acrylic Smooth exterior paint with Silicone additives of required shade on new work (Two or more coats applied @ 1.67ltr/10 sqm over and including one coat of water proofing cement paint applied @ 2.20 kg/10sqm	Sqm	82.15	3270.00	268631
63	115190	Finishing walls with Premium Acrylic Smooth Interior paint with Silicone additives of required shade on new work (Two or more coats applied @ 1.43ltr/10 sqm over and including one coat of water proofing cement paint applied @ 2.20 kg/10sqm	sqm	81.61	12920	1054401
	131130	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc. Internal work – Exposed on wall				0
64	131131	15 mm dia. nominal bore	Metre	139.25	1000	139250
65	131133	25 mm dia. nominal bore	Metre	233.33	600	139998
66	131136	50 mm dia. nominal bore	Metre	427.33	500	213665
	131150	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. External Work				
67	131153	25 mm dia. nominal bore	Metre	215.80	300	64740
68	131156	50 mm dia. nominal bore	Metre	372.53	500	186265
69	131159	100 mm dia. nominal bore	Metre	725.03	200	145006
	132030	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)				
70	132031	25 mm nominal bore	Each	344.38	100	34438
71	132034	50 mm nominal bore	Each	731.16	40	29246

72	132037	100 mm nominal bore	Each	1794.23	10	17942
	136140	Providing and fixing G.I. Union in existing G.I. pipe line, cutting and threading the pipe and making long screws including excavation, refilling the earth or cutting of wall and making good the same complete wherever required				
73	136141	15 mm nominal bore	Each	220.91	100	22091
74	136143	25 mm nominal bore	Each	255.76	100	25576
	141010	Providing, laying and jointing glazed stoneware pipes grade 'A' as per IS:651 including bends etc. with stiff mixture of cement mortar in the proportion of 1:1 (1cement : 1fine sand) including testing of joints etc. complete				
75	141012	150mm diameter	Metre	237.30	100	23730
	141030	Providing and laying cement concrete 1:4:8 (1cement: 4coarse sand: 8graded stone aggregate 40mm nominal size) all round S.W. pipes including bed concrete as per standard design				
76	141032	150mm diameter S.W. pipe	Metre	238.04	100	23804
	141050	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300x300mm size (inside) the weight of cover to be not less than 4.50kg and frame to be not less than 2.70kg as per standard design				
77	141056	180x150mm size P type With Sewer bricks confirming to IS:4885	Each	1178.59	4	4714

	142030	Providing and laying non-pressure NP3 class (medium duty) R.C.C. pipes including bends etc. with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1cement: 2fine sand) including testing of joints etc. complete up to 800mm dia.				
78	142031	300mm dia. R.C.C. pipe	Metre	501.51	200	100302
	143010	Constructing brick masonry manhole in cement mortar 1:4 (1cement: 4coarse sand) R.C.C. top slab with 1:2:4 (1cement: 2coarse sand: 4graded stone aggregate 20mm nominal size), foundation concrete 1:4:8 mix (1cement: 4coarse sand: 8graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1cement: 3coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1cement: 2coarse sand: 4graded stone aggregate 20mm nominal size) finished with a floating coat of neat				
		cement complete as per standard design				
79	143013	Inside size 120x90cm and 90cm deep including C.I. cover with frame (medium duty) 500mm internal diameter, total weight of cover and frame to be not less than 116kg (weight of cover 58kg and weight of frame 58kg). With F.P.S. bricks class designation 7.5	Each	7593.76	4	30375
	143110	Providing M.S. foot rests including fixing in manholes with 20x20x10cm cement concrete blocks 1:2:4 (1cement: 2coarse sand: 4graded stone aggregate 20mm nominal size) as per standard design				

80	143111	With 20x20mm square bar	Each	170.55	24	4093
	143170	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1cement: 2coarse sand: 4graded stone aggregate 20mm nominal size) cement plastered on both sides with cement mortar 1:3 (1cement: 3coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete				
81	143171	For pipes 100 to 230mm diameter	Each	187.79	80	15023
	143210	Constructing brick masonry road gully chamber 50x45x60cm with bricks of class designation 7.5 in cement mortar 1:4 (1cement: 4 Coarse Sand) including 500x450mm precast R.C.C. horizontal grating with frame complete as per standard design				
82	143211	With F.P.S. bricks	Each	1892.24	4	7569
	152020	Providing and fixing Stainless Steel AISI-304 (18/8) kitchen sink with drain board as per IS: 13983 with C.I. brackets and stainless steel plug 40mm including painting of fittings and brackets, cutting and making good the walls wherever required				
83	152021	510x1040 mm bowl depth 250mm	Each	5480.54	2	10961
84	231010	Preparation of subgrade by excavating earth upto 22.5cm depth, dressing to camber and consolidating with power road roller of 8 to 12 tonne capacity including making good the undulations etc. and disposal of surplus earth with lead upto 50 metres	Sqm	42.01	1307.57	54931
85	231020	Consolidation of subgrade with power road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth or quarry spoils etc. and re-rolling the subgrade	Sqm	1.24	1307.57	1621

	231040	Providing and laying water bound macadam with specified stone aggregate, stone screening and binding material including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc. complete.				
86	231041	Sub-base with stone aggregate 90mm to 45mm including stone screening 13.2mm size	Cum	949.62	392.27	372509
87	237050	Supplying and laying precast Kerb Stone of concrete M25 Grade 30cmX 20 cm (In Section / including chamfering as per design if any) including fixing in 1:6 cement sand mortar and pointing with 1:2 cement mortar (1cement:2 Sand ordinary) including all ex	metre	295.87	700	207109
88	241022	Chain Link fabric mesh of size 50X50 mm size made of GI wire of 4 mm dia.	sqm	410.45	125	51306
89	242100	Providing 1.2m high welded steel wire fabric fencing /chain link fabric with 1.8m posts of specified material and design placed at every 3m apart embedded in cement concrete blocks every 15th post (or nearer as per site conditions), last but one end post	metre	19.92	125	2490
90	252140	Local sand / pit sand/ for filing purposes	Cum	310.50	100	31050
91	161020	Supplying and stacking of good earth at Site including royalty (earth measured in stacks will be reduced by 20% for payment)	Cum	169.91	500	84955
	161040	Supplying and stacking at site dump manure / form manure / animal dung manure from approved source; including all lead and lift etc. (manure measured in stacks will be reduced by 8% for payment)				

92	161041	Screened through sieve of I.S. designation 20mm	Cum	105.19	50	5259.5
93	161090	Spreading of sludge, dump manure/ farm manure/animal dung manure and good earth in required thickness (cost of sludge, dump manure/farm manure or/ and good earth to be paid separately)	100 sqm	15.85	2000	317
94	161100	Mixing earth and sludge or manure in proportion specified or directed. (Net total quantity of earth, sludge or manure after deduction of voids to be considered for payment)	Cum	10.38	500	5190
	161110	Supplying & Grassing with grass in rows 7.5cm apart in either direction 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 mowing including supplying .good earth if needed (the good earth shall be paid for separately)				
95	161111	Doob Grass	100 sqm	339.63	2000	6792.6
96	161116	Extra over item 161110 for grassing in rows at 5cm apart instead of 7.50 cm apart in either direction	100 sqm	222.52	2000	4450.4
97	161120	Renovating lawns including weeding, cheeling the grass, forking the ground, top dressing with sludge or manure, mixing the same with forked soil, watering and maintaining the lawn for 30 days or more till the grass forms, a thick lawn free from weeds and fit for mowing and disposal of rubbish as directed, including supplying good earth, sludge or manure, if needed (cost of sludge/manure & good earth to be paid separately).	100 sqm	986.09	2000	19721.8

98	161130	Uprooting rank vegetation and weeds by digging the area to a depth of 60cm removing all weeds and other growth with roots by forking repeatedly, breaking clods, rough dressing, flooding with water, uprooting fresh growths after 10 to 15 days and then fine dressing for planting new grass, including disposal of all rubbish with all leads and lifts	100 sqm	1768.27	2000	35365.4
99	161370	**Supplying of seasonal flower saplings / Seedlings including all lead & lift, carriage, handling etc.**				
	161371	Antirrhinum	Each	1.58	100	158
	161372	Phlox drumondii	Each	1.62	100	162
	161373	Nasturtium	Each	1.63	100	163
	161374	Salvia	Each	1.95	100	195
	161375	Balsam	Each	1.81	150	271.5
	161376	Calendula officianlis	Each	2.13	100	213
	161377	Poppy	Each	2.31	100	231
	161378	Carnation	Each	2.06	100	206
100	161480	Maintenance of lawn, shrubs, hedge trees etc. including watering, trimming, manuring, spraying insecticide and guarding as required. This includes supply of labour, tools & plants including materials.				
(a)	161481	Lawn	10sqm/ Month	24.65	4800 200x24	118320
(b)	161482	Shrubs	Each/ Month	19.84	1200 50x24	23808
(c)	161483	Hedge	Meter/ Month	17.71	4800 200x24	85008
(d)	161484	Tree	Each/ Month	20.44	1200 50x24	24528

101	161590	Landscaping and making mounds and giving shape as per the requirements (Area to be measured from bottom of mound).	Sqm	26.73	200	5346
102	161700	**Supply of cement pot at site as per direction of officer in charge**				
	161704	Height 30 cm, Upper dia. 30cm & bottom dia. 20 cm	Each	81.32	25	2033.00
	161705	Height 45 cm, Upper dia. 45cm & bottom dia. 30 cm	Each	116.16	20	2323.20
	161710	**Supply of earthen pot at site as per direction of officer in charge**				
103	161714	Height 30 cm, Upper dia. 30cm & bottom dia. 20 cm	Each	30.21	20	604.2
	161950	**DIFFERENT STONES REQUIRED FOR WATER FALL / LAND SCAPING**				
104	161953	Supply of white marble stone of different sizes as per instruction of Officer-in-charge. Delivery at site	MT	1220.74	2	2441.48
105	162040	Supply of HDPE - plastic agro shading net: color green/white/black Shade 5-50%- 60%- 75% and Width 3 m	Sqm	81.42	230	18726.6
	162600	**Hedge/Edge Plants**				
106	162606	Duranta goldiana in polybag	Each	12.78	300	3834
107	-	Misc. USSOR Items	-	-		3000000
	-	**Total**				**34788394**
Add 43.56 % as per Average percentage increase in basic rate including GST						15153824
		Total				**49942218**

Name of work : New Ateli - Construction of Crew RUNNING ROOM

Cement (Schedule-B)

S.N.	ITEM	DESCRIPTION OF ITEM	UNIT	RATE	Qty.	Amount
	033060	Supply and using cement at worksite :				
1	033061	OPC 43 Grade	Tone	5060.00	1200.00	6072000
		Add 45.70 % as per Average percentage increase in basic rate including GST				2774904
		Total				**8846904**

Name of work : New Ateli - Construction of Crew RUNNING ROOM
Steel Bar (Schedule-C)

Sr. No.	ITEM	DESCRIPTION OF ITEM	UNIT	RATE	Qty.	Amount
	045010	Supplying Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.				
1	045016	Thermo-Mechanically Treated bars	Kg	45.54	170950	7785063
		Add 55.80 % as per Average percentage increase in basic rate including GST				**4344065**
		Total				**12129128**

Name of work : New Ateli - Construction of Crew RUNNING ROOM
Other NS Item (Schedule-D)

S.N.	Item	DESCRIPTION OF ITEM	UNIT	RATE	Qty.	Amount
1	NS/1	Providing and fixing 12mm thick toughned glass door of saint gobain /modi guard or similar make using sevax /dorma make patch steel fittings complete in all respect including locks, patch fittings, floor springs of sevax / dorma make, 12" D type handles of stainless steel complete in all respects including etching on glass as per drawing (frameless).	Sqm	5680	32	181760
2	NS/2	Providing & fixing fully fixed partition of 12 mm thick clear tuff glass of saint gobain/modi guard or similar make complete in all respects including etching on glass as per drawing.	Sqm	2650	50	132500
3	NS/3	Aluminium structural glazing work-providing and fixing of specially designed high performance semiunitized system using aluminium section of Jindal/Hindalco/Mahaveer make for main mullion, corner mullion, main transom and to & bottom transom for main frame based structural glazing, mullion and Transom-shall be out of aluminium section size of 63.5 x 58 x weight 1.350 kg/m Anodizing-The surface of aluminium section shall be finished with 50 micron pure polyster powder coating (of approved shade)-silicon-D/C 995/SSG 4000 structural sealent. Weather silicon-789/ ultra proof. single shutter section for glass panel-19.0 x19.0 x 0.250 kg/m M.S. clamp-size-75 x 75	sqm	4000	200	800000

		x 6 with 10 mm Hilti fastners fixing for mullions. Glass 6mm thick Pyrolatic solar control coated heat reflective and tougnened glass of saint Gobain make of approved shade. (Glasses to be fixed using spacer tape and sealing the glasse joints with 789 Dow coming weather proofing silicon)				
		Total				**1114260**

Name of work : New Ateli - Construction of Crew RUNNING ROOM
Bathrooms/WCs -Schedule-E

S.N.	Item	DESCRIPTION OF ITEM	UNIT	RATE	Qty.	Amount
1	1/NS	Providing & fixing table top basin EBELLO ROUND of Hindware Cat. No. 91096 size 40.5 x 40.5x14 Cm or equivalent	No	8196	50	409800
2	2/NS	Providing and fixing angular stopcock with wall flanges Cat. No. 5053 of Florentine of Jaguar make	No	1292	53	68476
3	3/NS	Providing and fixing central hole basin mixture with regular spout with 450 mm long braided hoses Cat No. 5167 of Florentine Jaguar make.	No.	3250	50	162500
4	4/NS	Providing & fixing Bottle Trap (with Internal Partition) 32mm Size with 250mm & 190mm Long Wall Connection Pipes & Wall Flange Cat No. 769 L250x190 of Jaguar make.	No.	1470	80	117600
5	5/NS	Providing and fixing waste coupling 32mm half/full thread of Cat No. 709/705 of Jaguar make.	No.	472	84	39648
6	6/NS	Providing and fixing PVC connection with CP brass nuts & washer suitable for hot & cold water 450mm long. Cat No. 805B Jaqure make	No.	329	70	23030
7	7/NS	Providing and fixing heavy duty C.P. grating of size 125mm dia	No.	76	130	9880

8	8/NS	Providing & fixing looking glass (mirror) 6mm thick (gobain, atul or equivalent) with 6mm thick ISI ply or synthetic imported board and 1.5" wood/synthetic important border approved by engineer incharge including all labour, material, T&Ps, loading, leading, unloading, octori & all taxes etc. complete job. Nothing extra shall be paid on any account what so ever it may be.	Each	1554	40	62160
9	9/NS	Providing and fixing Towel rack 600 mm long Cat no . 1181 Jaqure.	No.	2903	60	174180
10	10/NS	Providing and fixing wall mixture with provision for over head shower with 115mm log bend pipe and flanges cat no. 5273 florentine of jaguare make	No.	5065	40	202600
11	11/NS	Providing and fixing concealed stopcock with adjustable wall flange 15mm dia Cat. No. 5083 of Florentine of Jaguare makes.	No.	602	40	24080
12	12/NS	Providing and fixing wall hung European WC Hindware LARA Rimless (Star white) with chair and nut, bolt/fasteners complete with heavy duty seat of matching colour	No.	13336	53	706808
13	13/NS	Providing and fixing concealed type dual flushing cistern make commander Somany or equivalent	No.	9082	53	481346

14	14/NS	Providing and fixing Hand Shower (Health Faucet) with 1 Meter Long Easy Flex Tube in Chrome Finish & Wall Hook with NRV (Back Flow Preventer) Cat no. 579	No.	1239	53	65667
15	15/NS	S&F quarter turn C.P. bibcock Jaguar Florentine item No. Jequar - 5047 or equivalent quality.	Each	1349	53	71497
16	16/NS	Providing and fixing toilet paper holder Cat no . 1151 Jaqure.	No.	710	53	37630
17	17/NS	Providing and fixing cat no. OHS-CHR-1709 Overhead Shower ø105mm Round Shape Single Flow with Air Effect (ABS Body & Face Plate Chrome Plated) with Rubit Cleaning System with shower arm 120mm dia ABS chrome plated of Jaguar make.	No.	3369	40	134760
		Total				**2791662**
		21% Below as per acceptance letter No. W/Engg./JP/2018-19/108/Nile dated 14.11.2018				**586249**
		Total				**2205413**
		Add 4.5% for escalation				**99244**
		Total				**2304657**

Name of work: Electrical work in construction of Crew Running Room at New Ateli

(Schedule-F)

S. N.	Description	Unit	Rate	Qty.	Amount
A	**Electrification**				
1	Supply of material and wiring of LP/TP/FP/Ex.Fan point with 2.5sqmm PVC single core multi-stranded copper wire insulated concealed in stone/brick masonry wall in19/20 mm PVC conduit with 1.5sqmm PVC wire insulated copper for earth wire 1-way/2-way switch 5/6A as required and good quality ceiling rose including connection (MODULAR) as per spec	No.	402.84	1200	483408
2	Supply and fixing 5/6A plug 5-pin 230V with switch, board and wiring with 2.5sqmm PVC CU cable as per spec.	No.	249.48	200	49896
3	Supply and fixing 15/16A power socket with switch on flush type sheet metal box and connection as per spec	No.	245.16	200	49032
4	Supply and fixing ceiling of fan regulator electronic type 5-step as per spec	No.	413.02	200	82604
5	Supply and fixing 12 module plate for fixing of switches and sheet metal box of good quality concealed fixing of MS/PVC	No.	243.19	160	38910
6	Supply and fixing 8 module plate for fixing of switches and sheet metal box of good quality concealed fixing of MS/PVC	No.	223.27	220	49119

7	Supply and fixing 4 module plate for fixing of switches and sheet metal box of good quality concealed fixing of MS/PVC	No.	160.19	300	48057
8	Wiring of sub-main with 2x2.5 sqmm PVC insulated, single core, multi-stranded copper wire in PVC conduit concealed and 1.5sqmm PVC insulated, single core, multi-stranded copper wire for earth wire as per spec	Mtrs.	74.62	5600	417872
9	Wiring of sub-main with 2x4 sqmm PVC insulated, single core, multi-stranded copper wire in PVC conduit concealed and 1.5sqmm PVC insulated, single core, multi-stranded copper wire for earth wire as per spec	Mtrs.	113.16	3000	339480
10	Wiring of sub-main with 2x6 sqmm PVC insulated, single core, multi-stranded copper wire in PVC conduit concealed and 2.5sqmm PVC insulated, single core, multi-stranded copper wire for earth wire as per spec	Mtrs.	113.98	1200	136776
11	Supply and fixing of computer point board consisting 4 Nos.5/6 switch and socket including connection complete in all respect as per spec	No.	312.42	100	31242
12	Supply, fixing of metal clad plug socket 20A single phase with 32A MCB including fixing an sheet metal enclosure box with one 20A plug top (Ray roll type) to be supplied with board as per spec	No.	718.32	125	89790
13	Supply, fixing and connecting modular type exhaust fan 250/300 mm as per spec	No.	792.12	60	47527

14	Supply, fixing and connecting of Bracket fan 400mm sweep with 3 speed regulator modular type	No.	1601.46	70	112102
15	Supply and providing Modular LED foot light in square SS body complete with 1 No. 1W Yellow LED and step down transformer	No.	807.70	80	64616
16	Supply and fixing of 7W LED Tilt able Mirror light in Aluminum body with glass cover in sand gray finishin 6000k, Approx dimension 320x78x28mm ,catalogue no. LLT 004 - Make Ledlum, or equivalent .	No.	779.00	60	46740
17	Supply and fixing of picture light track mounting luminaire with LED Fitting.	No.	3243.10	60	194586
18	Supply & fixing of Recess mounted 36W (2feetx2feet) LED Luminaire comprising CRCA sheet steel housing with white powder coating complete with Electronic Driver and with small optical window added with high Translucent frosted diffuser. Having System wattage of 36W and System lumen efficacy of 100 Lumen/Watt complete with Electronic Driver. Operating voltage range 140 to 270 volt, THD<10%, Power factor>0.9 Cat No. LCTLRN-36-CDL or similar.	No.	1889.28	280	528998
19	Supply and fixing of octagonal pole 5meter long ,hot dip galvanized with foundation, base plate with fixing of 1No.arms 1000mm for the fittings including smart pack junction box with 6A MCB and terminals as per spec	No.	7353	20	147059

20	Supply and fixing of decorative wall bracket in SS finish and frosted glass complete with holder and lamp as per spec	No.	952.84	20	19057
21	Supply, fixing of Energy efficient LED based streetlight fitting with pressure Dia cast aluminium housing, minimum four LEDs with driver and suitable fixing arrangement in existing pipe used for fixing of 2x14W T-5 fitting etc. IP-65 for outdoor application, operating voltage (140-270)V, minimum, 2000 lumens, system efficacy 1000 Im/W (Min), colour temperature 5700 k, CRI > 65 and warranty of 60 months from the date of commissioning or 72 months from date of supply, LED 20 CW MR S1 PSU GR or similar	No.	3365.15	40	134606
22	Supply, installation, testing and commissioning of 150 ltr water cooler as per spec	No.	32851.17	12	394214
23	Supply, installation testing and commissioning of decorative ceiling fan having 1200mm/1400 mm sweep Bajaj model grace gold DX as per sepc.	No.	1241.73	161	199919
24	Supply and fixing of 2W,12V LED wall lamp with flexible pipe & an off switch on base which is made of stainless steel and head made of brass with stainless steel finish complete with driver reading light (Make:- Syska, Philips, Crompton)	No.	1189.00	80	95120
25	Supply fixing, testing and commissioning of LED sleeksurface mounted round down light 18 watt etc. make Bajaj, CG, HAVELLS etc.	No.	1780.02	400	712008

26	Supply and fixing of 18/20 LED tube light fitting, four feet with its driver and enclosure for in-door application	No.	326.50	200	65300
27	Supply erection and connection of call bell 220/230V as per spec	No.	133.65	50	6683
28	Supply, installation testing and commissioning of LED garden light 12 watt (warm white) syska model no. SSK-3005 or similar as per spec	No.	3621.29	15	54319
29	supply, fixing testing and commissioning of astronomical timer multifunctional digital as per spec	No.	9390.62	10	93906
30	Supply and fixing of engergy efficient 70-80W LED floodlight luminaries comprising die cast aluminium housing with toughened glass, complete with electronic driever luminaries has the system efficacy of 100 lumen/watt, complete in all respect as per spec	No.	4149.46	10	41495
31	Supply, install, test and commissioning of outdoor type LED based projector flood light for façade lighting with IP-65 version in 40 watt (with suitable bracket or stand) as per spec	No.	10118.40	10	101184
32	Supply of sub mono block pump set 10HP 3-phase, 415V AC with all accessories at site as per spec	No.	35296.94	6	211782
33	Installation of pump set with GI pipe, Nut, bolts, washer, rubber packing, valve, copper cable etc as per spec	No.	4153.08	6	24918

34	Supply and installation of automatic control panel with star delta starter for 10HP three-phase pump including connections and providing cable from main board to control panel and connection for WLG in open well as per spec	No.	16543.42	6	99261
35	Supply fabrication fixing and installation of MS sheet sheet enclosure free standing outdoor type with heat dissipation sides 2 feet above ground level for control panel and accessories of 16 swg sheet size 120x70x60cms with painting and locking arrangement and foundation with installation of automatic control panel inside the box as per spec	No.	10755.82	6	64535
36	Supply and fixing of Electric stroage water (Geyser) capacity 15 Ltr. Vertical element capacity.	No.	5789	20	115780
B	**Power distribution arrangement**				
1	Supply, fixing, testing and commissioning of VTPN 12 Way MCCB160A IP43 as per spec	No.	13848.98	7	96943
2	Supply and fixing MCB 63A four pole 10kA as per spec	No.	1244.76	60	74686
3	Supply, fixing, testing and commissioning of distribution board with incoming 32A,single phase ,DP MCB and outgoing 8Nos. Single pole MCB 6-16 as per spec	No.	2063.94	12	24767
4	Supply, fixing, testing and commissioning of RCBO 63A, Four pole, 30mA with Earth leakage, overload and short circuit protection.	No.	3357.9	40	134316

5	Supply, fixing, testing and commissioning of Distribution Board double door, 3-phase and neutral with incoming 63A 4-pole MCB and outgoing 12Nos. MCB 6-32A single pole as per spec.	No.	5049.56	48	242379
6	Supply, fixing, testing and commissioning of RCBO 25A, double pole, 30mA with Earth leakage, overload and short circuit protection as per spec	No.	2040.16	12	24482
7	Supply, laying and commissioning of IS mark FRLS unsheathed insulated multistrand sing core copper conductor cable in existing metal conduit pipe, its accessories, metal box recessed in wall etc of size 10sqmm	M	75.44	6000	452640
8	Supply and fixing of 50mm MS conduit with it accessories as per spec	M	278.8	1500	418200
C	**Power supply arrangement**				
1	Supply installation, testing and commissioning of 11KV outdoor ring main unit, manual type, 630A, 20KA , 2 incomers and 2 output consisting of all VCB make-ABB or similar as per spec	No.	738000	1	738000

2	Supply installation, testing and commissioning including foundation of bricks mansonry of outdoor readymade compact substation enclosure non walk-in type fabricated by GI steel shall house the following accessories (1) 11KV, 630A, 21KA/3 sec ring main unit consisting of 1 incoming T-off VCB/SF-6 & 2 no. on load isolators (with key interlocking mechanism) with air insulated metering module (2) 250 KVA 11KV/0.415KV hermetically sealed ONAN type transformer with off circuit tap swith (3) LT panel shall consist of 1 no. incoming of 400A, 4P, 35KA 415V, MCCB manual microprocessor fixed type & outgoings of 4 Nos 100A, 4P, MCCB and 1 No 4P, 400A MCCB (4) APFC panel of 70 KVAR as per spec	No.	1465585.3	2	2931171
3	LT Distribution panel supply and providing LT distribution panel board of MS sheet 1.6mm consisting 2x400A 4-pole 36KA MCCB as incoming and 10x 100A 4-pole 36KA MCCB as outgoing having suitable size coppper bus bar and 3-phase 50A electronic digital energy meter 2 no. in incoming indicating lamp with a-meter, V-meter, ASS/VSS, CT, selector switches, coppper bus and earth bus etc. as required railway complete in all respect. All MCCBs should be of load adjustable feature.	No.	184266.8	2	368534
4	Supply, fixing, testing & commissioning of 1000Amp, 50kA, 4P, EDO with LSIG with LCD display and over temperature protection and under voltage release complete make-legrand cat. No. 028732 & 028858 or similar as per spec	No.	177120	12	2125440

5	Supply fixing, testing & commissioning of 1000Amp, 50kA, 4P, EDO bus scoupler with under voltage release complete make-legrand cat. No. 028732 & 028858 or similar as per spec	No.	152437.18	3	457312
6	Supply, fixing, testing and commissioning of SCPCU 1000A straight length L=3 M 3 OUTL. (3 metre counting as 1 unit) Make- legrand cat. No. 65280131P or similar As per spec	No.	97584.92	14	1366189
7	Supply, fixing, testing and commissioning of SCPCU 1000A end feed unit RH Make-legrand cat. No. 65280101P or similar as per spec	No.	55567.3	2	111135
8	Supply, fixing, testing and commissioning of SCP end B120 make-legrand cat No. 65283101P or similar as per spec	No.	8440.26	2	16881
9	Supply, fixing, testing and commissioning of SC B120 hanger with bracket and spring (riser) make-Legrand cat No. 655213711 or similar as per spec	No.	2313.22	28	64770
10	Supply, fixing, testing and commissioning of SCP Plug in box 125 Amp IP-55 empty Make - legrand cat No. 65285012P or similar as per spec	No.	13217.58	10	132176
11	Supply, fixing, testing and commissioning of Manual change over switch - 1000A ,4P (on Load type)	No.	72160	1	72160
12	Laying of LT/HT Cable IN AIR / Pipe/ Wall/tray as per spec	Mtrs.	18.86	2000	37720

13	Horizontal Directional Drilling (HDD)/Boring and trenchless cabling. Supply, transportation and insertion of self lubricated HDPE pipe and laying of cables in boring under the track /road /ground/ masonary building by using self lubricated HDPE pipe of 120mm outer dia and 103.5mm inner dia in the bore and laying of cables in the bore under the track/road/ground/masonary building. The depth of horizontal boring should be minimum 1 mtr from rail flange/road level/ground, as per site requirement.	M	1179.98	50	58999
14	Supply and laying of HDPE pipe dia 160mm under road ground/floor/railway trackor as per site requirement already excavated trench as per spec	M	459.2	500	229600
15	Excavation of 0.50mtr width 1.20mtr deep trench in all kind of soil for laying of HDPE/spun concrete pipe for underground cable crossing	M	127.92	500	63960
16	Laying testing commissioning of 11/33kv HT XLPE cable in air ground/in trench spun pipe with transportation from main depot to required site as per spec	M	88.56	500	44280
17	Digging and filling of trench size 0.4x1.2 mtr as per spec (trench work may be on kuchha/pucca and land and all type of soil as per site requirement and without protective layer of brick) surface of trench shall be made good in all respect and satisfaction of site engineer.	M	38.54	1200	46248

18	Supply of LT cable size 4x300 sqmm .	M	2000	150	300000
19	Supply of LT cable size 4x16 sqmm .	M	160	675	108000
20	Supply of LT cable size 4x35 sqmm .	M	270	300	81000
21	Supply of LT cable size 4x70 sqmm.	M	480	200	96000
22	Supply of LT cable size 4x185 sqmm .	M	1075	200	215000
23	Supply of 11KV. HT cabe size 3x70 sqmm	M	790	400	316000
24	Supply fixing and commissioning of HT XLPL heat shrinkable type cable end box indoor type size 50 to 120 sqmm as per spec	Set	4743.7	2	9487
25	Supply fixing and commissioning of HT XLPL heat shrinkable type cable end box outdoor type size 50 to 120 sqmm as per spec	Set	7995.82	4	31983
26	Supply fixing and commissioning of HT XLPL heat shrinkable stranight HT cable joint box size 50 to 120 sqmm as per spec	Set	7762.12	4	31048
27	Supply & providing copper plate earthing 4 metre deep, copper plate size 600x600x3 mm as per spec.	No.	5152.06	18	92737
28	Supply and fixing of Copper Earth Flat strip size 25x3mm as per spec.	Mtr	243.54	200	48708
29	Supply, fixing, testing and commissioning of fabricated Feeder Pillar distribution box made of MS sheet 1.6mm thick size 600x300x600mm with suitable MS stand Copper bus bar of 200A capacity and 2x63A MCB 4 pole as per spec	No.	4458.76	4	17835

30	Supply and providing of cable marker as per spec	No.	144.99	20	2900
31	Supply and providing GI pipe earthing of 4 meter length as per spec	No.	1636.72	20	32734
32	Supply and laying of GI pipe B-class 38mm dia including bends, sockets required as per spec	M	173.84	20	3477
33	Supply and laying of GI pipe B-class 50mm dia including bends, sockets required as per spec	M	198.44	20	3969
34	Supply and fixing of 250 KVA 3 phase liquid cooled Diesel Generator set with AMF control Panel make cummins or similar		3380424	1	3380424
	Total				**20496189**

Fire Fighting System in Crew Running Room at New Ateli

Schedule-G

S.N.	Description of item	Units.	Rates (Rs.)	Qty.	Amount
NS 1	Providing and fixing 25 mm dia single action air release valve at the top of Risers.	Nos.	5303	2	10606
NS 2	Providing and laying M.S. (Heavy duty C class) pipe IS: 1239 marked including all accessories such as screwed/welded flanges, tees, reducers etc. conforming to IS : 1239 complete including painting welding , jointing and compressed asbestos gaskets, nuts, bolts etc. as required. The pipe shall be painted with one coat of Primer & two coats of post office red primer paint fixed in ceiling , walls, columns for all heights with hangers/supports and fasteners. Including excavation of trench 01 Mts deep & back filling of removed surplus soil & repairing up to original condition.				0
	(a) 100 mm dia pipe	Mts	1213	300	363900
	(b) 80 mm dia pipe	Mts	874	50	43700
	(c) 25 mm dia pipe	Mts	304	20	6080
NS 3	Providing and fixing single headed hydrant valves with flanged inlet ISI marked with 63 mm female instantaneous outlet of stainless steel complete with blank cap and chain conforming to IS : 5290.	Nos.	6717	21	141057

NS 4	Providing 63 mm dia 15 M long reinforced rubber hose pipe conforming to IS : 636-1962, Part- /A & ISI marked with stainless steel male & female coupling wire wound with the pipe.	Nos.	4122	42	173124
NS 5	Providing and fixing Swinging drum type hose reel ISI marked 30 M (Length , 20 mm dia rubber lined pipe with shut off nozzle of 6 mm dia including the cost of 25 mm dia pipe connection from riser to hose reel , all sockets , nipples, elbows .	Nos.	8640	18	155520
NS 6	Providing & fixing (.09 M x 0.6 M x .25 M) OUT DOOR HOSE CABINET made of not less than 16 SWG M.S. sheet having central opening glazed (4 mm thick glass) door including necessary locking arrangement, painting (one coat primer & two coats of paint).	Nos.	2801	6	16806
NS 7	Providing & fixing 0.9 M x 1.8 M or as per site requriment IN DOOR HOSE CABINET made not less than 16 SWG M.S. sheet having central opening glazed (4 mm thick glass) door including necessary locking arrangement, painting (one coat primer & two coats of paint).	Nos.	4682	12	56184
NS 8	Providing and fixing 63 mm dia instantaneous pattern stainless steel short branch pipe , nozzle conforming to IS 903 , suitable for inter connection to hose pipe coupling complet as required.	Nos.	1345	14	18830

NS 9	providing and fixing 50 mm dia MS pipe drainage arrangement for fire down comer including 50 mm dia butterfly valve with a maximum pipe length of 5 Mts.	Nos.	4349	4	17396
NS 10	Providing and fixing ISI marked two way fire brigade inet to down comer with non return valve complete in all respects.	Nos.	9580	4	38320
NS 11	Providing and fixing suction coupling for fire bridgade withdrawal of water from tank with 100 mm dia pipe and foot valve. (Pipe max 10 M long)	Nos.	9417	2	18834
NS 12	Providing and fixing CI non return valve complete with bolts nuts washers and compressed asbestos gasket etc as required.				0
	100mm dia	Nos.	4928	6	29568
NS 13	Providing and fixing Butrerfly valve with cast iron body, cast iron disc and seat of nitrile rubber bonded on bakelite with hard back to PN 1.6 rating with following sizes complete gasket as required.				0
	100 mm dia	Nos.	4190	30	125700
NS 14	Providing and fixing metal ball valve sutaible for pressure 15 Kg/cm2 and confirming to IS 778 of the following size including providing necessary union / flange.				0
	25 mm dia pipe	Nos.	819	18	14742

NS 15	SITC of electric driven Down commer pump at terrace lable suitable for auto-matic operation consisting of the following. A) Horizonal centrifugal suction type pump complete for delivery of below mentioned discharge. B) Squirrel cage induction motor sutaible for 415 V 50 Hz , AC supply of below mentioned for the pump , 2900 RPM T.E.F.C. confirming to IP:55 and flexible coupling and coupling guard with the pump.				0
	900 LPM at 30-35 Mtr Head	Nos.	70735	1	70735
NS 16	SITC ofdiferntial pressure type pressure switches.	Nos.	2279	1	2279
NS 17	Providing & fixing 100 mm dia pressure Gauge on pump delivery line complete with shut off cock	Nos.	997	1	997
NS 18	Providing & fixing double flanged flexicon rubber expansion joint with unit control of standard length as per maufactures specs. Tested to a pressure of 15 Kg/Sqcm including rubber gaskets, flanges , nuts, bolts and washer complete as required .				0
	100 mm dia	Nos.	6674	6	40044
NS 19	SITC of Electric Panel for fire pump including sutaible bus bar, MCCB of sutaible rating with volt meter and ampere meter , three phase supply , auto manual selector switch , suitable star delta starter with over-load relay, single phase preventor.	Nos.	16853	1	16853

NS 20	SITC of Electric Hooter (agni Suraksha)	Nos.	593	15	8895
NS 21	SITC of MCP (Manual call point) agni Suraksha	Nos.	427	15	6405
NS 22	SITC of manual fire alarm panel zone 8 with open , short , earth fault circuit (agni suraksha)	Nos.	16141	1	16141
NS 23	SITC of 12 volt 7 AH maintenance free sealed lead acid batery	Nos.	1377	2	2754
NS 24	SITC of 3 core 1.5 Sq. mm copper armoured cable in PVC conduit on surace in shaft for manual alarm system	mts	87	150	13050
NS 25	Laying of LT/HT cables As per specification.				0
a	In air	Mtr.	22	300	6600
NS 26	Providing and fixing with bracket/supports etc. wall/floor mounted fire extinguishers as per details below.				0
A	Providing and fixing charged abc type fire extinguishers including the cost of fixing with nut bolts etc. as required.				0
	5 Kg	Nos.	2993	25	74825
B	Providing and fixing charged CO2 type fire extinguisher capacity 4.5 Kg includig the cost of fixing with nut bolts etc. as required	Nos.	4732	25	118300

NS 27	Providing and fixing of self contained breathing apparaters 30 minuts capacity cylender, should approved by chief controller of eplosive, Govt. of india, Nagpur.	Nos.	54594	2	109188
NS 28	Providing of Rope ladder of capacity 150 Kg Total length 30 Mtr.	Nos.	10207	3	30621
NS 29	Providing of rope 25 mm x 30 Mtr.	Nos.	2753	3	8259
NS 30	Providing and fixing of fire man Axe insulated with Rubber tested to 11 KV	Nos.	522	20	10440
NS 31	fire Breater	Nos.	961	2	1922
NS 32	Fire Hook	Nos.	688	2	1376
NS 33	M.S. Cabinet sutaible to accommodate Breathing Appraters Set with glass front door wall mounting type	Nos.	6029	1	6029
NS 34	Providing & fixing air vessel 250mmx1200 mm high with desired top made of minimum 10 mm thick MS pipe complete with brass air valve, stop valve, pressure gausge including all accessories as required.	Nos.	13577	1	13577
NS 35	Providing & fixing pipe protection warping coating for underground pipes 80 mm & 100 mm dia	Mtr	254	300	76200
NS 36	Supply of material and providing earthing with 3 mtr. Long 50mm dia G.I. pipe 'B' Class. As per specification	Nos.	1333	4	5332

NS 37	Providing and fixing 8 SWG dia G.I. wire on surface	Mtr	42	200	8400
NS 38	Y type stainer	Nos.	8545	1	8545
NS 39	mechanical foam fire estinguistur mounted on trolly 50 lbs capacity	Nos.	19939	2	39878
NS 40	MCB enclosure Double Door type with for 4 pole MCB 'C' curve 63 Amps 10 'KA' type	Nos.	2561	1	2561
NS 41	Supply of copper flat cable size 3x6mmsq as per spec	Mtr	78	300	23400
Total					**1953973**

HVAC System in Crew Running Room at New Ateli- (Schedule-H)

S.N	Description	Unit	Qty.	Rate	Amount
1	Supply, installation, testing and commissioning of 5 star rated split type 1.5 ton air conditioners as per spec	Each	40	41000	1640000
2	Supply and installation of cassate type units of 3 TR capacity having indoor/outdoor complete with cordless remote control and with in built heating and cooling arrangement scrool compressor	Each	15	153983	2309751
3	Supply and installation of copper pip with nitril insulation having specification of 19.05mm OD for suction line and 12.7 mm OD for liquid line with drian pipe and connecting wire	Mtr.	600	1897.83	1138698
4	Testing and commissioning of 3 TR cassate unit inclusive first charging of refrigerant if required	Nos	20	6038.55	120771
5	Supply and installation of cassate type units of 1.8/2.0 capacity having having indoor/outdoor complete with cordless remote control and with in built heating and cooling arrangement scrool compressor	Nos	15	59616	894240
6	Testing and commissioning of 1.8/2.0 TR cassate unit inclusive first charging of refrigerant if required	Nos	20	2835	56700
7	Supply and installation of copper pip with nitril insulation having specification 15.88 OD for suction line and 6.35mm OD for liquid line with drian pipe and connecting wire	Mtr.	600	1044.9	626940

8	Supply and fixing of CPVC pipe 20mm dia or split AC condensate water drain including cutting/making hole in wall, laying of CPVC pipe with elblow TEE reducer, socket etc. as per site requirement	Mtrs.	420	225.5	94710
9	Supply and fixing of CPVC pipe 25 mm dia or split AC condensate water drain including cutting/making hole in wall, laying of CPVC pipe with elblow TEE reducer, socket etc. as per site requirement	Mtrs.	250	255.84	63960
10	Supply and fixing of PVC conduit pipe size 25mm dia thickness 1.6mm ISI marked concealed in wall as per spec	Mtrs.	600	19.68	11808
11	Supply and laying of Electrical copper cable 2.5 sqmm/3 core as spec	Mtrs.	625	58.22	36387.5
12	Supply & installation of refrigerent copper piping with insulation (size 1/2" & 1/4") as per spec	Mtrs.	625	574	358750
13	Supply & laying of communication cable 4 core 1 sqmm as per spec	Mtrs.	625	90.2	56375
14	Supply & fixing of outdoor unit stand for installation of air conditioner outdoor unit as per spec	No.	70	615	43050
	Total				**7452141**

LIFT in Crew Running Room at New Ateli- (Schedule-I)

Sr. N.	Description	Unit	Qty.	Rate	Amount
1	Supply, Installation, testing and commissioning of 6 passenger ,6 Stops(Ground+5 floor)(Gearless, machine room less) having constant speed of 1.0 mps serving different floors in the lift shaft as per detailed specifications	Nos.	1	15,00,000	15,00,000
2	Supply, Installation, testing and commissioning of 13 passenger ,6 Stops(Ground+5 floor)(Gearless, machine room less) having constant speed of 1.0 mps serving different floors in the lift shaft as per detailed specifications	Nos.	1	18,50,000	18,50,000
Total					**3350000**

Schedule of Solar water heating System in Crew Running Room at New Ateli-

(Schedule-J)

Sr. No.	Description	Unit	Qty.	Rate	Amount
1	Supply, installation, testing and commissioning of ETC based solar water heating system (MNRE approved) Complete in all respect with cold & hot water pipe line & Cold & hot Water tank etc as per Specification.				
a	Solar Water heating sysem Capacity 1000 LPD capacity.	Nos.	3	134598	403793.16
b	Composite Pipe PE-AL-PE pipe 2532 type (Inner dia-25mm & Outer dia 32mm)-Polyethylene HDPE type (UV)pipe with black colour & working temprature of -400 C to 900 C with all suitable fitting of brass & others etc as per Specification.	Mtrs	175	340.51	59589.25
c	Composite Pipe PE-AL-PE pipe 1620 type (Inner dia-16mm & Outer dia 20mm)-Polyethylene HDPE type (UV)pipe with black colour & working temprature of -400 C to 900 C with all suitable fitting of brass & others etc as per Specification.	Mtrs	150	185	27766.50
d	Brass chrome plated water taps size 15mm 400 gram weight along with accessories as per Specification.	Nos.	50	207.60	10380.00

e	Supply & Wrapping of Hot water pipes with 9 mm thick nitrial foam type tube foam for hot water Exposed and Concealed piping raping work including jointing treatment. (Rate to be coated per meter of pipe length).(Superloan/ Accoflex / Armaflex Make)	Mtrs	350	78	27300.00
Total					**528829**

Explanatory Notes for BOQ:

(i) All NWR USSOR items contain item nos., if any discrepancy is found in nomenclature, rates, units etc. USSOR will prevail.

(ii) The rates shall also be inclusive of all taxes (**Including GST**) legally leviable and / or any other taxes, license fee and royalty charges etc. if any.

(iii) Contractor should bear the fact in mind while quoting the rates that GST will be paid by Contractor as per prevailing rate for further deposition of GST to State Govt. and/or Central Govt. as applicable. Documentary evidence of deposition of GST will be produced by contractor.

(iv) The above quantity is approximate:-The DFCCIL reserve the right to increase / decrease the same.

(v) 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.

(vi) The contractor shall make a bore log survey at site location for foundation design of Crew Running Room and prepare the detailed design of foundation. For this work nothing extra shall be paid to the contractor. RCC design of superstructure of Crew Running Room is available with DFC. Contractor will got approved foundation design and superstructure design by NIT/IIT. Cost of design approval to be paid to NIT/IIT will be reimbursed by DFCCIL.

(vii) GAD of Crew Running Room is available with DFCCIL. Required Fire safety certificate for Crew Running Room will be taken by contractor. Fees paid to Govt. Organization for taking Fire certificate will be reimbursed by DFCCIL. Any minor changes in GAD due to fulfilment of building bye laws in respect of fire safety norms will be done by the contractor. Nothing will be paid for updating GAD.

Statement showing Details of Tender Schedule Cost
Name of Work:- Construction of Crew Running Room at New Ateli

S.N.	Name of work	Amount
1	General Civil Work (Schedule-A)	49942218
2	Cement (Schedule-B)	8846904
3	Steel Bar (Schedule-C)	12129128
4	Other NS Item (Schedule-D)	1114260
5	Bathrooms/WCs -Schedule-E	2304657
6	General Electrical Work (Schedule-F)	20496189
7	Fire Fighting work (Schedule-G)	1953973
8	HVAC Work (Schedule-H)	7452141
9	Lift Work (Schedule-I)	3350000
10	Solar Water Heater Work (Schedule-J)	528829
	Grand Total	**108118299**

FORM No. 5

SAMPLE

A G R E E M E N T

CONTRACT AGREEMENT

THIS AGREEMENT ("Agreement") is made at Jaipur on the ____day of _____BETWEEN
(1) Dedicated Freight Corridor Corporation of India Limited, incorporated under the laws of India and having its principal place of business at, General Manager/Co , Dedicated Freight Corridor Corporation of India Limited, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur-302020, India (hereinafter called **'the Employer'**), and ----------
---, a company / corporation / JV incorporated under the laws of ----------having its principal place of business at ---------- (hereinafter called "**the Contractor**").

WHEREAS in reference to a call for Tender for Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway as per Tender JP/EN/RE-RGS/WC/Crew Running Room/New Ateli at Annexure "A" here to, the Contractor has submitted a Tender hereto and whereas the said Tender of the contractor has been accepted for Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway as per copy of the Letter of Acceptance of Tender No---------- dated ----_complete with enclosure at the accepted rates and at an estimated contract value of Rs._____(Rupees _only). Now the agreement with witness to that in consideration of the premises and the payment to be made by the Employer to the Contractor provided for herein below the Contractor shall supply all equipments and materials and execute and perform all works for which the said Tender of the Contractor has been accepted, strictly according to the various provisions in Annexure 'A' and 'B' hereto and upon such supply, execution and performance to the satisfaction of the Purchaser, the Purchaser shall pay to the contractor at the several rates accepted as per the said Annexure 'B' and in terms of the provisions therein.

IN WITNESS WHEREOF the parties here to have caused their respective Common Seals to be hereunto affixed/ (or have hereunto set their respective hands and seals) the day and year first above written.

For and on behalf of the Contractor	For and on behalf of the Employer
Signature of the authorized official Name of the official	Signature of the authorized official Name of the official
Stamp/seal of the Contractor	Stamp/Seal of the Employer

SIGNED, SEALED AND DELIVERED

By the said
_____Name

On behalf of the Contractor in the presence of:
Witness _____
Name _____
Address _____

by the said
_____Name

on behalf of the Employer in the presence of:
Witness _____
Name _____
Address _____

Enclosures:-

1. Annexure 'A' - Tender Papers No.
2. Annexure 'B' - Letter of Acceptance of Tender No._____Dated_____
   Along with Summary of Prices

FORM No. 6

SAMPLE

Name of the Bank _____

CPM/DFCCIL/Jaipur Bank Guarantee Bond No._____
Acting through _____(Designation Dated _____ and address of contract signing authority)

PERFORMANCE GUARANTEE BOND

In consideration of the General Manager/Co / DFCCIL/Jaipur acting through _____ (Designation & Address of Contract Signing Authority), Dedicated Freight Corridor Corporation of India Limited hereinafter called "DFCCIL") having agreed under the terms and conditions of agreement/Contract Acceptance letter No. _____ dated made between _____ (Designation & address of contract signing Authority) and _____ (hereinafter called "the said contractor(s)" for the work_____
(hereinafter called "the said agreement") having agreed for submission of an irrevocable Bank Guarantee Bond for Rs._____ (Rs. _____Only) as a performance security Guarantee Bond from the contractor(s) for compliance of his obligations in accordance with the terms & conditions in the said agreement.

1. We _(indicate the name of the Bank) hereinafter referred to as the Bank, undertake to pay to the Government an amount not exceeding Rs. _____ (Rs. _____Only) on demand by the Government.
2. We _____(indicate the name of the bank, further agree that (and promise) to pay the amounts due and payable under this guarantee without any demur merely on a demand from the Government through the CPM/DFCCIL/Jaipur or _____ (Designation & Address of contract signing authority) DFCCIL, stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by the Government by reason of any breach by the said contractor of any of the terms or conditions contained in the said agreement or by reason of the contractor failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____ (Rs. _____Only)

3 (a) We, _____(indicate the name of Bank) further undertake to pay to the Government any money so demanded notwithstanding any dispute or dispute raised by the contractor (s) in any suit or proceeding pending before any court or Tribunal relating to liability under this present being absolute and unequivocal.

(b) The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

4. We, _____ (indicate the name of bank) to further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged by _____(Designation & Address of contract signing authority) on behalf of the Government, certify that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor (s) and accordingly discharges this guarantee.

5. (a) Not withstanding anything to the contrary contained herein the liability of the bank under this guarantee will remain in force and effect until such time as this guarantee is discharged in writing by the Government or until (date of validity/extended validity) whichever is earlier and no claim shall be valid under this guarantee unless notice in writing thereof is given by the Government within validity / extended period of validity of guarantee from the date aforesaid.

(b) Provided always that we _____(indicate the name of the Bank) unconditionally undertakes to renew this guarantee to extend the period of guarantee form year to year before the expiry of the period or the extended period of the guarantee, as the case may be on being called upon to do so by the Government. If the guarantee is not renewed or the period extended on demand, we _____(indicate the name of the Bank) shall pay the Government the full amount guarantee on demand and without demur.

6. We, _(indicate the name of Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without effecting in any manner out of obligations hereunder to vary any of the terms and conditions of the said contract from time to time or to postpone for any time or from time to time any to the powers exercisable by the Government against the said contractor (s) and to forbear or enforce any of the terms and conditions of the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor (s) or for any bearance act or omission on the part of the Government or any indulgence by the Government to the said contractor (s) or by any such matter or thing whatsoever which under the law relating to sureties for the said reservation would relive us from the liability.

7. This guarantee will not be discharged by any change in the constitution of the Bank or the Contractor (s).

8. We, _____(indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.

9. This guarantee shall be valid upto _____(Date of completion plus 60 days beyond that). Unless extended on demand by Government. Notwithstanding anything to the contrary contained herein before, our liability under this guarantee is restricted to Rs. _____ (Rs. _____only) unless a demand under this guarantee is made on us in writing on or before _____ we, shall be discharged from our liabilities under this guarantee thereafter.

Dated _____ the day of _____ for _____(indicate the name of bank)

Signature of Bank Authorize official
(Name):
Designation: Full
Address.

Witness:
1. _____

2. _____

FORM No. 7

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 General Manager/Co / DFCCIL/Jaipur 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 to as 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 to him.

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 General Manager/Co DFCCIL/Jaipur 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 Part IV, Chapter – II (Form - 4) to 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. 8

ECS / NEFT / RTGS
MANDATE FORM

Date:-
To,
Dy. CPM/Finance
DFCCIL/Jaipur
Sub: ECS / NEFT / RTGS payments

We refer to the ECS / NEFT / RTGS set up by DFCCIL for remittance of our payments using RBI's NEFT / RTGS scheme, our payments may be made through the above scheme to our under noted account.

Name of Bank	
Name of City	
Bank Code No	
Name of Bank Branch	
Branch Code No	
Address of Bank Branch	
Telephone Number of Bank Branch	
Fax No of Bank Branch	
Name of customer / Tenderer as per account	
Account Number of Tenderer appearing on cheque book	
Type of Account (S. B. / Current / Cash credit)	
IFSC code for NEFT	
IFSC code for RTGS	
9-Digit-code number of the bank and branch appearing on the MICR cheque issued by the bank.	
Details of Cancelled Cheque leaf	
Telephone no of tenderer	
Cell Phone Number of the tenderer to whom details with regard to the status of bill submitted to Accounts Office i.e. Co6 & Co7 & Cheque Purchase Orders particulars can be intimated through SMS	
Tenderer's E - mail ID	

Confirmed by Bank signature of tenderer with stamp and address
Enclose a copy of crossed cheque

FORM No. 9

DRAFT MEMORANDUM OF UNDERSTANDING (MOU) For JOINT VENTURE PARTICIPATION BETWEEN

M/s …….. Having its registered office at …… (Hereinafter referred to as ……) acting as the Lead Partner of the first part,

And

M/s …….having its registered office at ……. (Hereinafter referred to as `…….') in the capacity of a Joint Partner of the other part.

And

M/s …….having its registered office at ……. (Hereinafter Referred to as `…….') in the capacity of a Joint Partner of the other part.

The expressions of …….. And …….. Shall wherever the context admits, mean and include their respective legal representatives, successors-in-interest and assigns and shall collectively be referred to as "the Parties" and individually as "the Party"

WHEREAS:

Dedicated Freight Corridor Corporation of India Limited (DFCCIL) [hereinafter referred to as "Client"] hasinvited bids for … "[Insert name of work]……..."

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. The following documents shall be deemed to form and be read and construed as an integral part of this MOU.
   (i) Notice for Bid, and
   (ii)Bidding document
   (iii) Any Addendum/Corrigendum issued by Dedicated Freight Corridor Corporation of India Limited
   (iv) The bid submitted on our behalf jointly by the Lead Partner.

2. The `Parties' have studied the documents and have agreed to participate in submitting a `bid' jointly.

3. M/s ……shall be the lead member of the JV for all intents and purpose and shall represent the Joint Venture in its dealing with the Client. For the purpose of submission of bid proposals, the parties agree to nominate …….. As the leader duly authorized to sign and submit all documents and subsequent clarifications, if any, to the Client. However M/s …… shall not submit any such proposals, clarifications or commitments before securing the written clearance of the other partner which shall be expeditiously given by M/s……..…….to M/s…….

4. The `Parties' have resolved that the distribution of responsibilities and their proportionate share in the Joint Venture is as under:

(a) Lead Partner;
(i) ……
(ii) …….
(iii) …..
(b) Joint Venture Partner
(i) ……
(ii) …….
(iii) …..
[Similar details to be given for each partner]

5. JOINT AND SEVERAL RESPONSIBILITIES

The Parties undertake that they shall be jointly and severally liable to the Client in the discharge of all the obligations and liabilities as per the contract with the Client and for the performance of contract awarded to their JV.

6. ASSIGNMENT AND THIRD PARTIES

The parties shall co-operate throughout the entire period of this MOU on the basis of exclusivity and neither of the Parties shall make arrangement or enter into agreement either directly or indirectly with any other party or group of parties on matters relating to the Project except with prior written consent of the other party.

7. EXECUTIVE AUTHORITY

The said Joint Venture through its authorized representative shall receive instructions, payments from the Client. The management structure for the project shall be prepared by mutual consultations to enable completion of project to quality requirements within permitted cost and time.

8. BID SECURITIES

Till the award of the work, JV firm/Lead Partner of JV firm shall furnish Bid Security to the Client on behalf of the joint venture which shall be legally binding on all the members of the Joint Venture.

9. BID SUBMISSION

Each Party shall bear its own cost and expenses for preparation and submission of the bid and all costs until conclusion of a contract with the Client for the Project. Common expenses shall be shared by all the parties in the ratio of their actual participation.

10. INDEMNITY

Each party hereto agrees to indemnify the other party against its respective parts in case of breach/default of the respective party of the contract works of any liabilities sustained by the Joint Venture.

11. For the execution of the respective portions of works, the parties shall make their own arrangements to bring the required finance, plants and equipment, materials, manpower and other resources.

12. DOCUMENTS & CONFIDENTIALITY

Each Party shall maintain in confidence and not use for any purpose related to the Project all commercial and technical information received or generated in the course of preparation and submission of the bid.

13. ARBITRATION

Any dispute, controversy or claim arising out of or relating to this agreement shall be settled in the first instance amicably between the parties. If an amicable settlement cannot be reached as above, it will be settled by arbitration in accordance with the Indian Arbitration and Conciliation Act 1996 or any amendments thereof. The venue of the arbitration shall be Delhi.

14. VALIDITY

This Agreement shall remain in force till the occurrence of the earliest to occur of the following, unless by mutual consent, the Parties agree in writing to extend the validity for a further period.

a. The bid submitted by the Joint Venture is declared unsuccessful, or
b. Cancellation/ shelving of the Project by the client for any reasons prior to award of work
c. Execution of detailed JV agreement by the parties, setting out detailed terms after award of work by the Client.

15. This MOU is drawn in ….. Number of copies with equal legal strength and status. One copy is held by M/s …… and the other by M/s……. & …….M/s …….. And a copy submitted with the proposal.

16. This MOU shall be construed under the laws of India.

1**7. NOTICES**

Notices shall be given in writing by fax confirmed by registered mail or commercial courier to the following fax numbers and addresses:

Lead Partner	Other Partner(s)
…….	……
(Name & Address)	(Name & Address)

IN WITNESS WHEREOF THE PARTIES, have executed this MOU the day, month and year first before written.

M/s……..	M/s…….
……..……	……..
(Seal)	(Seal)

Witness
1…….. (Name & Address)
2…….. (Name & Address)

Notes: (1) In case of existing joint venture, the certified copy of JV Agreement may be furnished.

FORM No. 10

DRAFT FORMAT OF JOINT VENTURE AGREEMENT

To be executed on non-judicial stamp paper of appropriate value in accordance with relevant Stamp Act and to be registered with appropriate authority under Registration Act.

The JV agreement shall be structured generally as per contents list given below:

A. CONDITIONS AND TERMS OF JV AGREEMENT

1. Definitions and Interpretation
2. Joint Venture – Include Equity of members, transferability of shareholding of equity of a partner leaving during the subsistence of the contract.
3. Proposal Submission
4. Performance – To indicate scope of responsibility of each member
5. Language and Law
6. Exclusively
7. Executive Authority
8. Documents
9. Personnel
10. Assignment and Third Parties
11. Severability
12. Member in Default
13. Duration of the Agreement
14 Liability and sharing of risks
15. Insurance
16. Sharing of Promotion and Project Costs, Profits, Losses and Remuneration
17. Financial Administration and Accounting
18. Guarantees and Bonds
19. Arbitration
20. Notices
21. Sole Agreement and Variation

B. SCHEDULES

1. Project and Agreement Particulars
2. Financial Administration Services
3. Allocation of the obligations
4. Financial Policy and Remuneration

*****

FORM No. 11

PRO-FORMA LETTER OF PARTICIPATION FROM EACH PARTNER OF JOINT VENTURE (JV)

(To be executed on non-judicial stamp paper of appropriate value in accordance with relevant Stamp Act and to be registered with appropriate authority under Registration Act.)

No…. Dated

From:
……..
……..

To,
General Manager/Co ,
Dedicated Freight Corridor Corporation of India Limited,
C-16, Khushi Vihar, Patrakar Colony, Mansarovar,
Jaipur-302020Gentlemen,

Re: …"*[Insert name of work*]……."

Ref: Your notice for Invitation for Bid (IFB) No…….
Dated ……..

1. We wish to confirm that our company/firm has formed a Joint Venture with (i)……. & ii)…….. For the purposes associated with IFB referred to above.

(Members who are not the lead partner of the JV should add the following paragraph).*

2. 'The JV is led by … whom we hereby authorise to act on our behalf for the purposes of submission of Bid for ……. and authorise to incur liabilities and receive instructions for and on behalf of any and all the partners or constituents of the Joint Venture.'

OR

*(Member(s) being the lead member of the group should add the following paragraph)**

2. 'In this group we act as leader and, for the purposes of applying for Bid, represent the Joint Venture:

3. In the event of our JV being awarded the contract, we agree to be jointly with i) & ii) …… (names of other members of our JV) and severally liable to the Dedicated Freight Corridor Corporation of India Limited, its successors and assigns for all obligations, duties and responsibilities arising from or imposed by the contract subsequently entered into between Dedicated Freight Corridor Corporation of India Limited and our JV.

4. *I/We, further agree that entire execution of the contract shall be carried out exclusively through the lead partner.

Yours faithfully,
(Signature)
(Name of Signatory)…….
(Capacity of Signatory)……
Company Seal * Delete as applicable

Note: In case of existing joint venture, the certified copy of JV Agreement may be furnished.

FORM No. 12

FORMAT FOR POWER OF ATTORNEY FOR AUTHORISED SIGNATORY OF JOINT VENTURE (JV) PARTNERS

POWER OF ATTORNEY*

(*To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant stamp Act. The stamp paper to be in the name of the company who is issuing the power of Attorney*)

Know all men by these presents, we … do hereby constitute, appoint and authorise Mr/Ms …. who is presently employed with us and holding the position of ……as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our bid for the work of
… Including signing and submission of all documents and providing information / responses to Dedicated Freight Corridor Corporation of India Limited, representing us in all matters, dealing with Dedicated Freight Corridor Corporation of India Limited in all matters in connection with our bid for the said project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this the …… day of ……. 2015.

(Signature of authorised Signatory)

Signature of Lead Partner **Signature of JV Partner(s)**

…… **…….**

(Signature and Name in Block letters of Signatory)
Seal of Company

Witness

Witness 1:
Name:

Address:
Occupation:

Witness 2:
Name:

Address:
Occupation:

**Notes:*

i) To be executed by all the partners jointly, in case of a Joint Venture.

FORM No. 13

FORMAT FOR POWER OF ATTORNEY TO LEAD PARTNER OF JOINT VENTURE (JV)

(*To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant stamp Act. The stamp paper to be in the name of the company who is issuing the power of Attorney)*

POWER OF ATTORNEY*

Whereas Dedicated Freight Corridor Corporation of India Limited has invited Bids for the work of "Work of Construction of Crew Running Room at New Ateli DFC Station Between Ateli – Khatuwas stations on Rewari- Ringus section in Jaipur division of North Western Railway."

Whereas, the members of the Joint Venture comprising of M/s. …, M/s. …, M/s……, and M/s. …. are interested in submission of bid for the work of …*[Insert name of work*]… in accordance with the terms and conditions contained in the bidding documents.

Whereas, it is necessary for the members of the Joint Venture to designate one of them as the Lead Partner, with all necessary power and authority to do, for and on behalf of the Joint Venture, all acts, deeds and things as may be necessary in connection with the Joint Venture's bid for the project, as may be necessary in connection the Joint Venture's bid for the project.

NOW THIS POWER OF ATTORNEY WITNESSETH THAT:
We, M/s. ……, hereby designate M/s. ……, being one of the partners of the Joint Venture, as the lead partner of the Joint Venture, to do on behalf of the Joint Venture, all or any of the acts, deeds or things necessary or incidental to the Joint Venture's bid for the contract, including submission of bid, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Joint Venture in all its dealings with the Railway / DFCCIL or any other Government Agency or any person, in connection with the Bid/contract for the said work until culmination of the process of bidding till the contract agreement if successful, is entered into with the Dedicated Freight Corridor Corporation of India Limited and thereafter till the expiry of the contract agreement.

**To be executed by all the members of the JV except the lead member.*

The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.

We hereby agree to ratify all acts, deeds and things lawfully done by lead member, our said attorney, pursuant to this power of attorney and that all acts deeds and things done by our

aforesaid attorney shall and shall always be deemed to have been done by us/ Joint Venture.

Dated this the …… Day of …….. 2015

…….
(Signature)

…… (Name in Block letters of Executants)
Seal of Company

Witness 1	
Name:	
Address:	
Occupation:	
Witness 2	
Name:	
Address:	
Occupation:	

FORM No. 14
Registered Acknowledgement Due

PROFORMA FOR TIME EXTENSION

No. _____ Dated: _____

_____
_____

Sub: (i) _____ *(name of work).*
(ii) Acceptance letter no. _____
(iii) Understanding/Agreement no. _____

Ref: _____ (Quote specific application of Contractor for extension to the date received) _____
Dear Sir,

1. The stipulated date for completion of the work mentioned above is _____.From the progress made so far and the present rate of progress, it is unlikely that the work will be completed by the above date (or 'However, the work was not completed on this date').

2. Expecting that you may be able to complete the work, if some more time is given, the competent authority, although not bound to do so, hereby extends the time for completion from_____ to _____.

3. Please note that an amount equal to the liquidated damages for delay in the completion of the work after the expiry of _____ *(give here the stipulated date for completion with/without any penalty fixed earlier)* will be recovered from you as mentioned in Clause, 17-B of the Standard General Conditions of Contract for the extended period, notwithstanding the grant of this extension. You may proceed with the work accordingly.

4. The above extension of the completion date will also be subject to the further condition that no increase in rates on any account will be payable to you.

5. Please intimate within a week of the receipt of this letter your acceptance of the extension of the conditions stated above.

6. Please note that in the event of your declining to accept the extension on the above said conditions or in the event of your failure after accepting or acting up to this extension to complete the work by _____ (here mention the extended date), further action will be taken in terms of Clause 62 of the Standard General Conditions of Contract.

Yours faithfully

For and on behalf of the Employer

Name of the Official:-
Stamp/Seal of the Employer

FORM No. 15

CERTIFICATE OF FITNESS

1. (a) Serial Number _____
   (b) Date _____

2. Name of person examined _____
   I certify that I have personally examined *(name)* _____

3. Father's Name: son/daughter of _____, residing at _____

4. Sex _____

5. Residence: _____

6. Date of birth, if available, and/or certified age _____

7. Physical fitness _____

8. Identification marks _____
   _____

Who is desirous of being employed in a factory or on a work requiring manual labour and that his / her age as nearly as can be ascertained from my examination, is _____ years and that he/she is fit for employment in a factory or on a work requiring manual labour as an adult/child.

9. Reasons for:

   (a) refusal to grant certificate, or _____
   (b) Revoking the Certificate _____

_____
Signature or Left Hand
Thumb Impression of the
Person Examined

_____
Signature of Certifying Surgeon

Note: In case of physical disability, the exact details of the cause of the physical disability should be clearly stated

FORM No. 16
Registered Acknowledgement Due

PROFORMA OF 7 DAYS NOTICE
DFCCIL
(Without Prejudice)

To

M/s _____
_____

Dear Sir,

Contract Agreement No. _____
In connection with _____

1. In spite of repeated instructions to you by the subordinate offices as well as by this office in various letters of even no. _____, dated _____; you have failed to start work/show adequate progress and/or submit detailed program me for completing the work.

2. Your attention is invited to this office/Chief Engineer's office letter no. _____ _____, dated _____ in reference to your representation, dated _____.

3. As you have failed to abide by the instructions issued to commence the work/to show adequate progress of work you are hereby given 7 days' notice in accordance with Clause 62 of Standard General Conditions of Contract to commence works / to make good the progress, failing which further action as provided in Clause 62 of the Standard General Conditions of Contract viz. to terminate your Contract and complete the balance work without your participation will be taken.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the Employer
Name of the Official:-
Stamp/Seal of the Employer

FORM No. 17
Registered Acknowledgement Due

PROFORMA OF 48 HRS. NOTICE
DFCCIL
(Without Prejudice)

To

M/s _____
_____

Dear Sir,

Contract Agreement No. _____
In connection with _____

1. Seven days' notice under Clause 62 of Standard General Conditions of Contract was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the work.

2. You are hereby given 48 hours' notice in terms of Clause 62 of Standard General Conditions of Contract to commence works / to make good the progress of works, failing which and on expiry of this period your above contract will stand rescinded and the work under this contract will be carried out independently without your participation and your Security Deposit shall be forfeited and Performance Guarantee shall also be encased and consequences which may please be noted.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the Employer
Name of the Official:-
Stamp/Seal of the Employer

FORM No. 18
Registered Acknowledgement Due

PROFORMA OF TERMINATION NOTICE
DFCCIL
(Without Prejudice)

No. _____ Dated _____

To
M/s _____
_____

Dear Sir,

Contract Agreement No. _____
In connection with _____

Forty eight hours (48 hrs.) notice was given to you under this office letter of even no. Dated _____; but you have taken no action to commence the work/show adequate progress of the work.

Since the period of 48 hours' notice has already expired, the above contract stands rescinded in terms of Clause 62 of Standard General Conditions of Contract and the balance work under this contract will be carried out independently without your participation. Your participation as well as participation of every member/partner in any manner as an individual or a partnership firm/JV is hereby debarred from participation in the tender for executing the balance work and your Security Deposit shall be forfeited and Performance Guarantee shall also be encased.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the Employer
Name of the Official:-
Stamp/Seal of the Employer

FORM No. 19

SAMPLE
FORMAT OF BANK GUARANTEE FOR MOBILISATION ADVANCE

(Clause 1.5.20, Part - I, Chapter - V)

Bank guarantee made on this …… Between …… (Hereinafter called "**the Bank**") of the One Part and Dedicated Freight Corridor Corporation of India Limited. (Hereinafter called "**the Employer**") of the other Part.

WHEREAS Dedicated Freight Corridor Corporation of India Limited has awarded the Contract no……. for "……" (Hereinafter called "**the Contractor**"), having its registered office at ……..

AND WHEREAS vide Clause 1.5.20 of Part - I, Chapter V , Special Conditions of Contract, Mobilization Advance up to ___% (___ percent) of the original contract value of Rs…….. Is payable to the contractor against Bank Guarantees, the contractor hereby applies for Mobilization Advance of ___% (___ percent) amounting to Rs……../- (Rupees……..) of the Contract Price,

Now, we the undersigned, Bank of ……., being fully authorized to sign and to incur obligations for and on behalf of and in the name of Bank of ……..hereby declare that the said Bank will guarantee the Employer the full amount of Rs. ……../- (Rupees……..) as stated above.

We, Bank of ……., do hereby unconditionally, irrevocably and without demur guarantee and undertake to pay the Employer immediately on demand any or all money payable by the contractor to the extent of Rs. ……./-(Rupees……..) without any demur, reservation, context, recourse or protest and/or without any reference to the contractor. Any such demand made by the Employer on the Bank shall be conclusive and binding notwithstanding any difference between the Employer and the contractor on any dispute pending before any court, Tribunal, Arbitrator or any other authority. We agree that the guarantee herein contained shall be irrevocable and shall continue to be enforceable till the Employer discharges this guarantee.

This guarantee is valid till ……..

At any time during the period in which this guarantee still valid of the contractor fails to fulfil its obligation under the Contract, it is understood that the Bank will extend this guarantee under the same condition for the required time on demand by the Employer at the cost of the contractor.

The Guarantee hereinbefore contained shall not be affected by any change in the constitution of the Bank or of the contractor.

The neglect or forbearance of the Employer in enforcement of payment of any money, the payment whereof is intended to be hereby secured or the giving of time by the Employer for the payment hereof shall in no way relieve the Bank of their liability under this Deed.
The expressions "the Employer", "the Bank" and "the contractor" hereinbefore used shall include their respective successors and assigns.
Notwithstanding anything contained herein:
Our liability under this Bank Guarantee shall not exceed Rs……./- (Rupees…….)
This bank Guarantee shall be valid up to…….
We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ……(date of expiry of Guarantee).

In witness whereof we of the Bank have signed and sealed this Guarantee on the ……day of …….. Being herewith duly authorized.
For and on behalf of the Bank of.....
Signature of Authorized Bank Official

Name .....
Designation .....
Stamp/Seal of the bank .....
Signed, sealed and delivered for and on
Behalf of the bank by the above named

..... In the presence of
Witness 1
Signature .....
Name .....
Address .....
Witness 2
Signature .....
Name .....
Address .....

Form no.20

PRE CONTRACT INTEGRITY PACT

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on----------day of the month of---------- 20xx, 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 successors in 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 [A] is willing to Offer/has offered for stores or works.

WHEREAS the [A] is a private company/ public company/ Government undertaking/ partnership/ registered export agency, constituted in accordance with the relevant law in the matter and the CLIENT is a PSU performing its functions or behalf of the President of India.

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 [B] 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 [B], 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 [A] either for themselves or for any person, organization or third party related to the [B], in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the [B].

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 [A] 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. In case any such preceding misconduct on the part of such official(s) in reported by the [A] 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 [B] process. In such a case while an enquiry is being conducted by the CLIENT the proceedings under the [B] would not be stalled.

Commitments of BIDDERS

3. The [A] 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 [B] contract or in furtherance to secure it and in particular committee itself to the following:-

3.1 The [A] 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 advantage in the bidding, evaluation, contracting and implementation of the [B].

3.2 The (A] 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 [B] or any other [B] with the Government for showing or forbearing to show favour or disfavour to any person in relation to the [B] or any other [B] with the Government.

3.3 * [A] shall disclose the name and address of agents and representatives and Indian [A] shall disclose their foreign principals or associates.

3.4 * [A] 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 [A] further confirms and declares to the CLIENT that the [A] 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 [B] to the [A] 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 [A] either while presenting the bid or during pre-contract negotiations or before signing the [B] 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 [B] and the details of services agreed upon for such payments.

3.7 The [A] will not collude with other parties interested in the [B] to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the [B].

3.8 The [A] will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.9 The [A] 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 [A] also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The [A] commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The [A] shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the, [A] or any employee of the [A] or any person acting on behalf of the [A], 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 [A] 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 [A] shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the CLIENT.

4. Previous Transaction

4.1 The [A] 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 [A] agrees that if it makes incorrect statement on this subject, [A] 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 [A] 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 [A] a clause would also be incorporated in the article pertaining to performance Guarantee in the [B] 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 [A] 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 [A] or any one employed by it or acting on its behalf (whether with or without the knowledge of the [A] 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 [B] is signed) shall stand forfeited fully and the CLIENT shall not be required to assign any reason therefore.

(iii) To immediately cancel the [B], 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 [A] from the country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to [A] from the CLIENT in connection with any other [B], 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 [A]. The [A] shall be liable to pay compensation for any loss or damage to the Client resulting from such cancellation/rescission and the client shall be entitled to deduct the amount so payable from the money(s) due to the [A].

(vii) To debar the [A] 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 [A]) to any middleman or agent or broker with a view a view to securing [B] the contract.

(ix) In cases where irrevocable letters of credit have been received in respect of any [B] signed by the client with the [A], The shall not be opened.

(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 The client will entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this pact also on the commission by the [A] 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 Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the CLIENT to the effect that a breach of the provisions of this pact has been committed by the [A] shall be final and conclusive on the [A]. However, the [A] can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

7.1 The [A] 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 found at any stage that similar product/system or sub systems way supplied by [A] 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 [A] to the CLIENT, if the [B] 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 be given)

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 [A] 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 [A] and the [A] 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 [B] to the satisfaction of both the CLIENT and the [A] including warranty period, whichever is later. In case [A] is unsuccessful, this integrity pact shall expire after six months from the date of the signing of the [B].

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	CHIEF EXECUCTIVE OFFICER
Designation	
Deptt./Ministry/PSU	
Witness	Witness
1. _____	1. ----------
2. _____	2._____

Note:
[A] - To be replaced by BIDDER/Seller/Consultant/Consultancy firm/Service provider as the case was may be.
[B] - To be replaced by Contract/Supply Contract/Consultancy Contract/Works Contract as the case was may be.

Form No. 21

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 I am 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 are as 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 credits which were not allowed to be availed before 1^{sl} July, 2017 or reduction in tax rates 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

DRAWINGS

PART V

DRAWINGS

Drawing for the work:- The drawing for the work can be seen in the office of the General Manager/Coordination , Dedicated Freight Corridor Corporation of India Ltd., C-16, Khushi Vihar, Patrakar Colony, Mansarovar , Jaipur-302020 at any time during the office hours Generally 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 to successful tenderer after acceptance of his offer.

END OF DOCUMENT