

ರೈಲು ಮೂಲಸೌಲಭ್ಯ ಅಭಿವೃದ್ಧಿ ಕಂಪನಿ (ಕರ್ನಾಟಕ) ನಿಯಮಿತ

रेल इन्फ्रास्ट्रक्चर डेवलपमेंट कंपनी (कर्नाटक) लिमिटेड

**Rail Infrastructure Development Company (Karnataka) Limited
(K-RIDE)**

(A Joint Venture of Govt. of Karnataka and Ministry of Railways)

TENDER DOCUMENT FOR THE WORK OF

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

TENDER NO. K-RIDE/DL/08/2022

Date:04.05.2022

RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED

Samparka Soudha, 1st Floor,

Dr. Rajkumar Road,

Opposite Orion Mall,

Rajajinagar 1st Block, Bengaluru-560010

Tel +91-6364890811, +91-6364890808.

Email: praveen.kumar.kride@ka.gov.in



TENDER DOCUMENT

(Through e-Tendering Mode)

Tender for the work of :

Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

TENDER NO:	K-RIDE/DL/08/2022, Date: 04.05.2022
TENDER DOCUMENT CAN BE DOWNLOADED FROM	Date: 04.05.2022
DATE OF PRE-BID MEETING	Date: 19.05.2022 IST 16.30 hrs (at K-RIDE office & also through VC)
LAST DATE AND TIME FOR RECEIPT OF BIDS	Date: 03.06.2022, IST 15:00 Hrs (Only electronic tender permitted.)
DATE AND TIME OF OPENING OF COVER ONE OF TENDER (TECHNICAL BID)	Date: 04.06.2022, IST 15:30 Hrs
PLACE OF OPENING OF COVER ONE OF TENDER (TECHNICAL BID)	The opening of the Technical Bid shall take place at e- procurement portal of K-RIDE i.e., https://eproc.karnataka.gov.in
PLACE OF OPENING OF COVER TWO OF TENDERS (FINANCIAL BID)	The opening of the Financial Bid shall take place at e- procurement portal of K-RIDE i.e., https://eproc.karnataka.gov.in
DATE AND TIME OF OPENING OF COVER TWO OF TENDERS	Will be intimated to the Qualified Tenderers through Karnataka Public Procurement Portal.
ADDRESS FOR COMMUNICATION	GM/Civil (Projects) K-RIDE (Rail Infrastructure Development Company (Karnataka) Limited) #8, 1 st Floor, Samparka Soudha, Dr. Rajkumar Road, Opposite Orion Mall Rajajinagar 1 st Block, BENGALURU Tel – 91-6364890811, +91-6364890808. E Mail – praveen.kumar.kride@ka.gov.in

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SECTION: 1

NOTICE FOR INVITATION FOR TENDERS (IFT)

Rail Infrastructure Development Company (Karnataka) Limited

INVITATION FOR BIDS

(Through e-tendering mode)

Tender Notice No. **K-RIDE/DL/08/2022**

Date: 04.05.2022

THE RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED (K-RIDE), having its Corporate office, at #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, Opposite Orion Mall, Rajajinagar 1st Block, Bengaluru-560010, India, which is a Joint Venture of Government of Karnataka and Ministry of Railways invites Bids from eligible Bids, for the construction of works detailed in the table below under **Single stage: Two tender document system (Technical Bid and Financial Bid)**.

SL. NO.	NAME OF WORK	APPROX. VALUE OF WORK (IN ₹ CRS)	TENDER SECURITY/EMD	PERIOD OF COMPLETION
1	2	3	4	5
1	““Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platform, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station , Providing Porta Cabin at LC No. 133, 134 136 and S & T building cum gate lodge for mid- section interlocked LC gates including all Electrical works and other Misc., works upto Karnataka/ Tamilnadu state border in Bangalore Division of South Western Railway”	21.04 Cr	Rs. 21,03,986/-	18 months

NOTE:

1. The Tenderers shall submit the tender through e - procurement portal. Tenderers should scan the registration copy; work done certificate and any other document and submit through online. More information can be had from website www.eproc.karnataka.gov.in
2. On the stipulated date of opening of Tenders, initially, only the Technical Bids are opened through Karnataka Public Procurement Portal. The Technical Bids shall be evaluated by the Employer in accordance with the stipulated Qualification and Evaluation criteria. No amendments or changes to the Technical Bids would be permitted after the opening of Technical Bids.
3. Tenderers who are qualified in the technical evaluation, their Price Bid shall be opened at a date and time advised by the Employer (K-RIDE) through e-tendering portal. The Price Bids are evaluated and the Contract is awarded to the Tenderer whose Tender has been determined to be the lowest evaluated substantially responsive tender.
4. Tenderers are advised to note the eligibility and minimum qualifying criteria specified in the Section 2: Instruction to Tenderers of the tender document.
5. Tenders must be accompanied by a Tender Security/EMD of requisite value. Any Tender received without tender security/EMD shall be summarily rejected.
6. Incomplete Tender submission will be considered non-responsive and such Tenders shall not be considered for further evaluation.
7. Tender Documents can be downloaded free of cost from Karnataka Public Procurement Portal i.e., <https://eproc.karnataka.gov.in> from **04.05.2022** and the Tenders must be submitted online via Karnataka Public Procurement Portal only.

Please note that drawings, if any, referred in the tender document, but not uploaded with the tender document, can be viewed in this office on any working day. The Tenderer can also have a copy of the same on payment of non-refundable cost of Rs. 5,000/- (Rupees Five Thousand only) by a e-Payment mode (credit card/debit card/net banking/UPI) in favour of **Rail Infrastructure Development Company (Karnataka) Limited, Bangalore.**

It will be the responsibility of the Tenderer who is submitting the Tender on downloaded Tender documents to check and see any Addendum/Corrigendum issued in this regard from the website from time to time and ensure submission of bid along with all Addendum/Corrigendum.

In case of any clarification the Tenderer can visit the Rail Infrastructure Development Company (Karnataka) limited Corporate Office Bengaluru at #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, Opposite Orion Mall, Rajajinagar 1st Block, Bengaluru-560010. Tel. No.+91-6364890811.

8. Validity of Tender: Tenders shall remain valid for a period of **120 days** after the Tender submission deadline date prescribed by the employer. A Tender valid for a shorter period shall be rejected by the employer as non-responsive.

9. In exceptional circumstances, the Employer may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender security is requested in accordance with ITT 13, it shall also be extended up to the date mentioned in the letter of request for extension. A Tenderer may refuse the request without forfeiting its Tender security. A Tenderer granting the request shall not be required or permitted to modify its Tender.
10. If, the office happens to be closed on the date of opening of Tender, the Tenders will be opened on next working day at the same time and venue.
11. A **Pre- Bid meeting** will be held on **19.05.2022 at 16.30 Hrs.** IST at the office of K-RIDE, Bangalore to clarify the issues if any and to answer questions on any matter that may be raised at that stage as stated in Clause - 8 of ITT of the Tender document.
12. Other details can be seen in Tender documents.

13. REGISTRATION:

- a. Tenderers are required to enroll on the e-tendering Portal (<https://eproc.karnataka.gov.in>) with clicking on the link "Tenderers Registration" on the e-tender Portal by paying requisite registration fee as applicable.
- b. As part of the enrolment process, the Tenderers will be required to choose a unique user name and assign a password for their accounts.
- c. Tenderers are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication with the Tenderer.
- d. Upon enrolment, the Tenderers will be required to register their valid Digital Signature Certificate (Only Class III Certificates with signing + encryption key usage) issued by any Certifying Authority recognized by CCA India with their profile.
- e. Only one valid DSC should be registered by a Tenderer. Please note that the Tenderers are responsible to ensure that they do not lend their DSC"s to others which may lead to misuse.
- f. Tenderers then logs in to the site through the secured log-in by entering their user ID/password and the password of the DSC / e-Token.
- g. The scanned copies of all original documents should be uploaded on portal.
- h. For any query regarding e-procurement on the Karnataka Public Procurement Portal, contact helpdesk number **+91-8046010000**, **+91-8068948777**, support@eprochelpdesk.com

14. SEARCHING FOR PROPOSAL DOCUMENTS

Once the Tenderers have selected the proposals they are interested in, the Tenderers can pay non-refundable processing fee as per the Karnataka Public Procurement Portal.

15. PRECAUTIONS FOR SUBMITTING / PREPARATION OF PROPOSALS THROUGH E TENDERING PORTAL

- a. Tenderer, in advance, should get ready the proposal documents to be submitted as indicated in the proposal document / schedule and generally, they can be in PDF /JPEG formats.
- b. Tenderer should log into the website well in advance for the submission of the proposal so that it gets uploaded well in time i.e., on or before the proposal submission time. Bidder will be responsible for any delay due to other issues.
- c. The Tenderer has to digitally sign and upload the required proposal documents one by one as indicated in the tendering document.
- d. The server time (which is displayed on the consultant's dashboard) will be considered as the standard time for referencing the deadlines for submission of the proposals by the consultants, opening of proposals etc. The consultants should follow this time during proposal submission.

16. The Tenderer should furnish the Name of the individual / firm/ Company / Joint venture with address and telephone number with place of registration, year of incorporation etc.,

17. Tender by a joint venture of contractors is permitted subject to conditions indicated in tender document.

18. The application made by the firm / company / Joint Venture shall be signed by a person holding the power of attorney, in which case the Tenderer shall furnish a copy of power of attorney.

19. Employees Provident Fund Registration Certificate

The Contractor shall furnish EPF Registration Certificate before entering into agreement in the event of award of work to them after tender, subject to compliance with the following conditions:

- a) If the contractor is registered already with the EPF authorities, they should produce a copy of the EPF Registration Certificate.
- b) If not registered with the EPF authorities, the Tenderer should produce an undertaking at the time of participating in the tender that he shall within 7 days of the close of every month submit a Statement to Engineer showing the recoveries of contribution in respect of Employees by or through him and shall also furnish such information as the Engineer is required to furnish under the provisions of the Scheme to the Commissioner EPF.
- c) However, having given an undertaking to this effect if the Contractor does not furnish the information, the Employer will deduct the necessary amount from the amount due to the Contractor. Notwithstanding the above, the Contractor will be liable for any consequential penalty /damages levied by the EPF authorities.

20. The necessary certificates / documents in support fulfilling qualifying criteria stipulated separately shall be scanned and attached to e-procurement document. The original documents if

required by the Employer shall be produced whenever asked by Employer on Technical Bid/ Financial Bid.

21. The intending Tenderers are advised to visit the site of work before attending the Pre- Bid meeting and also before submitting the Tenders.
22. The qualification criteria as indicated in bid document should be met by the intending Tenderers.
23. Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Govt. of Karnataka, Govt of India and any PSUs thereof.
24. **Pre-bid meeting** will be held on **19.05.2022 IST 16.30 hrs** in the office of K-RIDE Bangalore
25. The conditional Tenders will not be accepted.
26. The Employer is not responsible for any delay in accessing Karnataka Public Procurement Portal.
27. The rates quoted by the Tenderer must be inclusive of all Taxes, Duties etc.,
28. The Employer reserves the right to either postpone or to cancel the entire process of tender.
29. If Employer wishes to engage third party consultants for quality control assessment, apart from the Employer quality control and field tests, the Tenderer should co-operate with both Quality control authorities and the third party.
30. Building and other construction workers welfare: The Tenderer shall subscribe 1% of gross amount of each bill payable to him in respect of contract to the building and other construction workers welfare cess as per GO No: LD 300 LET 2006, Bangalore, dated: 18-01-2007. The amount of subscription will be recovered out of payable amount to him in each bill. This component is deemed to have been included in the quoted rate.
31. **Last Date of Receipt and opening of Bids:** The completed Tenders must be submitted through Karnataka Public Procurement Portal <https://eproc.karnataka.gov.in> not later than **15.00 Hrs** on **03.06.2022** and shall be opened on **04.06.2022 at 15.30 hrs**. K-RIDE will not be responsible for any delays in the receipt of Tender by K-RIDE. Late Tenders (received after stipulated date and time of submission of Tenders) shall not be accepted under any circumstances. K-RIDE reserves the right to accept/reject any or all proposals without assigning any reason thereof.
32. Any suit or application, arising out of any dispute or differences on account of this tender shall be filed in a competent court at Bengaluru, Karnataka only and no other court or any other district of the country shall have any jurisdiction in the matter.

33. **Address for Communication:** Interested eligible Tenderers may obtain further information from the following address:

***GM/Civil (Projects),
Rail Infrastructure Development Company (Karnataka) Limited,
#8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, Opposite Orion Mall
Rajajinagar 1st Block, Bengaluru-560010
Tel +91-6364890811, +91-6364890808.
E-mail: praveen.kumar.kride@ka.gov.in***

**For any Query regarding e tendering portal/ Tender submission please contact
helpdesk Number [+91-8046010000](tel:+91-8046010000), [+91-8068948777](tel:+91-8068948777)
Email: support@eprochelpdesk.com**

K-RIDE

SECTION – 2

INSTRUCTIONS TO TENDERERS (ITT)

SECTION 2: INSTRUCTIONS TO TENDERERS (ITT)
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A. GENERAL

1. SCOPE OF THE TENDER:

1.1 THE RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED (K-RIDE), Having its Corporate office, at #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road, Opposite Orion Mall, Rajajinagar 1st Block, Bengaluru-560010, India, which is a Joint Venture of Government of Karnataka and Ministry of Railways invites Tenders from Eligible Tenderers, for the construction of works details as given in the invitation for the Tenders (IFT). The tenderers may submit the tenders for the works detailed in the IFT.

2. ELIGIBLE TENDERERS:

2.1 The Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by Govt. of Karnataka, Govt of India and PSUs.

2.2 JOINT VENTURES:

Tendering by a joint venture of Contractors is permissible subject to following conditions:

- a. If the Applicant comprises a number of firms combining their resources in a joint venture, the legal entity constituting the joint venture and the individual partners in the joint venture shall be registered after award of work and shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by GOK.
- b. The joint venture must satisfy collectively the Qualification criteria. For this purpose, the following data of each member of the joint venture may be added together to meet the collective qualifying criteria:
 - i. Average annual turnover (sub clause 3.2a).
 - ii. Particular experience including key production rates. (Sub clause 3.2b & c).
 - iii. Financial means (sub clause 3.3b liquid assets, 3.6 assessed available Tender capacity & the audited balance sheets or other financial statements acceptable to the employer, for the last five years shall be submitted and must demonstrate current soundness of the applicant's financial position and indicates its prospective long-term profitability.
 - iv. Personnel capabilities (sub clause 3.3c: List of minimum key staff/position required during the contract implementation).
 - v. Equipment capabilities (sub clause 3.3a: own/lease equipment's).
- c. Each partner must satisfy the following criteria individually:
 - i. General construction experience for the period of years stated in Tender document (Instructions to Tenderers: **The intending Tenderer/firm/company/ joint venture shall provide evidence that it has been actively engaged in "Construction of any Civil engineering work involving building construction works" for at least a period of 5 years prior to the submission of tender. (From FY: 17-18 to FY: 21-22)**

- ii. Adequate sources to meet financial commitments on the other contracts (Sub clause 3.5: Accessed availed Tender capacity).
 - iii. **Financial Soundness (Instructions to Tenderers:** The intending Tenderer/firm/company shall provide the audited balance sheets or other financial statements acceptable to the employer for the last five years and must demonstrate the current soundness of the applicant's financial position and indicate its prospective long-term profitability. If deemed necessary, the employer shall have the authority to make enquiries with the applicants' bankers).
 - iv. **Litigation History (Instructions to Tenderers:** The intending Tenderer/firm/company/ joint venture shall provide accurate information on the related application form about any litigation or Arbitration resulting from contracts completed or on going under its execution over the last five years. The consisting history of awards against the tenderer or any partner of a joint venture may result in failure of the application).
 - v. In accordance with the above, the Application shall include all related information required for individual partners in the joint venture
- d. **Joint venture is restricted to 3 (Three) number of partners.** One of the partners, who is responsible for performing a key function in contract management or is executing a major component of the proposed contract, shall be nominated as being in charge during the tendering periods and, in the event of a successful tender, during contract execution. The partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture; this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners.
- e. All partners of the joint venture shall be legally liable, jointly and severally, during the tendering process and for the execution of the contract in accordance with the contract terms, and a statement to this effect shall be included in the authorization mentioned under Sub-Clause 2.2(d) above. **To enable the above, each of the partners of the joint venture shall meet not less than 25% of the qualifying criteria specified for Average annual turnover and Line of credit / liquid assets. All members of the joint venture must have experience in execution of similar work.**
- f. A copy of the Joint Venture Agreement (JVA) entered into by the partners shall be submitted with the tender. Pursuant to Sub-Clauses 2.2(c) to 2.2(f) above, the JVA shall include among other things: the JV's objectives; the proposed management structure; the contribution of each partner to the joint venture operations; the commitment of the partners to joint and several liability for due performance; recourse/sanctions within the JV in the event of default or withdrawal of any partner; and arrangements for providing the required indemnities.
- The lead partner shall enter into a Joint Venture agreement of Rs. 200.00 stamp paper in the prescribed format which shall be concluded prior to Tender and enclosed to the Tender document J.V. Partner shall not enter in to multiple JV's with different Tenderers of the same work.**
- g. The qualification of a joint venture does not necessarily qualify any of its partners to tender individually or as a partner in any other joint venture or association. In case of dissolution of

SECTION:2: - INSTRUCTIONS TO TENDERERS (ITT)

a joint venture prior to the submission of tenders, any of the constituent firms may qualify if they meet all of the qualification requirements, subject to the return approval of the employer. Individual members of a dissolved joint venture may participate as sub-contractor to qualified applicants, subject to the provisions mentioned below:

- “No firm can be a sub-contractor while submitting a tender individually or as a partner of a joint venture in the same tendering process. A firm, if acting in the capacity of sub-contractor in any tender, may participate in more than one tender, but only in that capacity. A tenderer who submits, or participates in, more than one tender will cause all the proposals in which the tender has participated to be disqualified.”
- A firm shall submit only one Tender in the same Tendering process, either individually as a Tenderer or as partner of Joint Venture.
- The necessary certificates/documents in support of pre-qualification criteria fulfilled as stipulated shall be scanned and attached to e-tender document. Scanned signature of the Tenderer/authorized representatives of the Tenderer shall be attached while uploading the Tender document.

Any Tenderer who is otherwise technically qualified withdraws from the Tender process at any stage before a final decision is taken on the tender, the EMD of such Tenderer shall be forfeited, the name of such Tenderer shall be removed from the category list of contractors at least for a minimum period of one year in K-RIDE beside making such Tenderer liable for blacklisting.

- Tenders submitted by all Tenderers in the process of Tender evaluation will be opened even if the Tenderer withdraws from the Tender process by not submitting the original documents for verification or for any other reasons and the prices quoted by them will be looked into, to ascertain if there is collision amongst the Tenderers to determine the competitiveness of the L1 price quoted by other Tenderers, as per the decision by the K-RIDE.
- Prior to awarding of the work, the Lowest (L-1) Tenderer should produce the original documents in support of the uploaded documents to enter in to the agreement. If the lowest Tenderer (L-1) does not produce the original documents for entering into the agreement then his Tender can be treated as non-responsive Tender as per clause 26(4) of the KTPP Rules. The name of the Tenderers who do not produce the original documents shall be removed/debarred from the select list of K-RIDE enrollment and barred from participation in any of the tenders to be invited by K-RIDE a part from forfeiting the EMD paid through e-cash.
- The bidder, JV Partner shall not be under Corporate Debt Restructuring (CDE)/ Strategic Debt Restructuring (SDR) or Bureau of Industrial & financial reconstruction (BIFR) in last 5 years to bid submission date. In this regard, the bidder shall submit along with bid, a certificate with a declaration that, the bidder is not under CFR/SDR or BIFR.
- Further information about e-tendering can be had from Karnataka Public Procurement Portal <http://eproc.karnataka.gov.in>

3. QUALIFICATION OF THE TENDERER.

3.1 All the tenderers shall provide the requested information accurately and sufficient details in section 3: Qualification information. The Joint Venture to be formed prior to the Bidding.

Pre-qualification will be based on Applicants meeting all the following minimum pass–fail criteria regarding their general and particular construction experience, financial position, personnel and equipment capabilities, and other relevant information as demonstrated by the Applicant's responses in the Information Forms attached to the Letter of Application. Additional requirements for joint ventures are given in para 2.2.

3.2 The following qualification criteria should be met by the intending Tenderers.

a) To qualify for award of this contract, each tenderer in its name should have in the last five financial years, i.e. from 2017-18 to 2021-22 should have achieved in atleast two financial years a minimum financial turnover (**in all classes of construction work only**) of **Rs.31.56 Crores**.

NOTE: The Tenderers shall submit certificates to this effect which may be attested certificates from the concern departments/ Client or Audited balance sheet duly certified by the chartered accountant/ certificate from Chartered Accountant duly supported by audited balance sheet. The Turnover certificate duly certified by statutory Auditor should be uploaded. Financial turnover of previous years will be given a weightage of 10% per year as indicated in qualification information (Tender Forms) Form FIN-2 based on the rupee value to bring them to current FY: 2021-22 price value.

b) The Tenderer/Firm/Company/JV should have satisfactorily completed at least one similar work such as **“Any Civil engineering work involving building construction works”** of value not less than **Rs. 10.55 Crores** at current FY: 2021-22 price level in the last five financial years. (FY 2017-18 to FY 2021-22)

NOTE:

1. The criteria above applies to the Individual Tenderer/Firm/company/Joint venture also. The experience certificate from the competent Govt./Semi Govt/Public Sector undertaking shall be furnished. The certificate should be issued by not below the rank of the Executive Engineer/ Employer in case of Govt./Semi Govt. authorities, General Manager in case of Public Sector Undertaking to be submitted certificate regarding the same duly signed by an officer not below the rank of the Executive Engineer to be submitted along with the technical Tender.
2. Similar work is defined as below:
“Any Civil engineering work involving building construction works”.
3. The contract is considered as completed if 90% or more of the work is physically completed which is to be substantiated by a certificate from the Employer who has awarded the contract to the Bidder and the contract amount so received should be equal to or more than the minimum value as per eligibility criteria 3.2 (b).

SECTION:2: - INSTRUCTIONS TO TENDERERS (ITT)

4. For completed works, the value of work done shall be updated to FY 2021-22 price level assuming 10% inflation for Indian rupees every year. Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under: Bids will be compared in Indian Rupees only. This will be achieved by conversion of the Foreign Currency portion of the Bid into Indian Rupees by using the Exchange Rates published by Financial Benchmarks India Pvt. Ltd (www.fbil.org.in) 28 (twenty-eight) days before the latest date of Bid submittal, and then adding the same to the Indian Rupee portion of the Bid. In case this particular day happens to be a holiday, the exchange rate published by Financial Benchmarks India Pvt. Ltd (www.fbil.org.in) on the next working day will be considered.
5. In case of JV/Consortium, full value of the work, if done by the same JV shall be considered. However, if qualifying work (s) done by them in JV/Consortium having different constituents, then the value of work as per their percentage participation in such JV/Consortium shall be considered.

c) **The intending Tenderer / firm/ company / Joint Venture should have executed all the components within last five financial years, i.e. 2016-17 to 2020-21 and Each component should have been executed in any one year (Any continuous 12 months).**

Component No.	Nature of Work	Minimum component of work
1	Cement concrete (including RCC and PSC)	330 cum
2	Earthwork in excavation and embankment (combined quantities)	530 cum
3	Structural Steel works	75 MT
4	Pre-cast concrete works	100 cum
5	The tenderer or his identified sub-contractor should possess valid electrical license for executing building electrification works and should have executed similar electrical works totalling	Rs. 45 Lakhs

NOTE: -

1. The above criteria apply to the Individual Tenderer/Firm/ company / Joint Venture also. The experience Certificate from the competent Govt./Semi Govt./Public Sector undertaking shall be furnished. The certificate should be issued by not below the rank of the Executive Engineer/Employer in case of Govt./Semi Govt. authorities, General Manager in case of Public Sector Undertaking, to be submitted along with the technical tender.
2. The qualifications, capacity, and resources of proposed subcontractors will not be taken into account in assessing those of individual or joint venture Applicants, unless they are named specialist subcontractors.

3.3 Each Tenderer should further demonstrate:

- 3.3 a) KEY PLANT AND EQUIPMENT: Availability by owning/lease/hire of the required following key and critical equipment's deployed for this work, the relevant documents (Commitment agreements etc.) regarding availability for this work are to be furnished:**

The intending Tenderer/firm/company/Joint venture should furnish details of ownership / lease certificates of the following minimum requirement of machineries:

PLANT AND EQUIPMENT**(I) KEY AND CRITICAL EQUIPMENTS**

SI No.	Type of Equipment required for the work	Proposed to be Deployed (Minimum)	Remarks
1.	JCB.	1 Nos	Own/ Lease/Hire
2.	Hydraulic excavator (1 cum bucket)	1 Nos	Own/Lease/Hire
3.	Hydra	2 Nos	Own/ Lease/Hire
4	Tippers/trucks/Water tankers	4 Nos	50% own+50% Lease/Hire
5	Concrete pump	1 no.	Own/Lease/Hire
6	Survey equipment: Total station	1 no.	Own
7	Survey equipment Auto level	1 no.	Own

- 3.3 b) LIQUID ASSETS: The Tenderer / firm/company/Joint Venture should furnish details of liquid assets and or availability of credit facilities of Rs. 2 Crores for the work mentioned above for meeting the required funds in the form of own funds /credit lines / certificate from scheduled Nationalized Bank.**

The Bidder should have access to or has available liquid assets, lines of credit and other financial means to meet cash flow. The audited balance sheet and/or banking reference certified by Chartered Accountant with their stamp, signature and membership number shall be submitted by the Tenderer along with the Tender.

Banking reference should contain in clear terms the amount that bank will be in position to lend for this work to the applicant/member of the joint venture/Consortium. In case the Net Current Assets (as seen from the balance sheet) are negative, only the banking references will be considered. Otherwise, the aggregate of Net Current Assets and submitted banking references will be considered for working out the Liquidity.

The banking reference should be, from a scheduled Bank in India it should not be more than three months old as on date of submission of Bids.

In case of JV firm's overall liquidity of JV firm shall be assessed by arithmetic sum of liquidity of all members of JV as specified in JV matrix.

- 3.3 c) **LIST OF MINIMUM KEY TECHNICAL PERSONNEL:** List of Minimum Key Technical personnel required for the work are as under and should be enrolled in company/firm/Joint Venture under Employment register and document should be uploaded. The Contractor shall have a competent team of Managers, Engineers, Technical staff etc. so as to complete the work satisfactorily as per various requirements of the contract. The Key Positions not limited to and corresponding qualification and experience are as under:

Sl. No.	Designation	Qualification	Experience level (For similar works)	Min. No. Required
1	Project Manager (Team Leader)	Bachelor's Degree/Post Graduate Degree in Civil Engineering	Minimum 12 years total experience and 5-year experience in the role of Project Manager in the execution of similar type of work.	1
2	QA & QC Manager.	Bachelor's Degree in Civil Engineering	Minimum 8 years total experience and 5-year experience in the role of QA&QC Manager in the execution of similar type of work.	1
3	Civil Engineer	Bachelor's Degree in Civil Engineering	Total minimum experience 5 Years (Minimum 02 years in Building construction works)	1
4	Junior Civil Engineer	Diploma in Civil Engineering	Total minimum experience 4 Years.	2

Note: The CV's to be given for Serial No. 1 as per Form-6 of Section-3 and Serial No. 2, 3 & 4 the details to be given as per Form-5 of Section-3 (Qualification information /Bidding Forms).

- 3.4 To qualify for a package of contracts made up of this and other contracts for which tenders are invited in this IFT, the Tenderer must demonstrate having experience and resources to meet the aggregate of the qualifying criteria for the individual contracts.
- 3.5 Sub-contractors' experience and resources shall not be taken into account in determining the Tenderer's compliance with the Qualifying Criteria.
- 3.6 **BID CAPACITY:** Tenderers who meet the above specified minimum qualifying criteria, will only be qualified, if their available tender capacity is more than the total tender value. The available tender capacity will be calculated as under:

Assessed available tender capacity = (A*N*1.5 - B) Where

A = Maximum value of civil engineering works executed in any one year during the last five Financial years ending 31.03.2021 taking into account the completed as well as works in progress.

SECTION:2: - INSTRUCTIONS TO TENDERERS (ITT)

N = Number of years prescribed for completion of the works for which tenders are invited.

B = Value at current price level (updated to FY 2021-22 price level) of existing commitments and on-going works to be completed during the next two and half years (*period of completion of the works for which Tenders are invited*).

Note: Updation of Price Level shall be done at 10% per year.

The statements showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Employer in charge, not below the rank of an Executive Engineer or equivalent.

3.7 NETWORTH: The Bidder's net worth for the last Financial Year calculated as the difference between total assets and total liabilities **should be Positive**.

3.8 Even though the Tenderers meet the above criteria, they are subject to be disqualified if they have:

- made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.; and/or
- participated in the previous Tender for the same work and had quoted unreasonably high tender prices and could not furnish rational justification.

3.9 ELIGIBILITY CRITERIA TABLE/MATRIX:

Requirement	Single Entity	Joint Venture			Submission Requirements
		Lead Partner	Other Partners	All partners combined	
Clause: 3.2.(a) (Annual construction turnover in at least two out of five financial years)	Must meet the requirement	Must meet 50% of the requirement	Must meet 25% of the requirement	Must meet the requirement	Form FIN-2
Clause: 3.2 (b) One Similar work	Must meet the requirement	Must meet the requirement	Must have experience in similar work.	Must meet the requirement	Form at para 1.3/section:3
Clause: 3.2 (c) 1 Cement concrete (including RCC and PSC)	Must meet the requirement	All Partners Combined Must Meet requirement			Form at para 1.4/Section:3

SECTION:2: - INSTRUCTIONS TO TENDERERS (ITT)

Clause: 3.2 (c) 2 Earthwork in excavation and embankment (combined quantities)	Must meet the requirement	Must Meet requirement by any JV partner. Or through Nominated sub-contractor.			Form at para 1.4/Section:3
Clause: 3.2(c) 3 Structural Steel works	Must meet the requirement	All Partners Combined Must Meet requirement. Or through Nominated sub-contractor.			Form at para 1.4/section:3
Clause: 3.2(c) 4 Pre-cast concrete works	Must meet the requirement	All Partners Combined Must Meet requirement			Form at para 1.4/section:3
Clause: 3.3 a (I) Key and Critical Equipments	Must meet the requirement	All Partners Combined Must Meet requirement.			Form at para 1.6/section:3
Clause: 3.3(b) Liquid Asset	Must meet the requirement	Must meet 50% of the requirement	Must meet 25% of the requirement	Must meet the requirement	Form at para 1.10/section:3
Clause: 3.3(c) Minimum Key Technical Staff	Must meet the requirement	All Partners Combined Must Meet requirement			Form No.5 & 6 of Section 3
Clause: 3.6 Bid capacity	Must meet the requirement	All Partners Combined Must Meet requirement			Form at para 1.5/section:3 and Form FIN-3/ section:3
Clause: 3.7 Net worth	Must meet the requirement	Must meet the requirement	Must meet the requirement	Must meet the requirement	Form FIN-1/ section:3

3.10 The applicant must attach with their application, a note giving a general description on the approach to the construction methods, technologies, quality assurance schemes proposed, deployment schedule of equipment proposed to be used, etc., for ensuring completion of the work as per specifications within the desired time-frame.

4. ONE TENDER PER TENDERER:

4.1 Each tenderer shall submit only one tender for one package. A tenderer who submits or participates in more than one Tender (other than as a sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Tenderer's participation to be disqualified.

5. COST OF TENDERING:

5.1 The tenderer shall bear all costs associated with the preparation and submission of his tender, and the Employer will in no case be responsible and liable for those costs.

6. SITE VISIT:

- 6.1 The Tenderer at his own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for construction of the Works. The cost of visiting the Site shall be at the Tenderer's own expense.

B -TENDER DOCUMENTS

7. CONTENT OF TENDER DOCUMENTS

- 7.1 The set of tender documents shall have all the Sections given in content page.

8. CLARIFICATION OF TENDER DOCUMENTS

- 8.1 A prospective tenderer requiring any clarification of the tender documents may notify the Employer in writing or by cable (hereinafter "cable" includes telex, E-Mail and facsimile) at the Employer's address indicated in the invitation to tender. The Employer will respond to any request for clarification which he receives earlier than 15 days prior to the deadline for submission of tenders. Copies of the Employer's response will be forwarded to all purchasers of the tender documents, including a description of the enquiry but without identifying its source.

8.2 Pre-tender meeting:

- 8.2.1 The tenderer or his authorized representative is invited to attend a pre-tender meeting which will take place at office of **K-RIDE Bangalore**.

Venue: #8, 1st Floor, Samparka Soudha, Dr. Rajkumar Road,
Opposite Orion Mall, Rajajinagar 1st Block,
Bengaluru-560010
Tel +91-6364890811

Date: 19.05.2022 Time: IST 16.30 Hrs.

- 8.2.2 **If the tenderer wishes to attend Pre – Bid meeting through VC. The bidder is requested to submit his request in the above said mail id by 16.05.2022 by 16.30 hrs.**

- 8.2.3 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

- 8.2.4 The tenderer is requested to submit any questions on mail id Praveen.kumar.kride@ka.gov.in or by cable to reach the Employer not later than 16.05.2022.

8.2.5 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be published without delay to all purchasers of the tender documents. Any modification of the tender documents listed in Sub-Clause 7.1 which may become necessary as a result of the pre-tender meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 9 and not through the minutes of the pre-tender meeting.

8.2.6 Non-attendance at the Pre-Tender meeting will not be a cause for disqualification of a Tenderer.

9. AMENDMENT OF TENDER DOCUMENTS

9.1 Before the deadline for submission of Tenders, the Employer may modify the tender documents by issuing addendum

9.2 Any corrigendum / addendum issued shall be part of the tender documents and shall be made available on the website or e-portal. The Provisions in corrigendum /addenda shall take priority over the Tender Documents issued previously.

9.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their tenders, the Employer shall extend as necessary the deadline for submission of Tenders, in accordance with Sub-Clause 16.2 below.

C. PREPARATION OF TENDERS

10. DOCUMENTS COMPRISING THE TENDER

- 10.1 The Tender shall be submitted in two covers
- (as per Karnataka Public Procurement Portal) and shall contain the documents as follows.

10.1.1 First Cover (Document):

- Earnest Money Deposit;
- Qualification Information as per formats given in Section 3;

10.1.2 Second Cover (Document):

- The Tender (in the format indicated in Section: 4) (as per Karnataka Public Procurement Portal)
- **Price Schedule (Section 9); online through Karnataka Public Procurement Portal, no hardcopy of commercials should be attached or disclosed. (as per Karnataka Public Procurement Portal)**

And any other materials required to be completing and submitting by Tenderers in accordance with these instructions. The documents listed under Sections 3, 4, 6 and 9 shall be filled in without exception.

- 10.2 Tenderers submitting tenders together with other contracts stated in the IFT to form a package will so indicate in the tender together with any discounts offered for the award of more than one contract.

11. TENDER PRICES

- 11.1 The contract shall be for the whole works as described in Sub-Clause 1.1, based on the Price Schedule submitted by the Tenderer.
- 11.2 Deleted.
- 11.3 All duties, taxes, and other levies payable by the contractor under the contract, or for any other cause, shall be included in the Price schedule, prices and total Tender Price submitted by the Tenderer.
- 11.4 The amount quoted by the Tenderer shall be subject to adjustment during the performance of the Contract in accordance with the provisions of Clause of the Conditions of Contract.

12. TENDER VALIDITY

- 12.1 Tenders shall remain valid for a period not less than **one hundred and twenty days** after the deadline date for tender submission specified in Clause 16. A tender valid for a shorter **period shall be rejected by the Employer as non-responsive.**
- 12.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the Tenderers may extend the period of validity for a specified additional period. The request and the Tenderers' responses shall be made in writing or by cable. A Tenderer may refuse the request without forfeiting his earnest money deposit. A Tenderer agreeing to the request will not be required or permitted to modify his tender, but will be required to extend the validity of his earnest money deposit for a period of the extension, and in compliance with Clause 13 in all respects.

13. EARNEST MONEY DEPOSIT (TENDER/BID SECURITY)

- 13.1 Earnest Money Deposit/ Tender security (as per Karnataka Public Procurement Portal): The Tenderer shall furnish, as part of his tender, Earnest Money Deposit (EMD) in the amount as shown in column 4 of the Table of IFT for this particular work. This Earnest Money Deposit shall be paid by e-payment through Credit card/ Debit Card/Net Banking/ Remittance at the Bank counter/ NEFT/RTGS only as specified in the e-procurement portal (e-proc help line desk no. 8046010000, 8068948777 to be contacted for any query).
- 13.2 Deleted.
- 13.3 Any tender not accompanied by an acceptable Earnest Money Deposit and not secured as indicated in Sub-Clauses 13.1 above shall be rejected by the Employer as non-responsive.
- 13.4 The earnest money deposit of the successful Tenderer will be discharged when the Tenderer has signed the Agreement and furnished the required Performance Security.

13.5 The earnest money deposit may be forfeited:

- (A) If the Tenderer withdraws the Tender after tender opening during the period of tender validity;
- (B) If the Tenderer does not accept the correction of the Tender Price, pursuant to Clause 24; or
- (C) In the case of a successful Tenderer, if the Tenderer fails within the specified time limit to
 - (i) sign the Agreement; or
 - (ii) furnish the required Performance Security.

14. FORMAT AND SIGNING OF TENDER

Tenderer shall submit the Tender electronically before the submission date and time published in Karnataka Public Procurement Portal. The Tenderer must submit Technical and Financial Tender as described in ITT.

All pages of the tender where entries or amendments have been made shall be initialed by the person signing the tender. The Tender shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Tenderer, in which case such corrections shall be initialed by the person signing the Tender.

Language of Tender	The language of the Tender: English
Technical Tender	Alternative technical solutions are not permitted.
Technical Tender Documents	All the Forms of Section 3: Qualification Information/Bidding Forms.
Alternative Bids/Tenders	Alternative Bids are not permitted.
Currencies of Tender and Payment	The amount (Lumpsum Price) shall be quoted by the Tenderer entirely in Indian Rupees (INR). For Evaluation and comparison purposes, the currencies of the Tender shall be converted in to Indian Rupees.
Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the Person signing the Tender	<p>The written confirmation of authorization to sign on behalf of the Tenderer shall consist of:</p> <ul style="list-style-type: none"> a) In case of Private/Public Companies, a POA from the Director of the Company who has been authorized by the Board of Directors through resolution to sign on behalf of the Company. Copy of Board Resolution shall also be submitted. b) In case of proprietorship Tenderers, Power of Attorney by the Proprietors. c) In case of partnership Tenderers, Power of Attorney duly signed by all the partners. d) In case of Limited Liability Partnership (LLP), a POA from the Director of the Company who has been authorized by the Board of Directors through resolution to sign on behalf of the Company. Copy of Board Resolution shall also be submitted.

	e) In case of Joint Venture, Power of Attorney duly signed by individual partners to the Lead partner as per the form given in Section-4 with stipulated documents.
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The Bid shall be digitally signed by using class-III digital signature of a person who is duly authorized to sign on behalf of the bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. If either the Letter of Technical Bid or Letter of Price Bid or Bid-Security Declaration (if applicable) is not signed, the Bid shall be rejected. All pages of the bid, except for un-amended printed literature, shall be signed or initialed by the person signing the bid.

- I. If the Tender is submitted by proprietary firm, it shall be signed by the proprietor above his full name, full name of his firm with his current address.
- II. If the Tender is submitted by a firm in partnership, it shall be signed by a partner holding the power of Attorney for the firm. A certified copy of the Partnership deed and power of attorney shall accompany the Tender; Alternatively, it shall be signed by all the partners.
- III. If the Tender is submitted by a limited company or a limited corporation, it shall be signed by a duly authorized person holding the power of attorney for the firm. A certified copy of the power of attorney shall accompany the Tender.
- IV. If a Tender is submitted by a Joint venture/Consortium, each firm in the Joint venture/Consortium shall furnish the evidence admissible in law /Power of Attorney to sign the Form of Tender and Lead member as stated in JV Agreement shall sign the Tender documents for submission of Tender.

Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender

D. SUBMISSION OF TENDERS

15. SEALING AND MARKING OF TENDERS

Tenderer shall submit the Tender electronically before the submission date and time published.

16. DEADLINE FOR SUBMISSION OF THE TENDERS

- 16.1 Tenders must be submitted online through Karnataka Public Procurement Portal to the Employer on or before the date as specified in the Karnataka Public Procurement Portal and the submission of tender is the responsibility of the Tenderer.
- 16.2 The Employer may extend the deadline for submission of tenders by issuing an amendment in accordance with Clause 9, in which case all rights and obligations of the Employer and the Tenderers previously subject to the original deadline will then be subject to the new deadline.

17. LATE TENDERS

- 17.1 In online e-procurement system, the Tenderer shall not be able to submit the Tender after the Tender submission time and date as the icon for the task in the Karnataka Public Procurement Portal will not be available. Any Tender received by the Employer after the deadline prescribed in Clause 16 will be rejected.
- 17.2 "It shall be the responsibility of the tenderers to ensure that their tender is submitted in the Karnataka public procurement portal within the last date and time specified for the receipt of the tenders

18. MODIFICATION AND WITHDRAWAL OF TENDERS

- 18.1 Tenderer may modify and correct or upload any relevant document in the portal till Tender submission date and time, as published in the Karnataka Public Procurement Portal.
- 18.2 No Tender may be modified after the deadline for submission of Tenders.
- 18.3 Withdrawal or modification of a Tender between the deadline for submission of Tenders and the expiration of the original period of Tender validity specified in Clause 12.1 above or as extended pursuant to Clause 12.2 may result in the forfeiture of the earnest money deposit pursuant to Clause 13.
- 18.4 Tenderers may only offer discounts to, or otherwise modify the prices of their Tenders by submitting Tender modifications in accordance with this clause, or included in the original Tender submission.

E. TENDER OPENING AND EVALUATION

19. OPENING OF FIRST COVER (Document): Opening of First Cover (Document) of all Tenders and evaluation to determine qualified Tenderers:

- 19.1 The Employer will open the First Covers (Document) of all the Tenders received (except those received late or withdrawn), including modifications for First Cover (Document) made pursuant to Clause 18, in the presence of the Tenderers or their representatives who choose to attend as per Karnataka Public Procurement Portal on the date and the place specified in Clause 16. In the event of the specified date of Tender opening being declared a holiday for the Employer, the Tender will be opened at the appointed time and location on the next working day.

The following procedure shall be followed at the tender opening: -

- (a) List of submitted tenders termed as RECEIVED and list of incomplete tenders termed as DRAFT shall be displayed.
- (b) All tender payments successfully received shall be displayed.
- (c) The tenders which have been submitted in Karnataka Public Procurement Portal and whose tender payments were successfully received shall be opened.
- (d) The name of the tenderers shall be published in the Karnataka Public Procurement Portal.

19.2 DELETED

19.3 The Tenderer name, the presence or absence of earnest money deposit (amount, format and validity), the submission of qualification information and such other information as the Employer may consider appropriate will be announced by the Employer at the opening.

19.4 The Employer shall prepare minutes of the Tender opening, including the information disclosed to those present in accordance with Sub-Clause 19.3.

19.5 DELETED

19.6 The Employer will evaluate and determine whether each tender (a) meets the eligibility criteria defined in ITT Clause 2 is accompanied by the required earnest money deposit as per stipulations in ITT Clause 13 and meets the minimum qualification criteria stipulated in ITT Clause 3. The Employer will draw out a list of qualified Tenderers.

20. OPENING OF SECOND COVER (DOCUMENT) OF QUALIFIED TENDERERS AND EVALUATION:

20.1 The Employer will inform all the Qualified Tenderers the time, date and venue fixed for the opening of the Second Cover (Document) containing the priced Tenders published in Karnataka Public Procurement Portal. The Employer will open the Second Covers (Document) of Qualified Tenderers at the appointed time and date in the presence of the Tenderers or their representatives who choose to attend. In the event of the specified date of financial Tender opening being declared a holiday for the Employer, the Second Covers (Document) will be opened at the appointed time and location on the next working day.

20.2 DELETED

20.3 The Tenderers' names, the Tender prices, the total amount of each Tender, any discounts, Tender modifications and withdrawals, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. No Tender shall be rejected at Tender opening.

20.4 The Employer shall prepare minutes of the Second Cover (Document) Tender opening, including the information disclosed to those present in accordance with Sub-Clause 20.3.

21. PROCESS TO BE CONFIDENTIAL

21.1 Information relating to the examination, clarification, evaluation, and comparison of Tenders and recommendations for the award of a contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced. Any effort by a Tenderer to influence the Employer's processing of Tenders or award decisions may result in the rejection of his Tender.

22. CLARIFICATION OF TENDERS

22.1 To assist in the examination, evaluation, and comparison of Tenders, the Employer may, at his discretion, ask any Tenderer for clarification of his Tender, including breakdowns of Lumpsum Price. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Tender shall be sought, offered, or permitted

except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Tenders in accordance with Clause 24.

- 22.2 No Tenderer shall contact the Employer on any matter relating to its Tender from the time of the Tender opening to the time the contract is awarded.

If they have any query/clarification related to e-Procurement on the Karnataka Public Procurement Portal, contact e-Procurement Help desk from 10:00 AM to 5:00 PM. Ph. No.: +91-8046010000/ 8068948777 or support@eprochelpdesk.com Karnataka Public Procurement Portal through query option on or before specified time.

- 22.3 Any effort by the Tenderer to influence the Employer in the Employer's Tender evaluation, Tender comparison or contract award decisions may result in the rejection of the Tenderers' Tender.

23. EXAMINATION OF TENDERS AND DETERMINATION OF RESPONSIVENESS

- 23.1 Prior to the detailed evaluation of Tenders, the Employer will determine whether each Tender; (a) has been properly signed; and; (b) is substantially responsive to the requirements of the Tender documents.
- 23.2 A Substantially responsive Tender is one which conforms to all the terms, conditions, and specifications of the Tender documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Tender documents, the Employer's rights or the Tenderer's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Tenderers presenting substantially responsive Tenders.
- 23.3 If a Tender is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

24. CORRECTION OF ERRORS

- 24.1 Tenders determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
- where there is a discrepancy between the amount in figures and in words, the lower of the two will govern and
 - Deleted.
- 24.2 The amount stated in the Tender will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Tenderer, shall be considered as binding upon the Tenderer. If the Tenderer does not accept the corrected amount the Tender will be rejected, and the earnest money deposit may be forfeited in accordance with Sub-Clause 13.6 (b).

25. EVALUATION AND COMPARISON OF TENDERS

- 25.1 The Employer will evaluate and compare only the Tenders determined to be substantially responsive in accordance with Clause 23.

- 25.2 In evaluating the Tenders, the Employer will determine for each Tender the evaluated Tender Price by adjusting the Tender Price as follows:
- (a) Making any correction for errors pursuant to Clause 24; and
 - (b) Making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub Clause 18.5.
- 25.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the Tender documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Tender evaluation.
- 25.4 The estimated effect of the price adjustment conditions under Clause 40 of the Conditions of Contract, during the implementation of the Contract, will not be taken into account in tender Evaluation
- 25.5 If the tender of the successful tenderer is seriously unbalanced in relation to the Employer's estimate of the cost of the work to be performed under the contract, the Employer may require the Tenderer to produce detailed price analyses for any or all items of Priced Schedule, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the performance security set forth in Clause 29 be increased at the expense of the successful Tenderer to a level sufficient to protect the Employer against financial loss in the event of default of the successful Tenderer under the contract.

F. AWARD OF CONTRACT

26. AWARD CRITERIA

- 26.1 Subject to Clause 27, the Employer will award the Contract to the Tenderer whose Tender has been determined to be substantially responsive to the Tender documents and who has offered the lowest evaluated Tender Price, provided that such Tenderer has been determined to be (a) eligible in accordance with the provisions of Clause 2, and qualified in accordance with the provisions of Clause 3.

27. EMPLOYER'S RIGHT TO ACCEPT ANY TENDER AND TO REJECT ANY OR ALL TENDERS

- 27.1 Notwithstanding Clause 26, the Employer reserves the right to accept or reject any Tender, and to cancel the Tender process and reject all Tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected Tenderer or Tenderers or any obligation to inform the affected Tenderer or Tenderers of the grounds for the Employer's action.

28. NOTIFICATION OF AWARD AND SIGNING OF AGREEMENT

- 28.1 The Tenderer whose Tender has been accepted will be notified of the award by the Employer prior to expiration of the Tender validity period by cable, telex, e-mail or facsimile confirmed by registered letter. This letter (hereinafter and in the *Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

- 28.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of Performance Security in accordance with the provisions of Clause 29. Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.
- 28.3 The Agreement will incorporate all agreements between the Employer and the successful Tenderer. It will be kept ready for signature of the successful Tenderer in the office of Employer within 30 days following the notification of award along with the Letter of Acceptance. Within 20 days of receipt, the successful Tenderer will sign the Agreement and deliver it to the Employer.
- 28.4 Upon the furnishing by the successful Tenderer of the Performance Security, the Employer will promptly notify the other Tenderers that their Tenders have been unsuccessful.

29. PERFORMANCE SECURITY

- 29.1 Within 20 days of receipt of the Letter of Acceptance, the successful Tenderer shall deliver to the Employer a Performance Security in any of the forms given below for an amount equivalent to **3% of the Contract price plus additional security for unbalanced tenders (additional security at 50% of the estimated cost of the unbalanced component)** in accordance with Clause 25.5 of ITT and Clause 43 of the Conditions of Contract.
- Banker's cheque/Demand draft, /Pay Order/ BG in favour of K-RIDE, Bangalore or
 - A bank guarantee in the form given in Section 10; or
 - Specified Small Savings Instruments pledged to K-RIDE, Bangalore.
- 29.2 If the Performance Security deposit is provided by the successful tenderer in the form of Bank Guarantee, it shall be issued either by a Nationalized / Scheduled bank.
- 29.3 The Performance Security deposit if furnished in cash or demand draft can, if requested, be converted to interest bearing securities at the cost of the contractor.
- 29.4 Failure of the successful tenderer to comply with the requirements of sub-clause 29.1 and clause 29 of additional ITT, shall constitute sufficient grounds for cancellation of the Tender award and forfeiture of the Earnest money deposit.

30. ADVANCE PAYMENT AND SECURITY:

- 30.1 The Employer will provide an advance payment on the contract price as stipulated In the condition of contract subject to the maximum as stated In the contract data.

31. CORRUPT OR FRAUDULENT PRACTICES

- 31.1 "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of the public official in the procurement process or in contract execution;

“fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Procurement Entity, and includes collusive practice among the tenderers either prior to or after tender submission, designed to establish tender prices at artificial non-competitive levels and to deprive the Procurement Entity of the benefits of free and open competition;”. The debarment action shall be taken as per KTPP Act.

31.2 The K-RIDE requires that the Tenderers/Suppliers/Contractors, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, K-RIDE:

- a) will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- b) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a K-RIDE contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a K-RIDE contract.

31.3 Furthermore, Tenderers shall be aware of the provision stated in sub-clause 50.2 of the Conditions of Contract.

32. PURCHASE PREFERENCE TO MAKE IN INDIA:

The provisions of revised 'Public Procurement (Preference to Make in India) Order 2017' issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry vide letter no. P-45021/2/2017-PP (BE-II) dated 28.05.2018 shall be applicable to the tendering process and award of the contract shall be done accordingly. In this connection, the minimum local content shall be 50% and the margin of purchase preference shall be 20%. For award of contract, para 3.c. of the revised 'Public Procurement (Preference to Make in India) Order 2017' shall be applicable in addition to the other provisions in the tendering documents in this regard.

33. APPEAL:

The Tenderer shall submit online appeal within 30 days period from the date of receipt of order to the Employer through the Karnataka Public Procurement Portal. The Employer may after giving opportunity to the parties pass such order as it deems fit and such order shall be final.

ADDITIONAL INSTRUCTIONS TO TENDERERS
(THIS SHOULD BE READ IN CONTINUATION OF ITT)

ITT Clause Ref.	Description
2.3	<p>The following paras are added:</p> <p>Wherever the word JV is mentioned, it should be read as JV/Consortium.</p> <p>For any purpose herein, 'Joint Venture' means an ad hoc association of firms that pool their resources and skills to undertake a large or complex contract in the role of "Contractor," with all firms (partners in the JV) being legally liable, jointly and severally, for the execution of the Contract in the event of a partner's withdrawal.</p> <p>A Tenderer may be a natural person, private entity, government-owned entity, or any combination of them with a format intent to enter into an agreement or under an existing agreement in the form of a Joint venture or consortium. The Tenderer must ensure the following</p> <p>(a) In case of Single Entity:</p> <p style="padding-left: 40px;">(i) Submit Power of Attorney authorizing the signatory of the Tender to commit the Tenderer.</p> <p>(b) In case of Joint Venture/ Consortium:</p> <p style="padding-left: 40px;">(i) The number of partners in the JV/ Consortium shall not be more than three.</p> <p style="padding-left: 40px;">(ii) At the time of bidding, the tenderer (JV) to submit the JV Agreement, as per the form given in Section 3: Qualification and Information/Bidding Forms. On issue of LOA, the JV/Consortium Agreement should be registered and shall be submitted along with the performance security.</p> <p style="padding-left: 40px;">(iii) The JV/ Consortium shall nominate a Representative through Power of Attorney (Form given in Section 3) who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV/ Consortium during the Tendering process and, in the event the JV/ Consortium is awarded the Contract, during contract execution.</p> <p style="padding-left: 40px;">(iv) Submit Power of Attorney by individual partners to lead partners as per the form given in Section 3.</p> <p style="padding-left: 40px;">(v) In case a Joint Venture/ Consortium is the successful Tenderer, the appropriate Joint Venture/ Consortium Agreement for execution of work should be entered by the Joint Venture/ Consortium partners. The duly signed Joint Venture/ Consortium Agreement should be submitted along with the tender submission.</p> <p style="padding-left: 40px;">(vi) The lead member as aforesaid shall be authorized to incur liabilities and receive instructions for and on behalf of any and all the partners of the Joint venture/Consortium and the entire execution of the contract.</p> <p style="padding-left: 40px;">(vii) All members of the Joint venture/Consortium shall be Jointly and severally responsible for the execution of the Contract.</p> <p style="padding-left: 40px;">(viii) Change in constitution or percentage participation of JV/Consortium shall not be permitted at any stage after submission of Tenders</p> <p>(c) Only firms that are registered or incorporated in India are eligible to compete. Any Tenderer from a country which shares a land with India will be eligible to Tender in this tender only if the Tenderer is registered with the Competent Authority.</p> <p>(d) "Tenderer from a country which share a land border with India" for the purpose of</p>

this Order means: -

1. An entity incorporated, established or registered in such a country; or
2. A subsidiary of an entity incorporated, established or registered in such a country; or
3. An entity substantially controlled through entities incorporated, established or registered in such a country; or
4. An entity whose beneficial owner is situated in such a country; or
5. An Indian (or other) agent of such an entity; or
6. A natural person who is a citizen of such a country; or,
7. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

(e) The beneficial owner for the purpose of above clause will be as under:

- (i) In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person(s), has a controlling ownership interest or who exercises control through other means.

Explanation-

- a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five percent of share or capital or profits of the company;
- b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue their shareholding or management rights or shareholders agreements or voting agreements;
- (ii) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
- (iii) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profit of such association or body of individuals;
- (iv) Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
- (v) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

2.4

The Tenderer shall submit a Certificate stating that they have read the above clause using the appropriate Performa given in Section 3 - Form 3C1 & 3C2.

Tenderer having a conflict of interest shall be disqualified. The conflict of interest is detailed below.

A Tenderer or any of its constituents shall not have conflict of interest. All Tenderers found to have a conflict of interest shall be disqualified. A Tenderer may be considered to be in a conflict of interest with one or more parties in this Tendering process, if, including but not limited to::

- (a) they have controlling shareholders in common; or
- (b) they receive or have received any direct or indirect subsidy from any of them; or
- (c) they have the same legal representative for purposes of this Tender; or
- (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Tender of another Tenderer, or
- (e) any firm, either individually or in Joint Venture (JV)/ Consortium, submits more than one offer irrespective of whether the firm is quoting against this Tender. The Tenders submitted by two different Tenderers, having any common participant in JV/ Consortium formation or any common partner in partnership firms, or an individual will be treated as having conflict of interest or
- (f) a Tenderer who is Sub-contractor to another Tenderer will be treated as having conflict of interest. However, this does not limit the inclusion of the same sub-contractor in more than one Tender.
- (g) a Tenderer participated as a consultant in the preparation of the design or specifications of the contract that is the subject of the Tender; or
- (h) A Tenderer was affiliated for any period(s) during last two years before the date of issue of Invitation for Tenders with a firm or entity that has been hired (or is proposed to be hired) by the Employer as Engineer for the contract.

2.5

The Tenderer shall be disqualified if:

- (a) The Tenderer or any of its constituents has been blacklisted/ banned from business dealings with all Government Departments by the Government of Karnataka or by Ministry of Railways or by K-RIDE at any time till finalization of Tenders, except in cases where such blacklisting/ banning has been withdrawn by Competent Authority or has ceased or expired on the deadline for submission of the Tenders, for which satisfactory evidence is to be produced.
- (b) Any previous contract of the Tenderer or any of its constituents had been fully terminated or part terminated for its failure as a JV/ Consortium partner with forfeiture of its full Performance Security, by Rail Infrastructure Development Company (Karnataka) Ltd.(K-RIDE) at any time starting from 3 years before the deadline for submission of Tenders and up to one day before the date of opening of price Tenders;

Provided, however, there is no stay order or declaration by any Court against such termination of the contract by Rail Infrastructure Development Company (Karnataka) Ltd. or such termination of the contract has not been revoked by Rail Infrastructure Development Company (Karnataka) Ltd or competent authority of K-RIDE has not passed an order of non-applicability of disqualification of the Tenderer or any of its constituents despite such termination.

- (c) The Tenderer or any of its constituents has been imposed delay damages of 5% or more of contract value by K-RIDE due to delay in the implementation of any previous contract within the period of last 2 years before the deadline for submission of Tenders (Period of 2 years shall be reckoned from the date on which the total accrued amount of Delay Damages has reached 5% or more of the contract price) or such accrued delay damages has not been fully recovered before the deadline for submission of Tenders on account of contractor's request for deferring recovery to maintain cash flow and K-RIDE has acceded to the same in the interest of the project or the work

	<p>under the previous contract in question has not been completed before the deadline for submission of Tenders, unless imposition of such delay damages has been set aside by the Competent Authority.</p> <p>(d) The Tenderer or any of its constituents:</p> <p>(i) has suffered bankruptcy/insolvency or</p> <p>(ii) has any on going case of insolvency before the NCLT/ any applicable Court where Interim Resolution Professional (IRP) has been appointed or is at any later stage of the insolvency process, as on the deadline of submission of Tenders or thereafter till finalization of Tenders.</p> <p>(e) The Tenderer is found ineligible by the Employer, in accordance with ITB-3.</p> <p>(f) The Tenderer or its constituent(s) has been declared by K-RIDE to be a poor performer and the period of poor performance is still in force on the deadline for submission of Tenders.</p> <p style="text-align: center;">OR</p> <p>The Tenderer or its constituent(s) has been declared by K-RIDE to be a poor performer at any time after the deadline for submission of Tenders and upto one day before the date of opening of price Tenders.</p> <p>(g) The Tenderer or any of its constituents has changed its name or created a new business entity as covered by the definition of "Allied Firm" under para 1102 (iii) of Chapter XI of Vigilance Manual of Indian Railways (available on website of Indian Railways), consequent to having been banned from business dealings or suspended from business dealings or having been declared poor performer.</p> <p>The Tenderer shall submit an affidavit stating that they are not liable to be disqualified as per this sub clause using the Form PS3 given in Section-3: Qualification and Information/Bidding Forms. Non-submission of an affidavit by the Tenderer shall result in summary rejection of his Tender.</p> <p>Tenderers shall immediately inform the Employer in case they cease to fulfil eligibility in terms of ITT clause 2 above. In case the Tenderer fails to inform the Employer or submits a false affidavit, his Tender shall be summarily rejected and Tender security shall be forfeited. The Tenderer shall also be liable for Banning of Business dealings for a period up to five years</p>
2.6	<p>PARTNERS IN CASE OF JV/CONSORTIUM</p> <p>(i) Lead partner must have a minimum of 50% participation in the JV/Consortium.</p> <p>(ii) Partners having 25% or more percentage participation shall be termed as substantial partner/other Partners.</p> <p>(iii) In case of JV/Consortium, change in constitution or percentage participation shall not be permitted at any stage after the bid submission.</p> <p>The bidder, in case of JV/Consortium, shall clearly and unambiguously define the role and responsibilities for each partner in the JV agreement submitted as per Form JV/4 of Section-3, providing clearly that any abrogation/subsequent re-assignment of any responsibility by any partner of JV/Consortium in favor of other JV/Consortium partner or any change in constitution of partners of JV/Consortium (without written approval of Client) from the one given in JV agreement at tender stage, will be treated, as 'breach of contract condition' and/or 'concealment of facts' as the case may be and acted accordingly. All Members of the JV/ Consortium must have experience in execution of similar work.</p>

3.3(a)	<p>The following para is added:</p> <p>Materials, Equipment and Services</p> <p>The materials, equipment and services to be supplied under the Contract shall be from the approved sources as specified in Section 8A: Works Requirements and Price Schedule Section-9.</p>
7.3	<p>The following para is added:</p> <p>The Employer is not responsible for the completeness of the Bidding Document and their Addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids.</p> <p>The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.</p>
8.3	<p>The following para is added:</p> <p>The Pre-Tender meeting may also be attended through video conferencing (VC). Those Tenderers who wish to join the Video Conferencing shall send a request email on the email id (i.e. praveen.kumar.kride@ka.gov.in) by 16.05.2022 up to 16:30 hours IST, so that a link for Video Conferencing can be sent by K-RIDE.</p> <p>Please note that the request received from the Tenderers (With details of the Company, its address, and the name and designation of the person attending the VC) will only be entertained. They should also mention the email id through which VC is desired to be joined.</p> <p>K-RIDE may allow maximum of two email ids for one company to participate in the VC. Any request for VC received after the given date and time for sending the link for VC will not be entertained.</p> <p>Prospective Tenderers will be able to join the VC through the link provided to them on Email ID. During this pre- Proposal meeting, prospective Tenderers may request for clarifications.</p>
10.3	<p>The following para is added:</p> <p>Documents Comprising the Tender</p> <ul style="list-style-type: none"> • The Tender shall comprise of Tender Security/Tender Security Declaration, Technical Tender and Price Tender. The Tenderer shall submit the Tender through Karnataka Public Procurement Portal. • On the stipulated date of opening of Tenders, initially, only the Technical Tenders are opened through Karnataka Public Procurement Portal. The Technical Tenders shall be evaluated by the Employer in accordance with the stipulated Qualification and Evaluation criteria. No amendments or changes to the Technical Tenders would be permitted after the opening of technical Tenders. • Tenderers who are qualified in the technical evaluation their price Tender shall be opened at a date and time advised by the Employer(K-RIDE) through e-tendering portal. The Price Tenders are evaluated and the Contract is awarded to the Tenderer whose Tender has been determined to be the lowest evaluated substantially responsive Tender. <p>The Technical Tender shall contain the following:</p> <ul style="list-style-type: none"> • All the Forms of Section-3: Qualification Information/Bidding Forms including letter of technical Bid (LTB) shall be scanned and uploaded. • The Tenderer shall furnish a commitment in Letter of Technical Bid (LTB) for deployment of

equipment and personnel as stipulated in Section 8: Employers Work's Requirement.

- The Tenderer shall furnish commitment in LTB for submitting construction method statement for all major activities of work and get this approved from the engineer prior to the commencement of work on that activity in case of award of contract.
- The Tenderer shall furnish a commitment in Letter of Technical Bid (LTB) for adhering to mobilisation and construction schedule as stipulated in Section 8A: Employers Work's Requirement.
- **Tenderer should note that non-submission of the Letter of Technical Bid (LTB) by the Tenderer shall result in summary rejection of his Tender.**
- Tenderer shall submit the Approach and Methodology for performing the assignment by using appropriate Performa given in Section 3: Qualification Information/Bidding Forms.
- Scanned copy of Tender Security/Tender Security Declaration form (Section 3), in accordance with ITT Clause 13;
- Scanned copy of written confirmation authorizing the signatory of the Tender to commit the Tenderer, any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the Tender.
- Scanned copy of documentary evidence with establishing the Tenderer's qualifications to perform the contract; To establish its qualifications to perform the Contract in accordance with Section 2: ITT the Tenderer shall submit as part of its technical Tender the information requested in the corresponding information sheets included in Section 3: Qualification Information/Bidding Forms.

Domestic Tenderers, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility

- Scanned copy of Approach and Methodology - Performa given in Section-3: Qualification Information/Bidding Forms
- Scanned copy of Joint Venture Agreement entered into by all partners

The Price Tender shall contain the following:

- All Section-3 Documents shall be scanned and submitted.
- Filled/completed schedules as required including Price Schedule in accordance with ITT Clauses should be submitted through Karnataka Public Procurement Portal only;
- The Tenderer shall submit through Karnataka Public Procurement Portal, separate Technical Proposal and Price Proposal for each individual contract package, using the appropriate Submission Sheets furnished in Section-3: Qualification Information/Bidding Forms. These Forms must be completed without any alterations to their format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
- The Tenderer shall submit, as part of the Price Tender, the Schedules, including the Price Schedule through Karnataka Public Procurement Portal only.

11.5

The following para is added:**Tender Prices and Discounts**

- The prices and discounts quoted by the Tenderer in the Letter of Price Tender (LPB) and in the Price Schedule shall conform to the requirements specified below.
- In the Price Schedule, the amount against each schedule are to be quoted. From this, price of such schedules has been worked out and indicated in the summary sheet in the Price Schedule. The Tenderer shall quote lumpsum amount in figures and words as per format for such schedule in the summary sheet. **If any Tenderer quotes more than one Amount for such schedules, its Tender shall be summarily rejected.**
- The Tenderer shall fill in the amount against each schedule of the price schedule.. **Items against which no amount or price is entered by the Tenderer will not be paid for by the Employer when executed and shall be deemed to be covered by the lumpsum amount quoted in the Price Schedule.**
- The price to be quoted in the Letter of Price Tender, in accordance with ITT, shall be the total price of the Tender, excluding any discounts offered.
- The Tenderer shall quote any unconditional discounts and the methodology for their application (the discounts, and the methodology of their application, should be quoted on prices quoted in the Tender so that the discounts can be evaluated by simple arithmetic calculation during financial evaluation of the Tenders, to arrive at the net total price of the Tender. If the net total price cannot be calculated after application of the methodology of the discount(s) quoted, the Tender shall be considered as incomplete and will be rejected) in the Letter of Price Tender, in accordance with ITT. However, any conditional discount if any offered for award of contract package has to be quoted separately as applicable in Letter of Price Tenders. If Tenderer is not offering any discount for award of combination of contract package, then Tenderer has to quote NIL (zero) discount offered.
- The Tenderer can modify his/her Tender and resubmit it any number of times through Karnataka Public Procurement Portal before the deadline for submission of Tenders. Any other correspondence in connection with the Tender is not permissible and shall not be considered in Tender evaluation.
- Unless otherwise provided in the ITT and the Contract, the lumpsum amount quoted by the Tenderer are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract. In such a case, the indices and weightages for the price adjustment formulae shall be as specified in the Tables of Adjustment Data included in Contract Data.
- If so, indicated in ITT 1, Tenders are being invited for individual contracts or for any combination of contracts (packages). Tenderers wishing to offer any price reduction for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITT, provided the Tenders for all contracts are submitted and opened at the same time.

	<ul style="list-style-type: none"> • All duties, taxes including GST, royalties, cess and other levies payable by the Contractor under the Contract, or for any other cause (including standard specifications), as of the date 28 days prior to the deadline for submission of Tenders, shall be included in the lumpsum amount of Price Schedule and the total Tender Price submitted by the Tenderer. GST shall be paid by the Tenderer as applicable in accordance with the prevailing rules of Government of India. • Tenderers should note that during the progress of the works, the foreign currency requirements of the outstanding balance of the Contract Price may be adjusted by agreement between the Employer and the Contractor in order to reflect any changes in foreign currency requirements for the Contract, in accordance with Sub-Clause 14/ITT (Currencies of Bid and Payment) of the Conditions of Contract. Any such adjustment shall be affected by comparing the percentages quoted in the Tender with the amounts already used in the Works and the Contractor's future needs for imported items. • Tenderer should note that non-submission of the Letter of Price Tender (LPB) and/or Summary sheet of Price Schedule by the Tenderer shall result in summary rejection of his Tender. • Online alternative Price Tender corresponding to the alternative Technical Tender, if permissible, in accordance with ITT Clause 14;
13.7	<p>The following para is added:</p> <p>In this tender, the tender security/ EMD needs to be paid.</p> <p>Earnest Money Deposit/ Tender security (as per Karnataka Public Procurement Portal): The Tenderer shall furnish, as part of his tender, Earnest Money Deposit (EMD) in the amount as shown in column 4 of the Table of IFT for this particular work. This Earnest Money Deposit shall be paid by e-payment through Credit card/ Debit Card/Net Banking/ Remittance at the Bank counter/ NEFT/RTGS only as specified in the e-procurement portal (e-proc help line desk no. 8046010000, 8068948777 to be contacted for any query.</p>
14	<p>The following para is added:</p> <p>The Tender, as well as all correspondence and documents relating to the Tender exchanged by the Tenderer and the Employer, shall be written in English. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate translation of the relevant passages in English in which case, for purposes of interpretation of the Tender, such translation shall govern</p>
15	<p>The following para is added:</p> <p>Sealing and Marking of Tenders</p> <p>The Tenderer shall submit the technical Tender, Price Tender and the Tender Security/Tender Security Declaration through Karnataka Public Procurement Portal i.e., https://eproc.karnataka.gov.in. The original of the Technical Proposal, which will contain all Forms of Section 3 except Forms PS 2 and Price Schedule Section 9 and all other relevant data specified in the Tender document.</p> <p>The Price Bid, shall be submitted through Karnataka Public Procurement Portal only. This "PRICE BID" will contain only Forms PS 2 of Section 3 & Price Schedule and all other relevant data specified in this Tender document. All forms should be typed on the Tenderer's' letter head as per the exact format of the Forms.</p> <p>The above forms should be scanned and submitted through Karnataka Public Procurement Portal.</p>

	No details about price proposal shall be disclosed directly or indirectly in the technical proposal failing which the Tender shall be rejected. Only Electronic Tender submission and opening procedure permitted.
19.7	<p>The following para is added:</p> <p>Tender Opening</p> <ul style="list-style-type: none"> • The Employer shall conduct the opening of Technical Tenders through Karnataka Public Procurement Portal i.e., https://eproc.karnataka.gov.in on the date and at the time mentioned. • The date and time of the opening of Price Tenders will be announced through Karnataka Public Procurement Portal • At the end of the evaluation of the Technical Tenders, the Employer will intimate Tenderers who have submitted substantially responsive technical proposals and who have been determined as being qualified for award to attend the opening of the price Proposals. The date and time, of the opening of Price Tenders will be advised through email/e-procurement. Tenderers shall be given reasonable notice for the opening of Price Tenders. • The Employer will notify Tenderers in writing who have been rejected on the grounds of being substantially non-responsive to the requirements of the Tendering Document and who have been determined as being not qualified as a result of evaluation of technical proposal and their Price Tender shall not be opened. The Tender security of the Tenderers shall be returned as per due process. • The Employer shall conduct the opening of Price Tenders through Karnataka Public Procurement Portal i.e., https://eproc.karnataka.gov.in of all Tenderers who have submitted substantially responsive Technical Tenders and who have been determined qualified as a result of technical evaluation.
23.4	<p>The following para is added:</p> <p>Deviations, Reservations, and Omissions</p> <p>During the evaluation of Tenders, the following definitions apply:</p> <ol style="list-style-type: none"> “Deviation” is a departure from the requirements specified in the Tendering Document; “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Tendering Document; and “Omission” is the failure to submit part or all of the information or documentation required in the Tendering Document.
24.3	<p>The following para is added:</p> <p>Nonconformities, Errors, and Omissions</p> <ul style="list-style-type: none"> • Provided that a Tender is substantially responsive, the Employer may waive any nonconformities in the Tender that do not constitute a material deviation, reservation or omission. • Provided that a Tender is substantially responsive, the Employer may request the Tenderer to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Tender related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Tender. Failure of the Tenderer to comply with the request may result in the rejection

	of its Tender.
24.4	<p>The following para is added:</p> <p>Correction of Arithmetical Errors and Omissions in Tender and Evaluation of Tender Price</p> <ol style="list-style-type: none"> 1. Provided that the Tender is substantially responsive, the Employer shall correct arithmetical errors and omissions in the Tender and then arrive at the Evaluated Tender Price on the following basis: <ol style="list-style-type: none"> (a) If there is a discrepancy between the price mentioned in the summary sheet of the Price Schedule and the price that is obtained by calculation i.e. addition of each schedule in the summary sheet of Price Schedule, then the quoted amount of each schedule shall prevail and the price shall be corrected accordingly. (b) if the amount has been quoted both in words and in figures and there is a discrepancy in such amount, then the lower of the two shall prevail and shall be considered for evaluation of the price of the schedule. (c) If the amount has been quoted either in words or in figures only, then the same shall be considered for evaluation of the price of the schedule. (d) If no amount has been indicated for any particular schedule in words, as well as in figures, irrespective of the fact whether the Tenderer has written or not written, in such cases, the lumpsum amount of the schedule shall be considered as zero and shall be calculated accordingly; (e) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected. (f) The amount for each schedule shall first be calculated after applying discount(s) to the Schedule and the net amount shall be rounded off to a Rupee. Thereafter, evaluated price of the schedules shall be added as the sum of amounts in grand summary sheet and sum of evaluated prices of all schedules shall be the overall Evaluated Tender Price. 2. If the Tenderer has submitted the lowest evaluated Tender does not accept the correction of errors and omissions as per above provisions, its Tender shall be disqualified and its Tender security shall be forfeited or its Tender-Securing Declaration executed.
25.6	<p>The following para is added:</p> <p>Conversion to Single Currency</p> <p>For evaluation and comparison purposes the currencies of the Tender shall be converted into Indian Rupees as stated in BDS.</p> <p>An Abnormally Low Tender is one in which the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer to perform the contract at the offered price. The Employer may in such cases seek written clarifications from the Tenderer, including detailed price analysis of its Tender price in relation to scope, schedule, allocation of risks and responsibilities, and any other requirements of the Tender document. If, after evaluating the price analyses, the Employer determines that the Tenderer has substantially failed to demonstrate its capability to deliver the contract at the offered price, the Employer may reject the Tender/ proposal.</p> <p>Additional Performance Security in case of abnormally low Tenders will have to be submitted.</p> <p>The calculation sheet is as below:</p> <p>If the bid, which results in the lowest Evaluated Bid Price is substantially on lower side and/or seriously unbalanced in the opinion of the Employer as per criteria defined below, the Employer may require the bidder to submit additional performance security as under:-</p>

	<p>a) If overall price quoted by the L1 bidder is below the engineer's estimated price by more than 10% and the difference between overall price quoted by the L1 and L2 is more than 5% of the estimated price, then the bid price of L1 bidder shall be treated as substantially on lower side and such bidder shall be bound to furnish additional performance security equal to the $(0.9 \times \text{engineer's estimated price} - \text{L1 price})$ or $(0.95 \times \text{L2 price} - \text{L1 price})$ whichever is lower, on this account. Example below demonstrates the method of calculation to arrive at additional performance security:</p> <p>Suppose overall price quoted by the L1 bidder is 17% below the estimated price and the overall price quoted by L2 bidder is 8% below the estimated price. In this case the overall price quoted by the L1 bidder is lower by more than 10% of the estimated price and also the difference between overall price quoted by the L2 and L1 bidder is more than 5% of the estimated price, hence the L1 bidder shall be required to furnish additional performance security for an amount equal to $\{0.9 \times \text{engineer's estimated price} - (1-17/100) \times \text{engineer's estimated price}\} = \{0.07 \times \text{engineer's estimated price}\} = 7\%$ of engineer's estimated price or $\{0.95 \times (1-8/100) \times \text{engineer's estimated price} - (1-17/100) \times \text{engineer's estimated price}\} = \{0.044 \times \text{engineer's estimated price}\} = 4.4\%$ of engineer's estimated price; whichever is lower.</p> <p>As per the above L1 bidder shall be required to submit additional performance security of 4.4% of engineer's estimated price.</p> <p>b) If for any bill/ schedule of quantities % age above or below quoted by the bidder on the estimated price is beyond 15% below the overall % age difference between the quoted contract price and the engineers estimated price, then the price for that particular schedule shall be treated as seriously unbalanced and bidder shall be bound to furnish additional performance security for such unbalanced price. Example below demonstrates the method of calculation to arrive at unbalanced price and additional performance security:</p> <p>Suppose for the L1 bidder overall % age difference between quoted contract price and the engineers estimated price;</p> $(\text{Overall contract price} - \text{Overall estimated price}) \times 100 \div \text{overall estimated price} = + 4 \%$ <p>Maximum % age below permitted over estimated price of any bill / schedule in this case = $+4 - 15 = -11\%$</p> <p>Suppose for the L1 bidder has quoted 20% below estimated price then the pricing shall be treated as unbalanced and the bidder shall be required to furnish additional performance security for an amount equal to $(20 - 11) \%$ of the estimated price..</p>
26.2	<p>The following para is added:</p> <p>Award Criteria</p> <ul style="list-style-type: none"> • The Employer shall award the Contract to the Tenderer whose Tender is substantially responsive to the Tendering Document, provided further that the Tenderer is determined to be qualified to perform the Contract satisfactorily and whose offer has been determined to be the lowest evaluated subject to ITT below. In case of more than one Tenders are evaluated to be lowest, Contract shall be awarded to the Tenderer having higher average annual construction turnover (calculated as total certified payments received for contracts in progress or completed) in equivalent INR within the last Two financial years. • The Employer has the right to review at any time prior to award of contract that the qualification criteria as specified in Section-3: Qualification Information and Bidding Forms are still being met by the Tenderer whose offer has been determined to be the lowest evaluated Tender. A Tender shall

SECTION:2: - INSTRUCTIONS TO TENDERERS (ITT)

	<p>be rejected if the qualification criteria as specified in Section-3: Qualification Information and Bidding Forms are no longer met by the Tenderer whose offer has been determined to be the lowest evaluated Tender. In this event the Employer shall proceed to the next lowest evaluated Tender to make a similar reassessment of that Tenderer's capabilities to perform satisfactorily.</p>
29.5	<p>The following para is added:</p> <p>Performance Security</p> <p>The successful Tenderers shall have to submit a Performance Guarantee (PG) Within twenty (20) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 20 days up to 60 days from the date of issue of LOA may be given by the authority who is competent to sign the contract agreement. However, a penal interest of 12% of per annum shall be charged for the delay beyond 20 days, i.e. From 21nd day after the date of issue of LOA. Further if the 60th day happens to be declared holiday in the office of K-RIDE, submission of PG can be accepted on the next working day.</p> <p>In all other cases if the contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminate. In case contract is terminated K-RIDE shall be entitled to forfeit the Tender security and other dues payable against to the contract. In case the tenderer has not submitted by security on the strength of their registration as a start-up recognized by the Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect. The failed contractor shall be debarred from participating in re-tender for that work.</p> <p>Failure of the successful Tenderer to submit the above-mentioned Performance Security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender security or execution of the Tender-Securing Declaration.</p> <p>The above provision shall also not apply to the furnishing of a Domestic Preference Security, if so required.</p>
New Clause-1	<p>LITIGATION HISTORY: (Please see Annexure Tendering Forms).</p> <p>The Tenderer/Tenderers should provide accurate information on any litigation or arbitration resulting from contracts completed or under its execution over the last five years as on date of submission of this tender.</p> <p>If the litigation started by the Tenderer without recourse to measures of Dispute Resolution and Arbitration as provided in the Contract or the litigation in respect of challenge of award of Arbitration by the Tenderer, will be treated as Litigation case indulged by the Tenderer for this Para of Litigation History. A consistent history of awards against the Applicant or any partner of a joint venture may result in failure of the application.</p> <p>Note: Tenderers including each of the partners of a Joint Venture, should provide information on any history of litigation or Arbitration resulting from contracts executed in the last 5 years as on date of submission of this tender. A separate sheet should be used for each partner of a Joint Venture</p>
New Clause-2	<p>Jurisdiction of Courts</p> <p>The Tendering process shall be governed by and construed in accordance with the laws of India and the Courts as indicated in Tender Data Sheet shall have exclusive jurisdiction over all the disputes/issues arising under, pursuant to and/ or in connection with the Tendering process. The Jurisdiction of Courts is Bengaluru, Karnataka</p>

SECTION-3

QUALIFICATION INFORMATION/BIDDING FORMS

INDEX**SECTION-3: QUALIFICATION INFORMATION/BIDDING FORMS**

This Section contains the forms which are to be completed by the Bidder and to be submitted as part of this Bid.

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	A) Qualification Information/Bidding Forms		44- 50
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2.	Executed and Payment Received statement for 5 Years	Para No. 1.2	
3.	Similar Work Experience	Para No. 1.3	
4.	Quantities of Work executed in Last 5 years	Para No. 1.4	
5.	Information on Works (Existing, Ongoing and Works for which Tenders already submitted)	Para No. 1.5	
6.	Availability of Plant and Equipment Details	Para No. 1.6	
7.	Reports of Financial Standing (Profit and Loss Statements)	Para No. 1.7	
8.	Qualification and Experience of Key Personnel	Para No. 1.8	
9.	Tenderers bankers Details	Para No. 1.9	
10.	Evidence of access to Financial Resources	Para No. 1.10	
11.	Proposed Subcontracting components	Para No. 1.11	
12.	Information on Litigation History	Para No. 1.12	
13.	Proposed Methodology and Program of construction	Para No. 1.13	
	B) Additional Qualification Information/Bidding Forms		51-67
14.	Letter of Technical Bid	Form PS 1	
15.	Letter of Price Bid	Form PS 2	
16.	Format for Affidavit (along with Bid)	Form PS 3	
17.	Bid Security Declaration Form	Form BDF/1	NA
18.	Letter of participation from Each partner of Joint Venture (JV)/ Consortium	Form JV/Consortium/1	
19.	Power of attorney for authorized signatory of Joint Venture (JV)/ Consortium partners	Form JV/Consortium/2	
20.	Power of attorney to Lead partner of joint venture (JV)/ Consortium	Form JV/Consortium/3	
21.	Draft Joint Venture Agreement	Form JV/Consortium/4	
	Bidder Qualification		68-84
22.	Bidder's Information Sheet	Form ELI - 1	
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24.	Financial Situation	Form FIN - 1	
25.	Annual Construction Turnover	Form FIN - 2	
26.	Current Contract Commitment	Form FIN - 3	
27.	Deleted	Form No 1	
28.	Checklist for clauses pertaining to Summary Rejection of bid	Form No 2	
29.	Format for certificate to be submitted by bidder along with the bid	Form 3 C1	
30.	Format for certificate to be submitted by Bidder along with the bid for subcontracting	Form 3 C2	
31.	Deleted	Form 4	
32.	Key Personnel for the work	Form 5	
33.	Format of Curriculum Vitae (cv) for proposed key professional staff	Form 6	
34.	Undertaking from specialist sub-contractor	Form CL-2	
35.	Availability of Financial Resources	Form CL-3	
36.	Evidence of Availability of Credit Line Financial Resources	Form CL-4	
37.	Work Experience Certificate	Form EXP-1	

A) QUALIFICATION INFORMATION/BIDDING FORMS

1. QUALIFICATION INFORMATION

The information to be filled in by the Tenderer hereunder will be used for purposes of computing Tender capacity as provided for in Clause 2 of the Instructions to Tenderers. This information will not be incorporated in the Contract.

1.1. Constitution or legal status of Tenderer

Place of Registration: _____ [Attach copy]

Principal place of business: _____ [Attach Copy]

1.2. Total value of construction works executed and payments received in the preceding five Financial Years. (Rs. In Crores) (attach certificate from Statutory Auditors)

2017-2018: -----

2018-2019: -----

2019-2020: -----

2020-2021: -----

2021-2022: -----

K-RIDE

1.3. Work performed as Contractor (in the same name) on works of similar nature over during the five financial years specified in 1.2 above.

Project Name	Name of Employer	Description of Work	Contract Number	Value of contract Rs. Cr.	Date of Issue of work order	Specified period of completion	Actual date of completion	If partner in a JV/ Consortium, specify participation in total contract amount	Remarks explaining reasons for delay in completion of work
1	2	3	4	5	6	7	8	9	10

Note:

- (1) If the qualifying work of similar nature is done by a joint venture/consortium, then Value shall be considered as per percentage participation by the member(s) in that joint venture/consortium.
- (2) Value of *similar nature of work completed shall be updated up to date of submission as per table given below:

Financial year	2017-18	2018-19	2019-20	2020-21	2021-22
Indian Currency	1.22	1.16	1.10	1.05	1.00
Foreign Currency					

- (3) Updated value of completed work in foreign currency shall be converted to Equivalent INR, calculated using the selling exchange rate of Reserve Bank of India as on 28th day prior to the last date of submission of bids. In case publication is not available on 28th day, previous working day published exchange rate shall be considered for evaluation.

The bidder shall attach a copy of the Certificate(s) issued by the employer in support of the information being furnished in the above form, failing which the claim of the bidder shall be liable to be rejected (in case of experience as a sub-contractor, the employer shall be the owner of the Project who has engaged the main Contractor).

SEAL AND SIGNATURE

1.4. Quantities of work executed as contractor (in the same name) during the last five years.

Year	Name of Work	Name of Employer	Quantity of work performed (As mentioned in Qualification of the Tenderer Clause 3.2)				Remarks (Indicate contract reference Contract No., Award Date, Completion date, Role in contract, total contract amount, JV participation proportion)
			Cement concrete (including RCC and PSC)	Earthwork in excavation and embankment (combined quantities)	Structural Steel works	Pre-cast concrete works	
2017-18							
2018-19							
2019-20							
2020-21							
2021-22							

Note:

- Copy of Certificate(s) issued by the employer in support of the information being furnished above, shall be attached with each respective form, as per detailed requirements indicated in clause 3.2 (c) of Section 2 failing which the claim of the bidder shall be liable to be rejected (in case of experience as a sub-contractor, the employer shall be the owner of the Project who has engaged the main Contractor).

SEAL AND SIGNATURE

1.5. Information on works for which Tenders have been submitted and works which are yet to be completed as on the date of this Tender.

(A) Existing commitments and on-going works:

Description of Work	Place & State	Contract No. & Date	Name and Address of Employer	Value of Contract (Rs. In Crores)	Stipulated period of completion	Value of works remaining to be completed (Rs. In Crores) (Attach certificate from Engineer in charge)	Anticipated date of completion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

(B) Works for which Tenders already submitted:

Description of Work	Place & State	Name and Address of Employer	Estimated value of works (Rs. In Crores)	Stipulated period of completion	Date when decision is expected	Remarks if any
(1)	(2)	(3)	(4)	(5)	(6)	(7)

- 1.6. The following items of equipment are considered essential for successfully carrying out the works. The Tenderer should furnish all the information listed below. (The item of the equipment required nos and capacity should match with those specified in ITT clause 3.3(a))

Item of Equipment	Requirement		Owned and available nos/Age/Capacity/ Condition	Remarks (The details of hired/leased equipment details to be indicated)
	Nos	Owned		
JCB.	1 Nos			
Hydraulic excavator	1 Nos			
Hydra	2 Nos			
Tippers/trucks/Water tankers	4 Nos	2		
Concrete pump	1 no.			
Survey equipment: Total station	1 no.	1		
Survey equipment : Auto level	1	1		

- 1.7. Reports on the financial standing of the tenderer, such as profit and loss statements and auditor's reports for the last five years;
- 1.8. Qualification and experience of the key technical and management personnel in permanent employment with the tenderer and those that are proposed to be deployed on this contract, if awarded.
- 1.9. Name, address, and telephone, telex, and fax numbers of the Tenderers' bankers who may provide references if contacted by the Employer.
- 1.10. Evidence of access to financial resources to meet the qualification requirement specified in ITT Clause 3.3 (b): Cash in hand, Letter of Credit etc. List them and attach certificate from the Banker in the suggested format given in Section 3, Form No.CL3 & CL4.

1.11. Proposals for subcontracting components of works amounting to more than 20% of the contract price.

Item of Work	Value of Sub-Contract	Identified Sub-Contractor (Name and Address)	Experience of similar works (Attach Certificates from the respective Employers)	Remarks (Undertaking from Specialist subcontractors to be provided as per Form CL-2)

1.12. Information on litigations in which the Tenderer is involved:

Litigation History

(This has reference to Eligibility cum Qualification Criteria document.)

Name of Tenderer or member of Joint Venture: -

Sl. No.	Name of the Employer/ Client	Name of the work	No. of cases in the work	cause of Litigation/ arbitration/ details of disputes	Year	Litigation/ arbitration initiated by	Award in favor of Tenderer/ Client	Disputed Amount	Remarks showing present status

Note: Tenderers including each of the partners of a Joint Venture, should provide information on any history of litigation or Arbitration resulting from contracts executed in the last 10 years as on date of submission of this tender. A separate sheet should be used for each partner of a Joint Venture.

- 1.13. **The proposed methodology and program of construction, backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.**

APPROACH & METHODOLOGY PROPOSED FOR PERFORMING THE ASSIGNMENT

Name of Project: “

The approach and methodology will be detailed precisely under the following topics:

1. Understanding of the assignment
2. Work Breakdown structure/ Work plan.
3. Composition of the Team
4. Organizational set up/ Construction methodology for execution of the work as outline in Section 8A
5. Documentation and procedures to be prepared, adopted and furnished to K-RIDE (Rail Infrastructure Company (Karnataka) Limited).
6. Reporting Procedure
7. Sourcing of Material

Note:

- i. **The approach and methodology should be precise and relevant to the assignment. Include Bar charts.**

B) ADDITIONAL QUALIFICATION INFORMATION/BIDDING FORMS

Form: PS1

LETTER OF TECHNICAL BID

(Seperately for each Package)
Date.....

Invitation for Bid No.:.....

To,
.....

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Tenderer (ITT);
- (b) We offer to execute the Works in conformity with the Bidding Documents;
- (c) Our bid shall be valid for a period of 180 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) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;
- (e) If our bid is accepted, we commit to deploy key equipment and key personnel consistent with the requirements stipulated in Section 8A: Works Requirements.
- (f) If our bid is accepted, we commit to submit work method statements for all major activities and get these approved from the engineer prior to commencing work on such activities. We also understand that the work shall be executed as per the approved method statements and KEY DATES without any deviations and delay in completion.
- (g) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITT clause 2.4;
- (h) We declare that we are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITT clause 2.2, other than alternative offers submitted in accordance with ITT clause 14;
- (i) We declare that we are not liable to be disqualified in Accordance with ITT clause 2.5, and we are enclosing the affidavit for the same as per the Performa given in the bid document.

- (j) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (k) We have not made any deviations from the requirement of the bidding document and we have also not made any tampering or changes in the bidding documents on which the bid is being submitted and if any tampering or changes are detected at any stage, we understand the bid will invite summary rejection and invocation of bid security declaration, the contract will be liable to be terminated along with forfeiture of performance security, even if LOA has been issued.
- (l) We understand that we will be considered for participating for which we have submitted the bid security(ies) declaration form and we will be considered for award, subject to fulfilling the eligibility criteria as given in bidding document;
- (m) If our bid is accepted, we opt to take payment into the bank account, nominated by us.
- (n) We declare that the submission of this bid confirms that no agent, middleman or any intermediary has been, or will be engaged to provide any services or any other item of work related to the award and performance of this contract. We further confirm and declare that no agency commission or any payment which may be construed as an agency commission has been, or will be, paid and that the bid price does not include any such amount. We acknowledge the right of the Employer, if he finds to the contrary, to declare our bid to be noncompliant and if the contract has been awarded to declare the contract null and void
- (o) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (p) A Power of Attorney to sign and submit this letter is attached.
- (q) Having inspected the site, examined the complete bid document including Employer's requirements, Conditions of Contract, Special Conditions of Contract, particular conditions of Contract, Technical Specifications, Safety, Health & Environment (SHE) manual, Eligibility Cum Qualification Criteria, Instructions to Bidder and Addenda/Corrigendum etc., thereto (if any) for above mentioned work and prepared the bid entirely in accordance with all the requirements of the bid document and agree entirely with them.
- (r) We here by confirm that we have visited the sites of work and have become conversant with the local conditions of working.
- (s) For the purpose of your evaluation, study, review and decision-making we are ready to let you inspect our business premises / site, etc.
- (t) We authorize K-RIDE or any of their authorized representative to approach, enquire, verify and check the matter furnished in our submission with the concerned client / owner of the Project / Contract and the concerned Banker of reference provided by us.

- (u) We undertake to hold in confidence all documents and information whether Technical or Commercial supplied to us at any time by or on behalf of K-RIDE in connection with this bid and without your written authority or as otherwise required by law not to publish or otherwise disclose the same.
- (v) If our bid is accepted, we agree to establish our project office in Bangalore.
- (w) We have submitted the Statement of Integrity, Eligibility, Social, and Environmental Responsibility signed and abide by the same.
- (x) We understand that this Bid shall be governed by and construed in all respects according to the laws for the time being force in India. The courts at Bangalore will have exclusive jurisdiction in the matter.
- (y) We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

We hereby confirm that this Tender complies with the Tender validity and Earnest money deposit required by the Tender documents.

- (z) We confirm and declare that by virtue of our signature below, to the best of knowledge and belief that the information provided by us as required in this Bid Document, all supporting and explanatory information is truthful and exact.

Name.....
 In the capacity
 of.....

Signed

Duly authorized to sign the Bid for and on behalf of

Date

(SEAL AND SIGNATURE OF THE BIDDER)

LETTER OF PRICE BID

DELETED

K-RIDE

FORMAT FOR AFFIDAVIT TO BE SUBMITTED BY BIDDER ALONGWITH THE BID

(To be executed in presence of Public Notary on non-judicial stamp paper of the appropriate value in accordance with relevant stamp Act. The stamp paper has to be in the name of the bidder) **

I **(Name and designation)** **..... appointed as the attorney/authorized signatory of the bidder (including its constituents), M/s. _____ (hereinafter called the bidder) for the purpose of the Bid for the work of _____ as per the bid No. _____ of K-RIDE, do hereby solemnly affirm and state on behalf of the bidder including its constituents as under:

- *1. That the bidder or any of its constituents has not been Blacklisted/ banned for business dealings for all Government Departments or by Ministry of Railways or by K-RIDE at any time and/or no such blacklisting is in force as on the deadline for submission of bids.
- *2. That none of the previous contracts of the bidder or any of its constituents had been terminated/rescinded for Contractor's failure or part terminated for its failure as a JV/ Consortium partner with forfeiture of its full Performance Security, by Rail Infrastructure Development Company (Karnataka) Ltd. during the period of last 3 years before the deadline for submission of bids.

(Add Proviso of Clause 2, (ITT) suitably, if any Contract was so terminated).

- *3. The bidder or any of its constituents has not been imposed liquidated damages of 5% or more of contract value by any Government Department or by Ministry of Railways or by K-RIDE due to delay in the implementation of any previous contract (either in the capacity of a single entity or as constituent of any other JV/ Consortium) within the period of last 2 years before the deadline for submission of bid [2 years shall be reckoned from the date on which imposed L.D. has exceeded 5% of the contract price] and there are no such accrued delay damages which has not been fully recovered before the deadline for submission of bids on account of contractor's request for deferring recovery to maintain cash flow and K-RIDE has acceded to the same in the interest of the project and the work under the previous contract in question has been completed before the deadline for submission of bid, unless imposition of such delay damages has been set aside by the Competent Authority.
4. That the Bidder or any of its constituents is neither Bankrupt/Insolvent nor is in the process of winding-up nor is such a case pending before any Court on the deadline of submission of the bid.
- *5. That the name of the Bidder or any of its constituents is not on the list of "Poor Performer" of any Government Department or by Ministry of Railways or by K-RIDE as on the deadline for submission of bid.
6. We declare that the bidder or any of its constituents have not either changed their name or created a new business entity. Consequent to having been banned business dealings for specified period which is not over or suspended business dealings or having been declared as poor performer.

7. We declare and certify that balance sheets for last five financial years including that for the latest concluded financial year are being submitted.

OR

We declare and certify that balance sheet for the latest concluded financial year has not been finalized till date and that is why we are furnishing financial data for last five financial years ignoring the latest concluded financial year.

*(# - Delete whichever is not applicable) **.*

8. We declare and certify that we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
9. We declare that the information and documents submitted along with the bid by us are correct and we are fully responsible for the correctness of the information and documents, submitted by us.
10. We understand that in case we cease to fulfil the requirements of qualifying and eligibility criteria at any time after opening of bids and till finalization of bids, it will be our bounden duty to inform the Employer of our changed status immediately and in case of our failure to do so, our bid shall be rejected and bid security declaration form shall be forfeited. In case such failure comes to the notice of Employer at any time after award of the contract, it will lead to termination of the contract and forfeiture of Bid or Performance Security. We shall also be liable for Banning of Business dealings up to a period of five years.
11. We understand that if the contents of the affidavit are found to be false at any stage during bid evaluation, it will lead to rejection of our bid and forfeiture of the bid security. Further, we ***[insert name of the bidder]*** ** _____ and all our constituents understand that we shall be liable for banning of business dealings up to a period of five years.
12. We declare and certify that we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
13. We also understand that our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon us.
14. We declare that the information and the document submitted along with the tender by us are correct and we are fully responsible for the correctness of the information and documents, submitted by us.
15. We undersigned that if the certificate regarding Eligibility Criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender EMD besides banning of business for five years in K-RIDE. Further, we (Insert name of the Tenderer)** and all our constituents understand that our offer shall be summarily rejected.
16. We also understand that if the certificate submitted by us are found to be false/forged or incorrect at any time after the award of contract, it will lead to termination of the contract, along with forfeiture of EMD/SD and performance guarantee besides any other action provided in the contract including banning of business for five years in K-RIDE.

(SEAL AND SIGNATURE OF THE BIDDER)

Verification:

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

(SEAL AND SIGNATURE OF THE BIDDER)

*Modify the contents wherever necessary, in terms of sub-clause 2 ITT.

** The contents in Italics are only for guidance purpose and details as appropriate, are to be filled in suitably by Bidder.

Attestation before Magistrate/Public Notary

K-RIDE

Form – BDF/1

BID SECURITY DECLARATION FORM

DELETED

K-RIDE

Form: JV/Consortium/1

**PRO-FORMA LETTER OF PARTICIPATION FROM EACH PARTNER OF JOINT VENTURE (JV)/
CONSORTIUM**

(On each Firm's Letter Head)

No.....

Dated:.....

From,

.....
.....

To,

The General Manager,
Rail Infrastructure Development Company (Karnataka) Limited,
"Samparka Soudha", 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Rajajinagar 1st Block,
Bangalore - 560 010.

Gentlemen,

Re: ... "[Insert name of work]"

Ref: Your notice for Invitation for Bid (IFB)

1. We wish to confirm that our company/firm (delete as appropriate) has formed a Joint Venture/ Consortium by name of with for the purposes associated with IFB referred to above.
*(Members who are not the lead partner of the JV/ Consortium should add the following paragraph) **
2. 'The JV/ Consortium is led by ... whom we hereby authorize to act on our behalf for the purposes of submission of Bid for and authorize to incur liabilities and receive instructions for and on behalf of any and all the partners or constituents of the Joint Venture/ Consortium.'

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 qualification, represent the Joint Venture/ Consortium:'
3. In the event of our group being awarded the contract, we agree to be jointly with..... (names of other members of our JV/ Consortium) and severally liable to the (K-RIDE) Rail Infrastructure Development Company (Karnataka) Limited, Bangalore, its successors and assigns for all obligations, duties and responsibilities arising from or imposed by the contract subsequently entered into between Rail Infrastructure Development Company (Karnataka) Limited, Bangalore and our JV/ Consortium.

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)

Seal

* Delete as applicable

K-RIDE

Form: JV/Consortium/2

**FORMAT FOR POWER OF ATTORNEY FOR AUTHORISED
SIGNATORY OF JOINT VENTURE (JV)/ CONSORTIUM 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 authorize Mr/Ms. who is presently employed with us and holding the position ofas 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 Rail Infrastructure Development Company (Karnataka) Limited, Bangalore, representing us in all matters, dealing with Rail Infrastructure Development Company (Karnataka) Limited, Bangalore, in all matters in connection with our bid for the said project and if successful, till the whole of the bid process.

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 20..

(Signature of authorized Signatory)

.....

(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 individually, in case of a Joint Venture/ Consortium.
- ii. 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 executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- iii. Also wherever required, the executants(s) should submit for verification the extract of the charter documents and documents such as resolution/ power of attorney in favour of the person executing this power of attorney for the designation of power hereunder on behalf of the bidder.

Form: JV/Consortium/3

**FORMAT FOR POWER OF ATTORNEY TO
LEAD PARTNER OF JOINT VENTURE (JV)/ CONSORTIUM**

*(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 Rail Infrastructure Development Company (Karnataka) Limited Bangalore, has invited Bids for the work of

Whereas, the members of the Joint Venture/ Consortium comprising of 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/ Consortium 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/ Consortium, all acts, deeds and things as may be necessary in connection with the Joint Venture's/ Consortium's bid for the project, as may be necessary in connection the Joint Venture's/ Consortium'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/ Consortium, as the lead partner of the Joint Venture/ Consortium, to do on behalf of the Joint Venture/ Consortium, all or any of the acts, deeds or things necessary or incidental to the Joint Venture's/ Consortium'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/ Consortium in all its dealings with K-RIDE/ Railway or any other Government Agency or any person, in connection with the contract for the said work until culmination of the process of bidding till the contract agreement is entered into with the Rail Infrastructure Development Company (Karnataka) Limited, Bangalore and thereafter till the expiry of the contract agreement.

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/ Consortium.

Dated this the Day of 2022

.....

(Signature)

.....

(Name in Block letters of Executant)

Seal of Company

Witness 1:

Name:

Address:

Occupation:

Witness 2:

Name:

Address:

Occupation:

Notes:

1. To be executed by all the Partners of the JV/Consortium except the lead Partner.
2. 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 executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.

K-RIDE

Form: JV/Consortium/4**DRAFT FORMAT OF JOINT VENTURE/CONSORTIUM AGREEMENT**

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 (here in after referred to as
.....) in the capacity of a Joint Partner of the other part.

The expressions of and shall wherever the context admit, 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:

Rail Infrastructure Development Company (Karnataka) Limited (K-RIDE) [hereinafter referred to as “Employer”] has invited bids for ... “[Insert name of work]” Vide LOA No.....awarded contract.

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 AGREEMENT.
 - i. Notice for Bid, and
 - ii. Bidding document
 - iii. Any Addendum/Corrigendum issued by Rail Infrastructure Development Company (Karnataka) Limited
 - iv. The bid submitted on our behalf jointly by the Lead Partner.
 - v. Letter of Acceptance issued by Rail Infrastructure Development Company (Karnataka) Ltd.
2. The ‘Parties’ have studied the documents and LOA issued to enter into Joint Venture/ Consortium as under and have agreed to participate.
3. M/s shall be the lead member of the JV/ Consortium for all intents and purpose and shall represent the Joint Venture/ Consortium in its dealing with the Employer. For the purpose of execution, the parties agree to nominate as the leader duly authorized to sign and submit all documents and enter into correspondence with the Employer.
4. The ‘Parties’ have resolved that the distribution of share and responsibilities between the JV/Consortium partners is as under
 - (a) Lead Partner Share %

Responsibilities

(I) Key Activities and %age execution assigned

 - i.

(II) BOQ Schedule/Bill No. and %age execution assigned

- i.
- ii.
- iii.

(b) Joint Venture/ Consortium Partner Share.....%

Responsibilities

(I) Key Activities and %age execution assigned

- i.

(II) BOQ Schedule/Bill No. and %age execution assigned

- i.
- ii.
- iii.

(c) Joint Venture/ Consortium Partner Share.....%

Responsibilities

(I) Key Activities and %age execution assigned

- i.

(II) BOQ Schedule/Bill No. and %age execution assigned

- i.
- ii.
- iii.

Note: In case any Bill or items of a Bill are proposed to be executed by more than one JV/ Consortium partner then indicate the breakup of that Item/Bill no. for each JV/ Consortium partner.

5. JOINT AND SEVERAL RESPONSIBILITIES

The Parties undertake that they shall be jointly and severally liable to the Employer in the discharge of all the obligations and liabilities as per the contract with the Employer and for the performance of contract awarded to their JV/Consortium.

6. ASSIGNMENT AND THIRD PARTIES

The parties shall co-operate throughout the entire period of this AGREEMENT 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 and the Employer.

7. EXECUTIVE AUTHORITY

The said Joint Venture/ Consortium through its authorized representative shall receive instructions, payments from the Employer. 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. GUARANTEES AND BONDS

Performance Security and other Securities of a JV/ Consortium shall be in the name of the JV/ Consortium that submits the bid.

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 Employer for the Project. Common expenses shall be shared by both 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/ Consortium.

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 Bangalore.

14. VALIDITY

This Agreement shall remain in force till the defect liability period is over and Securities are released.

15. This AGREEMENT 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 Bid.

16. This AGREEMENT shall be construed under the laws of India.

17. NOTICES BETWEEN JV/ CONSORTIUM PARTNERS

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

.....

.....

.....

.....

(Name & Address)

(Name & Address)

IN WITNESS WHEREOF THE PARTIES, have executed this AGREEMENT the day, month and year first before written.

M/s.....

M/s.....

.....

.....

(Seal)

(Seal)

Witness

1.....(Name & Address)

2..... (Name & Address)

K-RIDE

Bidders Qualification

To establish its qualifications to perform the contract in accordance with Section 2 (Qualification Information) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

To establish its qualifications to perform the contract in accordance with Section 2 (Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI - 1: Bidder's Information Sheet

Bidder's Information	
Bidder's legal name	
Bidder's country of constitution	
Bidder's year of constitution	
Bidder's legal address in country of constitution	
Bidder's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	

The bidder shall attach copies of the following original documents with the form:

1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITT clause 2.
2. Authorization to represent the firm or JV/ Consortium named in above, in accordance with ITT clause 14.
3. In case of JV/ Consortium, JV/ Consortium agreement, in accordance with ITT clause 2.

SEAL AND SIGNATURE

Form ELI - 2: JV/ Consortium Information Sheet

Each member of a JV/ Consortium must fill in this form separately

JV / Consortium Information	
Bidder's legal name	
JV/ Consortium Partner's legal name	
JV/ Consortium Partner's country of constitution	
JV/ Consortium Partner's year of constitution	
JV/ Consortium Partner's legal address in country of constitution	
JV/ Consortium Partner's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)	
Bidder's Bank Details: (a) Name of the Bank and branch: (b) Account Number: (c) IFSC code: (d) Bank's Contact Number and Fax Number: (e) PAN: (f) GST Registration No:	

The bidder shall attach copies of the following original documents with the form:

1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITT clause 2.
2. Authorization to represent the firm named above, in accordance with ITT clause 14.

Note: Following needs to be submitted by the bidder;

- (a) Affidavit in case of Proprietary firm.
- (b) Partnership Deed in case of partnership firm.
- (c) Memorandum & Article of Association in case of Public/Private limited company.
- (d) Authorization/POA in favour of authorised signatory of bidder to sign the bid.

SEAL AND SIGNATURE

Form FIN-1: Financial Situation

(Each Bidder or each member of a JV/Consortium must fill in this form separately)

NAME OF BIDDER/JV/CONSORTIUM PARTNER

	Financial Data for Last 5 Years [Indian National Rupees]				
	Year 1:	Year 2:	Year 3:	Year 4:	Year 5:
1. Total Assets					
2. Current Assets					
3. Total Liabilities					
Current Liabilities					
5. Net Worth [= 1 – 3]					
6. Working Capital [= 2 - 4]					
7. Profit Before Tax (PBT)					

1. The bidder shall attach copies of the following original documents with the form

Copies of the audited balance sheets, including all related notes, and income statements for the last five years, as indicated above, complying with the following conditions.

- i. All such documents reflect the financial situation of the Bidder or partner to a JV/ Consortium, and not sister or parent companies.
- ii. Historic financial statements must be audited by a certified accountant.
- iii. Historic financial statements must be complete, including all notes to the financial statements.
- iv. Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

2. Contents of this form should be certified by a Statutory Auditor

- i. In the event that the audited accounts for the latest concluded Financial Year are not available, the Bidder shall furnish information pertaining to the last five financial years after ignoring the latest concluded financial year. In case, the bidder submits audited financial information for the last six or more years, only the figures for the latest five years shall be considered for evaluation.
- ii. Financial data for last five financial years has to be submitted by the bidder along with audited balance sheets. The financial information of the Bidder must be certified either by the Independent Financial Auditor (statutory Auditor) of the company appointed under the companies' Act.

- iii. In case any discrepancy in data is found between the balance sheet and the financial information submitted, the data as available in the balance sheet will be considered.
- iv. In case the audited balance sheet of the last financial year is not made available by the Bidder, he has to submit an affidavit certifying that 'The Balance Sheet has actually not been audited so far'. In such a case the financial data of previous '4' audited financial years will be taken into consideration for evaluation. If audited balance sheet of any year other than the last financial year is not submitted, then the bid will be considered as non-responsive
- v. In case the company's financial year is from Jan 19 to Dec 19, then it will be considered under financial year 2019 - 20 similar procedure will be applicable for other financial years also.

SEAL AND SIGNATURE OF THE BIDDER

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

(Signature of Statutory Auditor)

Name of Statutory Auditor : _____

Registration No: _____

(Seal)

Form FIN-2: Annual Construction Turnover for the last 5 years

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

NAME OF BIDDER/JV/CONSORTIUM PARTNER:

Sl.No.	Year	Annual Turnover	Multiplying factor	Updated Annual turnover
		INR	INR	INR
1	2017-2018		1.22	
2	2018-2019		1.16	
3	2019-2020		1.10	
4	2020-2021		1.05	
5	2021-2022		1.00	

Annual Turnover Data for the Last 5 Years (Construction only)			
Year	Amount Currency	Exchange Rate	Indian National Rupees Equivalent
Average Annual Construction Turnover for last 5 Financial Years			
Minimum Financial Turnover for any last 2 Financial Years as per clause 3.2(a)			

1. The information supplied shall be substantiated by data in the audited balance sheets and profit and loss accounts for the relevant years and submitted as attachments to form Fin-1 in respect of the bidder or all partners constituting the bidder.
2. Contents of this form should be certified by a Statutory Auditor.
3. In the event that the audited accounts for the latest Financial Year are not available, the Bidder shall furnish information pertaining to last three financial years after ignoring the latest financial year. In case the bidder submits audited financial information for the last four or more years, only the figures for the latest three years shall be considered for evaluation.

SEAL AND SIGNATURE

Form FIN-3: Current Contract Commitments / Works in Progress

Bidders and each partner to a JV/Consortium should provide information on their current commitments on all contract that have been awarded, or which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Contract Commitments

Sl. No.	Description of work	Contract No. & date	Name & address of Employer, Tel./Fax/ Email	Value of Contract in INR	Stipulated Period of completion	Value of Balance work	Anticipated date of Completion
1							
2							
3							
4							
5							
Total							

1. For calculation of 'Updated contract value" in column 5 above, assume inflation as per multiplying Factors given in FIN-2.
2. Bidder should provide information on their current commitments or all contracts that have been awarded or for which a letter of intent or acceptance has been received or for contracts approaching completion but for which a completion certificate is yet to be issued.
3. Total Equivalent INR should be calculated using the selling exchange rate of Reserve Bank of India as on 28th day prior to the last date of submission of bids. In case publication is not available on 28th day, previous working day published exchange rate shall be considered for evaluation.

Note: Enclose Certificate(s) from Engineer(s) Incharge (not below the rank of Executive Engineer) for Value of outstanding work. In case it is not feasible to furnish certificate from all the units the bidder should record the following certificate on Fin 3:

"Certified that current commitments on all the contracts that have been awarded or for which a letter of intent or acceptance has been received or for the works in progress or the works approaching completion, value of outstanding work has been indicated in the above table correctly. It is further certified that if later on the employer discovers that information provided in the table is incorrect then the employer will treat our bid invalid and it will be liable for rejection"

SEAL AND SIGNATURE

FORM NO. 1

DELETED

K-RIDE

FORM NO. 2

**CHECKLIST FOR CLAUSES PERTAINING TO SUMMARY
REJECTION OF BID**

We, the undersigned, declare that we have read and understood the content of ITT clauses section:2 mentioned below. We also understand that our bid shall be summarily rejected in case we fail to comply the requirements of undermentioned clauses:

ITT Clause No. Section 2	Reason for Summary Rejection
	Non-submission of Letter Technical Bid (Form PS-1)
2.5	Non-submission of Affidavit- (Form PS-3)
11.5 & 22	Non-submission of immediate information to the Employer in case Bidder ceases to fulfill eligibility in terms of ITT clause 2
11.5	Quoting more than one percentage for any schedule
13	Bid not accompanied with EMD
14	Bid not accompanied with power of attorney/General power of Attorney to sign on behalf of the bidders

SEAL AND SIGNATURE OF THE BIDDER

Form: 3 C 1

FORMAT FOR CERTIFICATE TO BE SUBMITTED BY BIDDER ALONGWITH THE BID
(On the letter head of the Firm)

We/I, _____, having registered office at _____ do hereby certify that “I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration by the competent Authority shall be attached.)”

Dated this _____ day of _____, 2022

For- _____

Authorized Signatory Signature _____

Full Name: _____

Place: _____

(SEAL AND SIGNATURE OF THE BIDDER)

Form: 3 C 2

**FORMAT FOR CERTIFICATE TO BE SUBMITTED BY
BIDDER ALONGWITH THE BID FOR SUB CONTRACTING**

(On the letter head of the Firm)

We/I, _____, having registered office at _____ do hereby certify that "I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the competent Authority. I hereby certify that his bidder fulfils all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration the Competent Authority shall be attached.)"

Dated this _____ day of _____, 2022

For- _____

Authorized Signatory Signature _____

Full Name: _____

Place: _____

(SEAL AND SIGNATURE OF THE BIDDER)

Form 5

Key Personnel for the work

MINIMUM QUALIFICATION AND EXPERIENCE REQUIRED FOR KEY PERSONNEL TO BE DEPLOYED FOR THE WORK

Sl. No.	Key Personnel	Qualifications & Total Experience	Particular Experience (Minimum requirement)	Minimum Number of Personnel Required	Name of the key personnel proposed	Qualification	Total number of years of experience	Number of Years in similar works experience
1	Project Manager (Team Leader)	Bachelor's Degree/Post Graduate Degree in Civil Engineering	Minimum 12 years total experience and 5-year experience in the role of Project Manager in the execution of similar type of work.	1				

Note: Further details to be updated as per clause 3.3 (c) of section 2 ITT.

(Signature)

(Name of Signatory)

(Capacity of Signatory)

Seal.....

Format of Curriculum Vitae (cv) for proposed key professional staff

Proposed Position:

Name of Firm:

Name of Staff:

Profession:

Date of Birth:

Years with Firm/Entity: Nationality:

Membership in Professional Societies:

Detailed Tasks Assigned:

Key Qualifications:

[Give an outline of staff member’s experience and training most pertinent to tasks on assignment. Describe degree of responsibility held by staff member on relevant previous assignments and give dates and locations.]

Education:

[Summarize college/university and other specialized education of staff member and degrees obtained.]

Employment Record:

[Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, names of employing organizations, titles of positions held, and locations of assignments. Also give types of activities performed and client references, where appropriate.]

Period	Name of Employing Organization	Name of the Project	Title / Position	Activity performed	Location of the Assignment

Languages:

[For each language, indicate proficiency: excellent, good, fair, or poor; in speaking, reading, and writing]

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

Date:

[Signature of staff member and authorized representative of the Firm] Day/Month/Year

Full name of staff member: _____

Full name of the authorized representative: _____

FORM CL-2

UNDERTAKING FROM SPECIALIST SUB-CONTRACTOR

(Refer Clause of EQC)

(On the Letterhead of specialist sub-contractor)

I/We,.....(Legal Name of Specialist Subcontractor) hereby confirm that we are associating with(Legal name of the bidder) for the work of(Name of work as stated in Invitation for Bids {IFB}), for the key activity stated in clause 3.2 (c) of ITT (if applicable).

I/We hereby undertake that in case M/s.....(Legal name of the bidder) are awarded the work of(Name of work as stated in Invitation for Bids {IFB}),the key activity stated in clause 3.2 (c) of ITT shall be undertaken by us as per bid conditions (if applicable).

**STAMP & SIGNATURE OF AUTHORISED
SIGNATORY OF SPECIALIST SUB CONTRACTOR**

**STAMP & SIGNATURE OF AUTHORISED
SIGNATORY OF BIDDER**

Form CL-3

Availability of Financial Resources
(Section-2, ITT clause 3.3 (b))

Bidders must demonstrate sufficient financial resources, comprising of Working Capital supplemented by credit line statements or overdraft facilities to meet the Bidder's financial requirements for

- a) its current contract commitments, and
- b) the subject contract.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: _____

Financial Resources		
No.	Source of financing	Amount (equivalent)
1	Working Capital	
2	Credit Line	
Total Available Financial Resources		

^aTo be considered, Credit Line must be substantiated by a letter from the bank issuing the line of credit, specific for the subject contract, as prescribed. Any letter or document not complying with this requirement shall not be considered as supplementary financial resources.

Note:

In case the financial statement data is other than Indian Rupees, the equivalent Indian Rupees with the exchange rates as defined in the Section-2, ITT.

Evidence of Availability of Credit Line Financial Resources

(Section-2 ITT, Clause:3(b))

[Each Bidder must fill out this form to demonstrate financial resources comprising credit line statements or overdraft facilities.]

Project Name:

Bidding Package Name and Identification Number: (to be filled in as indicated in ITT 1) ...

BANK CERTIFICATE

This is to certify that M/s is a reputed company with a good financial standing.

If the contract for the work, namely..... is awarded to the above firm, we shall be able to provide overdraft / credit facilities to the extent of Rs to meet their working capital requirements for executing the above contract.

___ Sd. ___

Name of Bank: _____

Senior Bank Manager _____

Address of the Bank _____

[In case of Joint Venture, change the text as follows:]

This is to certify that M/s who has formed a Joint Venture with M/s and M/s for participating in this bid, is a reputed company with a good financial standing.

If the contract for the work, namely..... is awarded to the above joint venture, we shall be able to provide overdraft / credit facilities to the extent of Rs..... to M/s to meet their working capital requirements for executing the above contract.

Form EXP-1**WORK EXPERIENCE CERTIFICATE**

To whom so ever it may concern
(Issued for the purpose of Quoting in K-RIDE tenders)

M/s/Sri (Name and address of the contractor) is a working contractor of this unit and was awarded the following work. The relevant details of the work are as under: -

Sl.No	Description	Details
1	Name of work	
2	Acceptance Letter No and Date	
3	Agreement Number, date and name of the agency	
4	Agreement value in Rupees (in words and figures)	
5	Due date of completion	
6	Actual date of completion of work	
7	Value of Final Bill if passed (in words)	
8	Work completed but Final measurements not recorded. a) Amount paid so far as in CC bill No.	
9	Work completed. Final measurements recorded with negative variation a) Amount so far paid as in CC bill No.	
10	Work completed. If Final measurements recorded with Positive variation which is not sanctioned yet. Original agreement value of Last sanctioned agreement value whichever is lower.	
11	Scope of work (Broad category of works i.e., the name of the work in the agreement on which work is	
12	Details of values of major components/ works executed in the completed work.	

Note:

The Certificate to satisfy similar work should be signed by an officer not lower than JAG officer in Railways and Executive Engineer rank or equivalent grade in other department of Govt. of India/State Government/PSUs of Government of India / State Undertaking and Competent Authority of Public Listed Company.

Signature :.....

Name of officer.....

Designation:

Address:

Office seal:

.....

Phone/FAX No.:

.....

Date :

--00--00--00--

SECTION-4

**FORM OF TENDER, LETTER OF ACCEPTANCE,
NOTICE TO PROCEED WITH THE WORK AND
AGREEMENT FORM ETC.,**

FORM OF TENDER, LETTER OF ACCEPTANCE, NOTICE TO PROCEED WITH THE WORK AND AGREEMENT FORM ETC.,

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K-RIDE

FORM OF TENDER (DELETED)

Please refer Form PS-1 of Section 3: Qualification Information/Bidding Forms.

FORM-1

LETTER OF ACCEPTANCE

(Letter head paper of the Employer)

_____ [date]

To: _____ [name and address of the Contractor]

Dear Sirs,

This is to notify you that your Tender dated _____ for execution of the “**(Name of the Work)**”.
(Tender No: , Dated: -) for the Contract Price of Rupees _____.(_____ [amount in words and figures], as corrected and modified in accordance with the Instructions to Tenderers is hereby accepted by our Agency.

You are hereby requested to furnish Security deposit (Performance Security) plus additional security for unbalanced tenders in accordance with of Clause 25.5 of ITT, in the form detailed in Clause 29.1 of ITT and clause 43 of the conditions of contract for an amount of Rs. _____(As defined in contract data) within 20 days of the receipt of this letter of acceptance valid up to 30 days from the date of expiry of Defects Liability Period i.e. up to and sign the contract.

Yours faithfully,

Authorized Signature

Name and Title of Signatory

Name of Agency.

ISSUE OF NOTICE TO PROCEED WITH THE WORK

(Letter head of the Employer)

_____ (Date)

To

_____ (name and address of the Contractor)

Dear Sirs:

With reference to LOA, for the construction of "**Name of the Work**". Tender Price of Rs. _____, you are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of signatory authorized to sign on behalf of Employer)

AGREEMENT FORM

Agreement

This agreement, made the _____ day of _____, 20____, between _____ (Name and Address of Employer) (herein after called “the Employer”) of the _____ one part and _____ [name and address of contractor] (herein after called “the Contractor”) of the other part.

Whereas the Employer is desirous that the Contractor execute, “**Name of the Work**”. Tender No: (-----) for (herein after called “The Works”) and the Employer has accepted the Tender by the Contractor for the execution and completion of such Works and the remedying of any defects therein at a contract price of Rupees.....

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all aspects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
 - i) Letter of Acceptance;
 - ii) Notice to proceed with the works;
 - iii) Contractor’s Tender;
 - iv) Contract Data;
 - v) Conditions of contract (including Special Conditions of Contract and Particular Condition of Contract)
 - vi) Specifications;
 - vii) Drawings;
 - viii) Bill of Quantities; and
 - ix) Any other document listed in the Contract Data as forming part of the contract.

In witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of _____ was hereunto affixed in the presence of:
Signed, Sealed and Delivered by the said _____

in the presence of:
Binding Signature of Employer _____
Binding Signature of Contractor _____

SECTION – 5

CONDITIONS OF CONTRACT(CC) AND SPECIAL CONDITIONS OF CONTRACT (SCC)

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CONDITIONS OF CONTRACT

A. GENERAL

1. DEFINITIONS

- 1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Bold letters are used to identify defined terms.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Tender.

Compensation Events are those defined in Clause 38 hereunder.

The **Completion Date** is the date of completion of the Works as certified by the Employer in accordance with Sub Clause 46.1.

The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.2 below.

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or corporate body or Joint Venture whose Tender to carry out the Works has been accepted by the Employer.

The **Contractor's Tender** is the completed Tender document submitted by the Contractor to the Employer.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; **months** are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The **Defects liability period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the party who will employ the Contractor to carry out the Works.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Initial Contract price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Employer by issuing an extension of time.

'**Joint Venture**' means an ad hoc association of firms that pool their resources and skills to undertake a large or complex contract in the role of "Contractor," with all firms (partners in the JV) being legally liable, jointly and severally, for the execution of the Contract in the event of a partner's withdrawal.

Materials are all supplies, including consumables, used by the contractor for incorporation in the Works.

Plant is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Employer.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Dates.

A Subcontractor is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

A **Variation** is an instruction given by the Employer which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

2. INTERPRETATION

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Employer will provide instructions clarifying queries about the Conditions of Contract.

2.2 The documents forming the Contract shall be interpreted in the following order of priority:

- (1) Agreement
- (2) Letter of Acceptance, notice to proceed with the works
- (3) Contractor's Tender
- (4) Contract Data
- (5) Conditions of Contract
- (6) Specifications
- (7) Drawings
- (8) Bill of quantities and
- (9) any other document listed in the Contract Data as forming part of the Contract.

3. LAW GOVERNING CONTRACT

3.1 The law governing the Contract is the Laws of India supplanted by the Karnataka Local Acts.

4. EMPLOYER'S DECISIONS

4.1 Except where otherwise specifically stated, the Employer will decide contractual matters between the Employer and the Contractor.

5. DELEGATION

5.1 The Employer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6. COMMUNICATIONS

6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

7. SUBCONTRACTING:

7.1 The Contractor may subcontract with the approval of the Employer but may not assign the Contract without the approval of the Employer in writing. Subcontracting does not alter the Contractor's obligations.

8. OTHER CONTRACTORS

8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer.

9. PERSONNEL

9.1 The Contractor shall employ the technical personnel (of number and qualifications) as may be stipulated by K-RIDE from time to time during the execution of the work. The technical staff so employed shall be available at site as may be stipulated by the Employer.

9.2 If the Employer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

10. EMPLOYER'S AND CONTRACTOR'S RISKS

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. EMPLOYER'S RISKS

11.1 The Employer is responsible for the excepted risks which are:

(a) Rebellion, riot commotion or disorder unless solely restricted to employees of the Contractor or his Sub Contractors arising from the conduct of the Works; or

(b) a cause due solely to the design of the Works, other than the Contractor's design; or

(i) could not have reasonably foreseen; or

(ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures;

(A) prevent loss or damage to physical property from occurring by taking appropriate measures or

(B) insure against such loss or damage

12. CONTRACTOR'S RISKS

12.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

13. INSURANCE:

13.1 The Contractor shall prior to commencing the works, effect and thereafter maintain insurances, in the joint names of the Employer and the Contractor, (cover from the first working day after the Start Date to the end of Defects Liability Period), in the amounts stated in the Contract Data:

- (a) for loss of or damage to the Works, Plants and Materials and the Contractor's equipment;
- (b) for liability of both Parties for loss, damage, death and injury to third parties or their property arising out of the Contractor's performance of the Contract including the Contractor's liability for damage to the Employer's property other than the Works and
- (c) for liability of both Parties and of any Employer's representative for death and injury to the Contractor's personnel except to the extent that liability arises from the negligence of the Employer, any Employer's representative or their Employees.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Employer for his approval before the Start Date. All such insurance shall provide for compensation to be payable to rectify the loss or damage incurred. All payments received from insurers relating to loss or damage shall be held jointly by the Parties and used for the repair of the loss or damage or as compensation for loss or damage that is not to be repaired.

13.3 If the Contractor fails to effect or keep in force any of the insurances referred to in the previous sub-clauses or fails to provide satisfactory evidence, policies or receipts, the Employer may without prejudice to any other right or remedy, effect insurance for the cover relevant to such default and pay the premiums due and recover the same as a deduction from any other monies due to the Contractor. If no payments is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of an insurance shall not be made without the approval of the Employer.

13.5 Both Parties shall comply with any conditions of the insurance policies.

14. SITE INVESTIGATION REPORTS:

14.1 The Contractor, in preparing the tender, shall rely on any site investigation reports referred to in the Contract data, supplemented by any information available to the Tenderer.

15. QUERIES ABOUT THE CONTRACT DATA

15.1 The Employer will clarify queries on the Contract Data.

16. CONTRACTOR TO CONSTRUCT THE WORKS

16.1 The Contractor shall construct the Works in accordance with the Specification and Drawings.

17. THE WORKS TO BE COMPLETED BY THE INTENDED COMPLETION DATE

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the program submitted by the Contractor, as updated with the approval of the Employer, and complete them by the Intended Completion Date.

18. APPROVAL BY THE EMPLOYER:

18.1 The Contractor shall submit Specification and drawings showing the proposed Temporary Works to the Employer, who is to approve them if they comply with the Specifications and Drawings.

18.2 The Contractor shall be responsible for the design of Temporary Works

18.3 The Employer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

18.4 The Contractor shall obtain approval of third parties to design of the temporary Works where required.

18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Employer before their use.

19. SAFETY

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

20. DISCOVERIES

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Employer of such discoveries and carry out the Employer's instructions for dealing with them.

21. POSSESSION OF THE SITE

21.1 The Employer shall give possession of all parts of the Site to the Contractor progressively, If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be compensation event.

22. ACCESS TO THE SITE

22.1 The Contractor shall allow the Employer and any person authorized by the Employer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

23. INSTRUCTIONS

23.1 The Contractor shall carry out all instructions of the Employer which comply with the applicable laws where the Site is located.

24 PROCEDURE FOR RESOLUTION OF DISPUTES:

- 24.1 If the Contractor is not satisfied with the decision taken by the Employer, the dispute shall be referred by either party to Arbitration within 30 days of the notification of the Employer's decision.
- 24.2 If neither party refers the dispute to Arbitration within the above 30 days, the Employer's decision will be final and binding.
- 24.3 The Arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of Contract.

B. TIME CONTROL

25. PROGRAM

- 25.1 Within the time stated in the Contract Data the Contractor shall submit to the Employer for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works.
- 25.2 The Employer's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Employer again at any time. A revised Program is to show the effect of Variations and Compensation Events.

26. EXTENSION OF THE INTENDED COMPLETION DATE

- 26.1 The Employer shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date.
- 26.2 The Employer shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Employer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information.

27. DELAYS ORDERED BY THE EMPLOYER

- 27.1 The Employer may instruct the Contractor to delay the start or progress of any activity within the Works.

28. MANAGEMENT MEETINGS

- 28.1 The Employer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the progress achieved and the plans for remaining work.
- 28.2 The responsibility of the parties for actions to be taken is to be decided by the Employer either at the management meeting or after the management meeting and stated in writing to be distributed to all who attended the meeting.

C. QUALITY CONTROL

29. IDENTIFYING DEFECTS

29.1 The Employer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Employer may instruct the Contractor to search for a Defect and to uncover and test any work that the Employer considers may have a Defect.

30. TESTS

30.1 If the Employer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect the test shall be a Compensation Event.

31. CORRECTION OF DEFECTS

31.1 The Employer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

31.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Employer's notice.

32. UNCORRECTED DEFECTS

32.1 If the Contractor has not corrected a Defect within the time specified in the Employer's notice, the Employer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

D. COST CONTROL

33. BILL OF QUANTITIES (BOQ)

33.1 The BOQ shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.

33.2 The BOQ is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the BOQ for each item.

34. VARIATIONS

34.1 The Employer shall have power to order the Contractor to do any or all of the following as considered necessary or advisable during the progress of the work by him

- (a) Increase or decrease of any item of work included in the Bill of Quantities (BOQ);
- (b) Omit any item of work;

- (c) Change the character or quality or kind of any item of work;
 - (d) Change the levels, lines, positions and dimensions of any part of the work;
 - (e) Execute additional items of work of any kind necessary for the completion of the works; and
 - (f) Change in any specified sequence, methods or timing of construction of any part of the work.
- 34.2 The Contractor shall be bound to carry out the work in accordance with any instructions in this connection, which may be given to him in writing by the Employer and such alteration shall not vitiate or invalidate the contract.
- 34.3 Variations shall not be made by the Contractor without an order in writing by the Employer, provided that no order in writing shall be required for increase or decrease in the quantity of an item appearing in the BOQ so long as the work executed conforms to the approved drawings.
- 34.4 The Contractor shall promptly request in writing to the Employer to confirm verbal orders and the officer issuing oral instructions shall confirm it in writing within 30 days of request, failing which the work shall be carried out as through there is no variation. In case variation is approved it shall be accompanied with BOQ, failing which the contractor shall be responsible for deviation if any.
- 35. PAYMENTS FOR VARIATIONS**
- 35.1 Payment for increase in the quantities of an item in the BOQ up to 25% of that provided in the Bill of Quantities shall be made at the rates quoted by the Contractor.
- 35.2 For quantities in excess of 125% of the tendered quantity of an item as given in the BOQ, the Contractor shall be paid at the rate entered in or derived from in the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract.
- 35.3 If there is no rate for the additional, substituted or altered item of the work in the BOQ, efforts would be made to derive the rates from those given in the BOQ or the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) and if found feasible the payment would be made at the derived rate for the item plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract.
- 35.4 If the rates for additional, substituted or altered item of work cannot be determined either as at 35.1 or 35.2 or 35.3 above, the Contractor shall be requested to submit his quotation for the items supported by analysis of the rate or rates claimed, within 7 days.
- 35.5 If the Contractor's quotation is determined unreasonable, the Employer may order the Variation and make a change to the Contract Price which shall be based on Employer's own forecast of the effects of the Variation on the Contractor's costs.
- 35.6 If the Employer decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.
- 35.7 Under no circumstances the Contractor shall suspend the work on the plea of non-settlement of rates for items falling under this Clause.

36. SUBMISSION OF BILLS FOR PAYMENT

- 36.1 The Contractor shall submit to the Employer monthly bills of the value of the work completed less the cumulative amount paid previously.
- 36.2 The Employer shall check the Contractor's bill and determine the value of the work executed which shall comprise of (i) value of the quantities of the items in the BOQ completed and (ii) valuation of Variations and Compensation Events.
- 36.3 The Employer may exclude any item paid in a previous bill or reduce the proportion of any item previously paid in the light of later information.

37. PAYMENTS

- 37.1 Payments shall be adjusted for deductions for advance payments other than recoveries in terms of contract and taxes, at source as applicable under law. The Employer shall pay the Contractor within 60 days of submission of bill. The Contractor shall be liable to pay liquidated damages for shortfall in progress.
- 37.2 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

38. COMPENSATION EVENTS:

- 38.1 The following are Compensation Events unless they are caused by the Contractor:
- (a) The Employer instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.
 - (b) The Employer gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
 - (c) The effect on the Contractor of any of the Employer's Risks.
 - (d) Other Compensation Events listed in the Contract Data or mentioned in the Contract.
- 38.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date is extended. The Employer shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.
- 38.3 As soon as information demonstrating the effect of each Compensation event upon the Contractor's forecast cost has been provided by the Contractor, it is to be assessed by the Employer and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Employer shall adjust the Contract Price based on Employer's own forecast. The Employer will assume that the Contractor will react competently and promptly to the event.
- 38.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Employer.

39. TAX

- 39.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales, GST and other taxes that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

40. PRICE ADJUSTMENT:

**CHANGE IN COSTS - PRICE ADJUSTMENT
PRICE ADJUSTMENT CLAUSE FOR WORKS CONTRACTS**

Contract price shall be adjusted for increase or decrease in rates and prices of labour, materials, fuels and lubricants in accordance with the following principles and procedures and as per formula given here under.

(a) The price Adjustment shall apply for the work done from the date of commencement up to the end of original period of completion and shall not apply to work carried out beyond the stipulated period of completion for reasons attributable to the Contractor.

(b) The Price adjustment shall be determined during each quarter from the formula given in contract data.

(c) Following expression and meanings are assigned to the work done during the quarter:

R - Total value of work done during the quarter. It would include the amount of secured advance for materials paid for (if any) during the quarter, less the amount of the secured advance recovered during the quarter. It will exclude value for works executed under variations for which price adjustment (if any) will be worked out separately based on the terms mutually agreed.

(d) To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other Clauses in the Contract, the unit rates included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

41. LIQUIDATED DAMAGES

- 41.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the Contract Data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

- 41.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment of bill.

42. ADVANCE PAYMENTS:

- 42.1 The Employer shall make payment to the Contractor of the amounts stated in the Contract Data by the date stated in the Contract Data, against provision by the Contractor of an unconditional

bank guarantee in a form acceptable to the Employer issued by a Nationalized/Scheduled Bank in amounts equal to the advance payment. The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. The advance payments shall be repaid with prevailing bank interest.

- 42.2 The Contractor is to use the advance payment only to pay for Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Employer
- 42.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuation of the work done, variations, price adjustments, compensation events or liquidated damages

43. SECURITIES:

- 43.1 The Performance Security (including additional security for unbalanced tenders) shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and type of instrument acceptable to the Employer. The Performance Security as indicated in the contract data shall be valid until a date 30 days from the date of expiry of Defects Liability Period and the additional security for unbalanced tenders shall be valid until a date 30 days from the date of issue of the certificate of completion.

44. COST OF REPAIRS:

- 44.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. FINISHING THE CONTRACT

45. COMPLETION

- 45.1 The Contractor shall request the Employer to issue a Certificate of Completion of the Works and the Employer will do so upon deciding that the Work is completed.

46. TAKING OVER

- 46.1 The Employer shall take over the Site and the Works within seven days of issuing a certificate of Completion.

47. FINAL ACCOUNT

- 47.1 The Contractor shall supply to the Employer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Employer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 90 days of receiving the Contractor's account if it is correct and complete. If it is not, the Employer shall issue within 90 days a schedule that states the scope of the

corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Employer shall decide on the amount payable to the Contractor and make payment within 60 days of receiving the Contractor's revised account.

48. AS BUILT DRAWINGS AND /OR OPERATING AND MAINTENANCE MANUALS

- 48.1 If "As Built Drawings" (Completion Drawing) and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.
- 48.2 If the Contractor does not supply the Drawings by the dates stated in the Contract Data, or they do not receive the Employer's approval, the Employer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

49. TERMINATION

- 49.1 The Employer may terminate the Contract if the other party causes a fundamental breach of the Contract.
- 49.2 Fundamental breaches of Contract include, but shall not be limited to the following:
- (a) the Contractor stops work for 45 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Employer;
 - (b) - "DELETED"-
 - (c) The Contractor becomes bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
 - (d) - "DELETED"-
 - (e) the Employer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Employer;
 - (f) the Contractor does not maintain a security which is required;
 - (g) the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and
 - (h) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in the executing the Contract.

For the purpose of this paragraph: "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish

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Tender prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.”

49.3 When either party to the Contract gives notice of a breach of contract to the Employer for a cause other than those listed under Sub Clause 49.2 above, the Employer shall decide whether the breach is fundamental or not.

49.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

49.5 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

50. PAYMENT UPON TERMINATION

50.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Employer shall prepare bill for the value of the work done less advance payments received up to the date of the bill, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

50.2 If the Contract is terminated at the Employer's convenience, the Employer shall prepare bill for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract, and less taxes due to be deducted at source as per applicable law and make payment accordingly.

51. PROPERTY

51.1 All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a contractor's default.

52. RELEASE FROM PERFORMANCE

52.1 If the Contract is frustrated by any event entirely outside the control of either the Employer or the Contractor the Employer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

F. SPECIAL CONDITIONS OF CONTRACT

1. LABOUR :

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

The Contractor shall, if required by the Employer, deliver to the Employer a return in detail, in such form and at such intervals as the Employer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Employer may require.

2. COMPLIANCE WITH LABOUR REGULATIONS:

During continuance of the Contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, Employer shall have the right to deduct any money due to the Contractor including his amount of security deposit. The Employer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

3. PROTECTION OF ENVIRONMENT:

The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation. During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.

4. CLAIMS, DISPUTES AND ARBITRATION

4.1 Contractor's Claims

If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not

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later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/or instruct the Contractor to keep and provide further contemporary records. The Contractor shall permit the Engineer to inspect all these records, and shall (if instructed) submit copies to the Engineer.

Within 45 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- (a) this fully detailed claim shall be considered as interim;
- (b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Engineer may reasonably require; and
- (c) the Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

Within 45 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Engineer and approved by the Contractor, the Engineer shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within such fixed period of time.

Each Payment Certificate shall include such amounts for any claim as have been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

The Engineer shall proceed in accordance with Sub-Clause: [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause: [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.

4.2 Amicable Settlement

In case any dispute between the Engineer and the Contractor for which claim has already been made by the contractor, remains unresolved, the Contractor shall, then, give notice of dissatisfaction and intention to commence arbitration to the Employer duly specifying the subject of the dispute or difference as also the amount of claim item wise. The Parties shall make attempts to settle the dispute amicably before the commencement of arbitration as per procedure set by K-RIDE. However, unless both Parties agree otherwise, demand for arbitration may be made by the Contractor after ninety days from the day on which a notice of dissatisfaction and intention to commence arbitration was given, even if no attempt at amicable settlement has been made.

Procedure for Amicable Settlement in contracts

1. Amicable Settlement Committee at senior management level shall make an attempt to resolve the issues/disputes within 90 days of request by the Contractor.
2. The committee shall comprise of the following: -
 - (i) GM /K-RIDE directly in-charge of the project;
 - (ii) Concerned finance officer, and
 - (iii) GM /K-RIDE (in the same order) directly in-charge of the project of other discipline(s) in case the issues involve other discipline(s) of the engineering
3. Whenever the Contractor submits a request for amicable settlement, MD/K-RIDE should forward the same to concerned GM /K-RIDE (in the same order) directly in-charge of the project. GM /K-RIDE on receipt of the same shall issue a note to the concerned finance officer and concerned GM/K-RIDE of other discipline in case the issues involved other discipline(s) of engineering, about the request for amicable settlement to be dealt by them and fix a date in consultation with them for a hearing. The date should then be communicated to the MD/K-RIDE, GM/ /K-RIDE of other department (if the issues involved their department) and Contractor for presenting their case before the Amicable Settlement Committee.
4. This being an additional workload like arbitration, the Committee members shall be paid fee by K-RIDE at the rates payable to the Arbitrators of K-RIDE.

4.3 Arbitration

Any dispute, in respect of which amicable settlement has not been reached, arising between the Employer and the Domestic or Foreign Contractor related to any matter arising out of or connected with this contract, then the contractor shall be entitled to demand in writing that the dispute or difference be referred to arbitration.

Only such dispute(s) or difference(s) in respect of which the demand had been made for amicable settlement under GCC 4.2 but could not be settled, shall be referred to arbitration subject to the condition that cumulative amount of claims in the Contract is not exceeding 20% of the Contract price. In case the cumulative amount of claims exceeds 20% of the Contract price, arbitration clause will not be applicable.

The Arbitration proceedings shall commence from the day, a written and duly quantified demand for arbitration is received by Managing Director, Rail Infrastructure Development Company (Karnataka) Limited, Bangalore /K-RIDE).

The disputes so referred to arbitration shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996 and any statutory modification or re-enactment thereof.

Any dispute or difference or claim arising out of, or in connection with, or relating to the present contract or the breach, termination or invalidity thereof shall be referred and settled under the Arbitration Centre – Karnataka (Domestic and International) Rules 2012, by one or more arbitrators appointed in accordance with its rules.

Further, it is agreed between the Parties as under.

4.3.1 Number of Arbitrators: The arbitral tribunal shall consist of three arbitrators.

4.3.2 Procedure for Appointment of Arbitrators: The arbitrators shall be appointed as per following procedure:

- (a) The Contractor, while invoking demand for arbitration, shall submit to MD/K-RIDE, claims duly quantified along with name and contact details of his nominee arbitrator. Thereafter, the Employer will nominate his nominee arbitrator within a period of 30 days from receipt of such demand from the Contractor and will issue letter of appointment to both the arbitrators appointed by the Parties with a copy of the same given to the Contractor.
- (b) The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the Parties to reach a consensus within a period of 30 days from the appointment of the said Arbitrators, then, upon the request of either or both Parties, the Presiding Arbitrator shall be appointed by the Managing Director, Rail Infrastructure Development Company (Karnataka) Limited, Bangalore.
- (c) 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 concerned GM/K-RIDE fails to act without undue delay, the MD/K-RIDE shall appoint new arbitrator/arbitrators to act in his/their place except in case of new Presiding Arbitrator who shall be chosen following the same procedure as mentioned in para (b) above. 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).

4.3.3 Qualification and Experience of Arbitrators (to be appointed as per sub-clause 4.3.2 above): The contract being of specialized nature requiring knowledge and experience of dealing with construction contracts, the arbitrators to be appointed shall have minimum qualification and experience as under:

Arbitrator shall be;

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a working/retired officer (not below E-9 grade and above in a PSU with which K-RIDE has no business relationship) of any discipline of Engineering or Accounts/Finance department, having experience in Contract Management of construction contracts; or

a retired officer (retired not below the HAG level) of any Engineering/Accounts Services of Central Government, having experience in Contract Management of construction contracts; or a retired officer who should have retired more than 3 years previously from the date of appointment as Arbitrator (retired not below E-9 grade in K-RIDE or a PSU with which K-RIDE has a business relationship) of any Engineering discipline or Accounts department, having experience in Contract Management of construction contracts.

- 4.3.4** No person other than the persons appointed as per above procedure and having above qualification and experience shall act as Arbitrator. In case any person having the qualification and experience other than that mentioned above is nominated as arbitrator, the arbitration clause shall cease to exist and shall not be applicable.

No new claim, except as otherwise mutually agreed by the Parties, 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.

- 4.3.5** Neither Party shall be limited in the proceedings before such arbitrators to the evidence nor the arguments previously put before during amicable settlement.

- 4.3.6** The reference to arbitration may proceed, notwithstanding that the Works shall not then be or be alleged to be complete, provided always that the obligations of the Employer, the Engineer and the Contractor shall not be altered by the reason of the arbitration being conducted during the progress of the Works. Neither Party shall be entitled to suspend the Works, nor shall payment to the Contractor be withheld on account of such proceedings

- 4.3.7** 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 Employer/Engineer that the final bill is ready for signature of the Contractor(s), he/they will be deemed to have waived his/their claim(s) and the Employer shall be discharged and released of all liabilities under the contract in respect of these claims.

- 4.3.8** Arbitration proceedings shall be held at Bangalore, India or at a place where GM(CIVIL)/K-RIDE's (dealing the contract) office is located, and the language of the arbitration proceedings and that of all documents and communications between the Parties shall be in English.

- 4.3.9** The Arbitral Tribunal should record day to day proceedings. The proceedings shall normally be conducted on the basis of documents and written statements.

All arbitration awards shall be in writing and shall state item wise, the sum and detailed reasons upon which it is based.

- 4.3.10** Any ruling on award shall be made by a majority of members of Arbitral Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.

A Party may apply for correction 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 specific point of award to tribunal within 60 days of the receipt of award.

A Party may apply to Arbitral 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.

- 4.3.11** 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.
- 4.3.12** The fees and other charges of the conciliator/arbitrators shall be as per the fee structure fixed by the Employer as amended from time to time irrespective of the fact whether the Arbitrator(s) is/are appointed by the Parties or by the Court of law unless specifically directed by Hon'ble Court otherwise on the matter, and shall be shared equally by the Employer and the Contractor. However, the expenses incurred by each Party in connection with the preparation, presentation will be borne by itself.
- 4.3.13** Performance under the contract shall continue during the arbitration proceedings and payments due the Contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceeding.

4.3.14 Excepted matters:

The following are the list of excepted matters in arbitration.

- a. Assistance by Employer for the Stores to be obtained by the Contractor.
- b. Illegal Gratification.
- c. Meaning and intent of specifications and Drawings.
- d. Rates for Non-tendered items of works.
- e. Signing of "No claim Certificate"
- f. Measurement of works.
- g. Provisions of Payment of Wages Act 1936.
- h. Provisions of Contract Labour (Regulation and Abolition) Act, 1970.
- i. Provisions of Employees Compensation Act 1923.
- j. Provisions of Mines Act 1952.
- k. Right of Employer to determine the Contract
- l. Payment on determination of Contract by Employer.

5. JURISDICTION OF COURTS

The Contract Agreement shall be subject to exclusive jurisdiction of Courts as indicated in the Contract Data. . The **Jurisdiction of Courts is Bengaluru, Karnataka**

6. If K-RIDE wishes to engage third party consultants for quality control assessment, apart from the K-RIDE quality control and field tests, the Contractor should co-operate with both Quality control authorities and the third party.
7. Defect liability period will be ONE Year from the date of commercial operations of the Building/Section.

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8. Royalty Charges shall be recovered as per the prevailing rates by the Department of Mines & Geology, if not paid by the Contractor.
9. As per GO No. CD/300/ LET/ 2006: Dated 18-12-2007, 1% cess will be deducted from the bill as per labour welfare act.
10. All the works are to be carried out as per the Standard specification Issued from time to time.

K-RIDE

Special conditions of contract for Electrical portion

1. The tenderers are expected to go through the Explanatory notes for various items of work in Electrical General Services Schedule are given separately before bidding.
2. All electrical works should comply with Indian Electricity Act 2003 and Rules framed there under.
3. All electrical installations shall conform to the relevant Indian Standard and shall be carried out as per the relevant safety Code of Practices and guidance for Safety Procedures in Electrical Works as per IS:5216/Pt I & II/1982.
4. Electrical works shall be carried out by only class-1 electrical contractor licence.
5. Notwithstanding the ratings specified in the BOQ, all components proposed to be used in the installations, shall be of appropriate rating of voltage, current and frequency without any additional financial implication on KRIDE. Discrepancies, if any, in this regard, shall be brought to the notice of the Engineer by the Contractor.
6. All minor items viz. hardware items, foundation bolts, termination lugs for electrical connections etc. as required and necessary for proper working of the equipment shall be deemed to have been included in the Bill of Quantities, whether such items are specifically mentioned or not.
7. The basic quantities of components & materials required to make up a unit of work for selected items are approximate. The Contractor shall plan the work, estimate the actual quantities required and get the same approved by the Engineer before placing orders.
8. In estimating the prices for various items of work, provision for loss or wastage in transit and erection including freight, handling, taxes and duties (but excluding GST), insurance if any etc. should be taken into account and firm unit price offered for a complete unit of work to be done by the contractor.
9. The various items to be supplied/provided/erected should be as per the approved list. Items not appearing in the approved list shall be procured from good quality sources in line with best industries practices and shall be either ISI marked or conforming to latest IS (if any). **Before procurement, vendor approval shall be obtained from the Employer.**
10. **LED light fittings to be provided shall confirm to CEE/SWR specification No. SWR/LED Light fittings (Indoor/ Outdoor)/001-2016 or latest and should be with five year warranty.**
11. Good workmanship and total compliance with safety and other statutory rules and regulations, shall invariably be observed by the Contractor.
12. All approvals from the relevant and appropriate government & statutory authorities shall be the total responsibility of the Contractor unless specified otherwise.
13. All quoted rates shall cover supply of materials, handling of materials, labour required, civil works, taxes and duties, fabrication, installation, testing and commissioning, training and free maintenance till handing over to the Employer's representative.
14. If any activity of work is essential for the satisfactory completion of the work but is not mentioned specifically in the Bill of Quantities or elsewhere in the bidding documents, the same shall be deemed to be included in the scope of work and shall be executed by the contractor within the accepted cost. The work shall be handed over in a functional manner complete in all respects.
15. The inspection of items will be done at the manufacture's works/place decided by the Employer based on item, its quantity, Inspecting Authority etc.
16. No conduit shall be of size less than 20 mm.
17. Occupancy of wiring cable in conduit shall not exceed 45% of the capacity of conduit.
18. Switch boxes shall be of galvanized sheet metal of suitable sizes from approved sources:

SECTION – 5: CONDITIONS OF CONTRACT(CC) AND SPECIAL CONDITIONS OF CONTRACT (SCC)

19. Separate conduit shall be laid for each circuit/sub main/main wiring.
20. Water cooler/AC Points and other such inductive loads shall be controlled with “C” series MCBs.
21. Neutral cable shall be brought into each switch box.
22. Earth cable shall be brought into each switch box.
23. Fan point wiring shall include supply & fixing of fan box.
24. Approx.150 mm long wiring cable shall be kept loose in switch box/SDB/DB etc.
25. Conduits laid in sheds shall be clamped with the shed structure with clamps made from GI. strips of 25x1.6mm and spaced at about 1000mm interval, fixed with 8mm dia bolts with nuts.
26. Brass screw and cup washers shall be used for fixing sheets on the front of switch box.
27. All the wiring work shall be in conformity with IS732/1989 (Latest Version) CODE OF PRACTICE FOR ELECTRICAL WIRING INSTALLATIONS & IS 4648/1968 (Latest Version) Guide for Electrical Wiring in Residential Buildings.
28. The equipment which are available with ISI mark in Indian market, they shall be supplied having ISI mark only whether specifically mentioned in BOQ & its explanatory notes or not.
29. All the energy consuming equipment which are available in Indian market with energy star rating issued by BEE, shall be supplied with minimum 3 star energy rating only whether specifically mentioned in BOQ & its explanatory notes or not.
30. Equivalent LED fitting and lamp (as approved by Engineer) may be used in place of other type of lighting fixtures with lamp for better life and energy efficiency.
31. **DRAWINGS**
 - i. The contractor shall prepare drawings in Auto Cad for all LT/HT installations, indicating proposed works and shall obtain approval of Engineer prior to taking up the work. Such drawings shall be prepared in coordination with all other agencies executing works at the same site and a maximum of 10(ten) copies as are required by KRIDE with one tracing on RTF paper.
 - ii. After commissioning, these drawings shall be duly updated as per erection work at site and submitted in six copies and one tracing in RTF paper, as Completion Drawings, along with a soft copy to the Employer.
 - iii. Where the contractor proposes to use an item of equipment, other than that specified or detailed on the drawings, which requires any re- design of the structure, partitions, foundation, piping, wiring or any other part of the mechanical, electrical or architectural layouts, he shall inform the Engineer well in advance and obtain his approval. Delays resulting from such re-design shall be On Contractor’s account. He shall also submit all related information as may be required for approval of such redesign, to the Engineer.
 - iv. Where the work of the Contractor has to be executed in close proximity to or will interfere with work of other agencies, the Contractor shall work out space/time adjustments in coordination with other agencies. If the contractor installs his work before coordinating with other agencies, so as to cause any interference with their work, he shall make the necessary changes without extra cost to the owners of the installation.

SECTION – 6
CONTRACT DATA

SECTION 6: CONTRACT DATA

DELETED

K-RIDE

SECTION-7
**PARTICULAR CONDITIONS OF
CONTRACT (PCC)**

PARTICULAR CONDITIONS OF CONTRACT (PCC)

The following Particular Conditions of Contract (PCC) shall supplement the Conditions of Contract (CC)/GCC/SCC/Contract Data. Whenever there is a conflict, the provisions herein shall prevail over those in the CC/GCC/SCC/Contract Data. The conditions indicated in PCC will be on priority as compared to the conditions of CC/GCC/SCC/Contract Data.

CC/SCC REFERENCE CLAUSE	DESCRIPTION
Clause-1/CC Definitions	<p>The following paras are added to the Existing CC Clauses.</p> <p>“Contract Agreement” The Parties shall enter into a Contract Agreement within 28 days after the Contractor receives the Letter of Acceptance, unless they agree otherwise.</p> <p>“Letter of Acceptance” means the letter of formal acceptance, signed by the Employer, of the Letter of Bid, including any annexed memoranda comprising agreements between and signed by both Parties. If there is no such letter of acceptance, the expression “Letter of Acceptance” means the Contract Agreement and the date of issuing or receiving the Letter of Acceptance means the date of signing the Contract Agreement.</p> <p>“Letter of Bid” means the document entitled letter of bid, which was completed by the Contractor and includes the signed offer to the Employer for the Works.</p> <p>“Drawings” means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract.</p> <p>“Schedules” means the document(s) entitled schedules, completed by the Contractor and submitted with the Letter of Bid, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.</p> <p>“Bid/Tender” means the Letter of Technical Bid and Letter of Price Bid and all other documents which the Contractor submitted with the Letter of Technical Bid and Letter of Price Bid, as included in the Contract.</p> <p>“Employer’s Requirements” means the document entitled ‘Employer’s Requirements’ as part of Works Requirements and as included in the Contract, and any additions and modifications to such document in accordance with the Contract. Such document specifies the purpose, scope, and/or design and/or other technical criteria, for the works.</p> <p>Parties and Persons</p> <p>“Party” means the Employer or the Contractor, as the context requires.</p> <p>“Engineer” means the person nominated by the Employer to act as the Engineer for the purposes of the Contract and named in the Contract Data, or other person appointed from time to time by the Employer and notified to the Contractor under New-Clause 3.4 [Replacement of the Engineer]. The person nominated to act as an engineer may be an employee of Rail Infrastructure Development Company (Karnataka) Ltd (K-RIDE) or an employee of a Project Management Consultancy firm engaged by K-RIDE for project management as per the discretion of the Employer.</p> <p>“Contractor’s Representative” means the person named by the Contractor in the Contract or appointed from time to time by the Contractor under New-Clause 4.3 [Contractor’s Representative], who acts on behalf of the Contractor.</p>

“Employer’s Representative” means the person named by the Employer in the Contract or appointed from time to time by the Employer who acts on behalf of the Employer.

“Employer’s Personnel” means the Engineer, the assistants referred to in New-Clause 3.2 [Delegation by the Engineer] and all other staff, labour and other employees of the Engineer and of the Employer; and any other personnel notified to the Contractor, by the Employer or the Engineer, as Employer’s Personnel.

“Contractor’s Personnel” means the Contractor’s Representative and all personnel whom the Contractor utilises on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.

“Base Date” means the date 28 days prior to the deadline for submission of bids.

“Tests on Completion” means the tests which are specified in the Contract or agreed by both Parties or instructed as a Variation, and which are carried out under Clause 30 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Employer.

“Day” means any (working or non-working) calendar day from 00:00 hrs. to 24:00 hrs.

“Time Periods” Any reference to time period commencing “from” the specified day or date “till” or “until” a specified day shall include both such days.

Any reference to **“Time”** shall be according to Indian Standard Time (IST).

Money and Payments

“Accepted Contract Amount” means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects. In the Letter of Acceptance, the Accepted Contract Amount shall have two components i.e. (i) the base amount excluding GST (ii) GST component (calculated at the rate for works contract service as per GST Laws).

“Cost” means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

“Final Statement” means the statement defined in Sub-Clause 37.12 [Application for Final Payment Certificate].

“Foreign Currency” means a currency in which part (or all) of the Contract Price is payable, but not the Local Currency.

“Local Currency” means the currency in Indian Rupees.

“Statement” means a statement submitted by the Contractor as part of an application, under Clause 37 and 40 [Contract Price and Payment], for a payment certificate

Works and Goods

“Contractor’s Equipment” means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor’s Equipment excludes Temporary Works, Employer’s Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.

	<p>“Goods” means Contractor’s Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.</p> <p>“Permanent Works” means the permanent works to be executed by the Contractor under the Contract.</p> <p>“Section” means a part of the Works specified in the Contract Data as a Section (if any).</p> <p>“Temporary Works” means all temporary works of every kind (other than Contractor’s Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.</p> <p>Other Definitions</p> <p>“Contractor’s Documents” means the calculations, computer programs and other software, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.</p> <p>“Country” means India, the country in which the Site (or most of it) is located, where the Permanent Works are to be executed.</p> <p>“Employer’s Equipment” means the apparatus, machinery and vehicles (if any) made available by the Employer for the use of the Contractor in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Employer.</p> <p>“Laws” means all national (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority.</p> <p>“Site” means the places where the Permanent Works are to be executed and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.</p> <p>“Unforeseeable” means not reasonably foreseeable and against which adequate preventive precautions could not reasonably be taken by an experienced contractor by the date for submission of the Bid.</p> <p>“Railway” means a railway, or any portion of a railway for public carriage of passengers and goods as defined in the Railways ACT 1989. Any reference to railway means the Indian Railways and the respective Zonal Railway</p>
<p>Clause-1/CC</p>	<p>The following paras are added to the Existing CC Clauses.</p> <p>Employers Name and Address: K-RIDE (Rail Infrastructure Development Company (Karnataka) Limited) (A Joint venture of GoK and MoR) #8 , 1st Floor, Samparka Soudha, Dr. Rajkumar Road, Opposite Orion Mall Rajaji Nagar 1st Block Bangalore – 560010 Tele: +91 6364890811, 6364890808</p> <p>Employers Representative and address: General Manager/Civil /Projects / K-RIDE, K-RIDE (Rail Infrastructure Development Company (Karnataka) Limited) #8, 1st Floor, Samparka Soudha,</p>

	<p>Dr. Rajkumar Road, Opposite Orion Mall Rajaji Nagar 1st Block Bangalore – 560010</p> <p>Tele: +91 6364890811, 6364890808</p> <p>E – Mail: praveen.kumar.kride@ka.gov.in</p>
Clause -2.1/CC Interpretation.	<p>The following paras are added to the Existing CC Clauses.</p> <p>(a) provisions including the word “agree,” “agreed” or “agreement” require the agreement to be recorded in writing;</p> <p>(b) “written” or “in writing” means hand-written, type-written, printed or electronically made, and resulting in a permanent record; and</p> <p>(c) the word “tender” is synonymous with “bid”, and “tenderer” with “bidder” and the words “tender documents” with “bidding documents”</p>
Clause-2.2/CC. Priority of Documents	<p>Replace the existing sub clause 2.2 of CC</p> <p>The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:</p> <ol style="list-style-type: none"> 1. Contract Agreement (if any), 2. Letter of Acceptance, notice to proceed to works, 3. Letter of bid/Contractor tender, 4. Addendum/Corrigendum including Reply to pre bid queries, 5. Schedules (including Priced Bill of Quantities), 6. Particular Conditions of Contract, 7. Conditions of Contract/SCC and Contract Data 8. Works/Employer’s Requirements, 9. Technical Specifications, 10. Drawings, 11. any other documents forming part of the Contract. <p>If an ambiguity or discrepancy is found in the documents, the Engineer shall issue necessary clarification or instruction.</p>
Clause-6.1/CC, Communications	<p>The following para is added to the existing CC clause:</p> <p>Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be: in writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Contract Data; and delivered, sent or transmitted to the address for the recipient’s communications as stated in the Contract Data.</p>
Clause- 7/CC	<p>The following paras are added to the Existing CC Clauses.</p> <p>7.1 Definition of nominated Subcontractor</p> <p>In the Contract, “nominated Subcontractor” means a Subcontractor:</p>

- (a) who is stated in the Contract as being a nominated Subcontractor, or
- (b) whom the Engineer, under Clause 7/CC [Sub-contracting], instructs the Contractor to employ as a Subcontractor.

Sub-contractors

The Contractor shall not subcontract the whole of the Works. The Contractor shall be responsible for the acts or defaults of any Subcontractor, his agents or employees, as if they were the acts or defaults of the Contractor.

Unless otherwise stated in the Conditions of Contract:

- (a) The Contractor shall not be required to obtain consent to suppliers solely of Materials, or to a subcontract for which the Subcontractor is named in the Contract or as specifically provided in the Contract data or value of any sub-contract for Works, provided that such works are not for the key activities.
- (b) The prior consent of the Engineer shall be obtained to other proposed Subcontractors and/or suppliers. While submitting his proposal in this regard, the Contractor shall ensure that;
 - (i) Total value of Works requiring such consent for subcontracting shall not be more than 50% (fifty per cent) of the Contract Price;
 - (ii) The proposed subcontractor must have executed works of 40% of value of the proposed subcontract through a single contract during last seven years; and
 - (iii) No banning/blacklisting/declaration as poor performer by K-RIDE is in force on the proposed subcontractor (on the date of grant of consent by the Engineer);
 - (iv) No contract of the proposed subcontractor has been terminated by K-RIDE during the last two years (to be reckoned from the date of grant of consent by the Engineer);
 - (v) The Contractor shall submit the proposal for subcontracting with the name, particulars and the relevant experience of the proposed subcontractor.
- (c) The Contractor shall give the Engineer not less than 28 days' notice of the intended date of the commencement of each Subcontractor's work, and of the commencement of such work on the Site;
- (d) Each subcontract shall include provisions which would entitle the Employer to require the subcontract to be assigned to the Employer under New-Clause 4.23/PCC [Assignment of Benefit of Subcontract] (if or when applicable) or in the event of termination under Sub-Clause 49.7/PCC. [Termination by Employer]; and
- (e) On getting consent from the Engineer, the Contractor shall provide to the Engineer copy of the agreement entered with such subcontractor.

The Contractor shall ensure that the requirements imposed on the Contractor by New-Clause 1.6/PCC [Confidential Details] apply equally to each Subcontractor.

Where practicable, the Contractor shall give fair and reasonable opportunity for contractors from the Country to be appointed as Subcontractors.

The Contractor shall endeavor to resolve all matters and payments amicably and speedily with the sub-contractors.

The Contractor shall indemnify and hold the Employer harmless against and from any claim of subcontractors or suppliers of the materials.

The Contractor shall release payment to the Sub-contractors/Suppliers promptly and shall endeavor to resolve all issues amicably and speedily with the Sub-contractors/Suppliers, so that the execution of work is not affected in any manner whatsoever.

In case a Sub-contractor/Supplier represents to the Engineer in writing with supporting documents, stating that he has not received payment due as per the agreement/work or purchase order for the works executed by such Sub-contractor or supplies made by such Supplier, which have been covered in previous Payment Certificates and the Engineer finds such representation having merit, the Engineer, before issuing next Payment Certificate, may forward a copy of the representation to the Contractor requesting the Contractor to supply reasonable evidence that the amount stated to be outstanding by the Sub-contractor/Supplier for the works executed or supplies made, which have been covered in previous Payment Certificates has been paid and if not, why the same is not payable. The Engineer may recommend to make payment to the Sub-contractor/Supplier unless the Contractor submits reasonable evidence to the Engineer:

- (i) that the amount claimed has been paid, or
- (ii) satisfying the Engineer in writing that the Contractor is entitled to withhold or that the amount is not payable.

On the recommendation of the Engineer, the Employer may (at his sole discretion) directly pay to the Sub-contractor/Supplier the amount due for and on behalf of the Contractor, part or all of such amounts previously certified (less applicable deductions) as are found due to the Sub-contractor/Supplier by the Engineer. The Employer shall adjust the amount paid directly to the Sub-contractor/Supplier from any amount due by it to the Contractor. The Contractor shall repay the amount, in case no amount is found due by the Employer to the Contractor.

That the payment by Employer, on behalf of the Contractor to its Sub-contractor/Supplier, shall not alter any terms of agreement between the Employer and the Contractor and nor the same shall result in any privity of contract between the Employer and the Sub-contractor/Supplier.

Assignment of Contractor's and Sub-contractor's Obligations:

The Contractor shall not assign a right or benefit under the Contract without first obtaining Employer's prior written consent, otherwise than by:

- A. a charge in favor of the Contractor's bankers of any money due or to become due under the Contract, or
- B. assignment to the Contractor's insurers (in cases where the insurers have discharged the Contractor's loss or liability) of the Contractor's right to obtain relief against any other party liable.

If a Subcontractor's obligations extend beyond the expiry date of Defects Liability Period, then the Contractor shall assign the benefits of such obligations to the Employer.

In the event that a sub-contractor of any tier provides to the Contractor or any other sub-contractor a warranty in respect of Plant, Materials or services supplied in connection with the Works, or undertakes a continuing obligation of any nature whatsoever in relation to such Plant, Materials or services (including without limitation an obligation to maintain stocks of spare parts) extending for a period exceeding that of the Defects Liability Period or where there is more than one Defects Liability Period exceeding that of the latest Defects Liability Period, and if the Engineer so directs in writing within 21 days of the expiry of the Defects Liability Period or the

latest Defects Liability Period (as the case may be), the Contractor shall immediately assign or obtain the assignment of the benefit of such warranty or obligation to the Employer or at the direction of the Employer, to any third party.

Specialist Subcontracting

If an Applicant intends to subcontract any highly specialized elements of the Works to specialist subcontractors, such elements and the proposed subcontractors shall be clearly identified, and the experience and capacity of the subcontractors shall be described in the relevant Information Forms.

Acceptable Substitutes

With reference to subcontracting & specialist subcontracting, the Employer may require Applicants to provide more information about their proposals. If any proposed subcontractor is found ineligible or unsuitable to carry out an assigned task, the Employer may request the Applicant to propose an acceptable substitute, and may conditionally pre-qualify the Applicant accordingly, before issuing an invitation to tender.

7.2 Objection to Nomination

The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Engineer as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Employer agrees to indemnify the Contractor against and from the consequences of the matter:

- (a) there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;
- (b) the subcontract does not specify that the nominated Subcontractor shall indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or
- (c) the subcontract does not specify that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:
 - (i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge his obligations and liabilities under the Contract, and
 - (ii) Indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfil these liabilities.

7.3 Payments to nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts which the Engineer certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-Clause 34.5/PCC [Provisional Sums], except as stated in Sub-Clause 7.4/PCC [Evidence of Payments].

7.4 Evidence of Payments

Before issuing a Payment, Certificate which includes an amount payable to a nominated Subcontractor, the Engineer may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received (Within 7 days of receipt of previous payment by

	<p>the contractor) all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor, submits this reasonable evidence to the Engineer, or</p> <ul style="list-style-type: none"> (i) satisfies the Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and (ii) submits to the Engineer reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement, <p>then the Employer may (at his sole discretion) pay, direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Employer, the amount which the nominated Subcontractor was directly paid by the Employer.</p> <p>7.5 Assignment of Benefit of Subcontract</p> <p>If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Employer, then the Contractor shall do so. Unless otherwise stated in the assignment, the Contractor shall have no liability to the Employer for the work carried out by the Subcontractor after the assignment takes effect.</p>
<p>Clause11/CC</p>	<p>The following paras are added to the Existing CC Clauses.</p> <p>Risk and Responsibility</p> <p>11.1 Indemnities</p> <p>The Contractor shall indemnify and hold harmless the Employer, the Employer's Personnel, Employers Representative and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:</p> <ul style="list-style-type: none"> (a) bodily injury, sickness, disease or death, of any person including railway user whatsoever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and (b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel,, their respective agents, or anyone directly or indirectly employed by any of them. <p>The Employer shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in sub-paragraphs (d)(i), (ii) and (iii) of Sub-Clause 13.8/PCC [Insurance Against Injury to Persons and Damage to Property].</p>

11.2 Contractor's Care of the Works

The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 46.1/PCC [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Employer. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Employer.

After responsibility has accordingly passed to the Employer, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractor is responsible for their care, from any cause not listed in Sub-Clause 11.3/PCC [Employer's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.

The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

11.3 Employer's Risks

Clause 11 of CC and clause 38 of CC are substituted with clause 11.3 of PCC as below:

The risks referred to herein below, in so far as they directly affect the execution of the works in the Country, are:

- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, within the Country,
- (c) riot, commotion or disorder within the Country by persons other than the Contractor's Personnel,
- (d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, within the Country, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity,
- (e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
- (f) use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract, and
- (g) design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible.

11.4 Consequences of Employer's Risks:

If and to the extent that any of the risks listed in Sub-Clause 11.3/PCC above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly

give notice to the Engineer and shall rectify this loss or damage to the extent required by the Engineer.

If the Contractor suffers delay and/or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause [Extension of Time for Completion], and
- (b) In the case of sub-paragraphs (f) and (g) of Sub-Clause 11.3/PCC [Employer's Risks], Cost shall be payable.

After receiving this further notice, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine these matters.

11.5 Intellectual and Industrial Property Rights

In this Sub-Clause, "infringement" means an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and "claim" means a claim (or proceedings pursuing a claim) alleging an infringement.

Whenever a Party does not give notice to the other Party of any claim within 28 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

The Employer shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

- (a) an unavoidable result of the Contractor's compliance with the Contract, or
- (b) a result of any Works being used by the Employer:
 - (i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
 - (ii) in conjunction with anything not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

	<p>11.6 Limitation of Liability</p> <p>Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract, provided that this exclusion shall not apply to any obligation of the Contractor to pay Delay Damages to the Employer under Sub-Clause 26.6/PCC [Delay Damages].</p> <p>The total liability of the Contractor to the Employer, under or in connection with the Contract other than under New-Clause 4.37/PCC [Electricity, Water and Gas], New Clause 4.38/PCC [Employer's Equipment and Free-Issue Material], Sub-Clause 11.1/PCC [Indemnities] and Sub-Clause 11.5/PCC [Intellectual and Industrial Property Rights], shall not exceed the sum as specified in the Contract Data or if nothing is specified in the Contract Data, the accepted Contract Amount.</p> <p>This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.</p> <p>Maximum total liability of Contractor is accepted contract amount.</p> <p>11.7 Use of Employer's Accommodation/ Facilities</p> <p>The Contractor shall take full responsibility for the care of the Employer provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).</p> <p>If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Employer is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.</p>
<p>Clause 13/CC</p>	<p>The following paras are added to the Existing CC Clauses.</p> <p>INSURANCE</p> <p>13.6 General Requirements for Insurances</p> <p>In this Clause, "insuring Party" means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.</p> <p>Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Employer. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.</p> <p>If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Employer shall act for Employer's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any</p>

other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.

Periods for submission of insurance:

- a) evidence of insurance: Before start date of work.
- b) relevant policies: Before start date of work.

Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

The relevant insuring Party shall, within the respective periods stated in the Contract Data (calculated from the Commencement Date), submit to the other Party:

- (a) evidence that the insurances described in this Clause have been effected, and
- (b) copies of the policies for the insurances described in Sub-Clause 13.7/PCC [Insurance for Works and Contractor's Equipment] and Sub-Clause 13.8/PCC [Insurance against Injury to Persons and Damage to Property].
- (c) If the contractor fails to submit evidence and copies of the policies as mentioned in (a) & (b) above to prove that the policies have been obtained within the period specified in the contract data, and submits the same later on and from the submitted evidence it is found that the policies have not been obtained within the period specified, the Employer shall recover double the cost of the premium for the period the policies have been delayed.

When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.

Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.

Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or attempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.

If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contract, or fails to provide satisfactory evidence and copies of policies in accordance with this Sub-Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay double the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.

Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Employer, under the other terms of the Contract or otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Employer in accordance with these obligations, liabilities or responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves

the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.

Payments by one Party to the other Party shall be subject to New-Clause 2.4/PCC [Employer's Claims] or Sub-Clause 4.1/SCC [Contractor's Claims], as applicable.

The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 13/CC/PCC with insurers from any eligible source country.

13.7 Insurance for Works and Contractor's Equipment

The Contractor shall insure the Works, Plant, Materials, including those issued by the Employer and Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit, subject to a maximum value indicated in Contract Data. This insurance shall be effective from the date by which the evidence is to be submitted under sub-paragraph (a) of Sub-Clause 13.6/PCC [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.

The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under New-Clause 6/PCC [Defects Liability]).

The insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

Unless otherwise stated in the Conditions of Contract/SCC, insurances under this Sub-Clause:

- (a) shall be effected and maintained by the Contractor as insuring Party,
- (b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated between the Parties for the sole purpose of rectifying the loss or damage,
- (c) shall cover all loss and damage from any cause not listed in Sub-Clause 11.3/PCC [Employer's Risks],
- (d) shall also cover loss or damage to a part of the Works which is attributable to the use or occupation by the Employer of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h) of Sub-Clause 11.3/PCC [Employer's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated in the Contract Data (if an amount is not so stated, this sub-paragraph (d) shall not apply), and
- (e) may however exclude loss of, damage to, and reinstatement of:
 - i) part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or

damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),

- ii) a part of the Works which is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship,
- iii) a part of the Works which has been taken over by the Employer, except to the extent that the Contractor is liable for the loss or damage, and
- iv) [DELETED]

If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Employer, with supporting particulars. The Employer shall then (i) be entitled subject to New-Clause 2.4/PCC [Employer's Claims] to payment of an amount equivalent to such commercially reasonable terms as the Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 13.6/PCC [General Requirements for Insurances].

13.8 Insurance against injury to Persons and Damage to Property

The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 13.7/PCC [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 13.9/PCC [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

This insurance shall be for a limit per occurrence of not less than the amount stated in the Contract Data, with no limit on the number of occurrences. If an amount is not stated in the Contract Data, this Sub-Clause shall not apply.

Unless otherwise stated in the Special Conditions of Contract, the insurances specified in this Sub-Clause:

- (a) shall be effected and maintained by the Contractor as insuring Party,
- (b) shall be in the joint names of the Parties,
- (c) shall be extended to cover liability for all loss and damage to the Employer's property including Railways Property (except things insured under Sub-Clause 13.7/PCC) arising out of the Contractor's performance of the Contract, and
- (d) may however exclude liability to the extent that it arises from:
 - (i) the Employer's right to have the Permanent Works executed on, over, under, in or through any land, and to occupy this land for the Permanent Works,
 - (ii) damage which is an unavoidable result of the Contractor's obligations to execute the Works and remedy any defects, and
 - (iii) a cause listed in Sub-Clause 11.3/PCC [Employer's Risks], except to the extent that cover is available at commercially reasonable terms.

13.9 Insurance for Contractor's Personnel

The Contractor shall abide by the provisions of ESIC Act, 1948 (extended from time to time) to take care of insurance against liability for claims, damages, losses and expenses

	<p>(including legal fees and expenses) arising from injury, sickness or disease. In addition, the contractor shall also maintain insurance against liability for claim of death of any person employed by the Contractor or any other of the Contractor's Personnel.</p> <p>The Employer and the Engineer shall also be indemnified under the policy of insurance, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer's Personnel.</p> <p>The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.</p> <p>Maximum number of deductibles for insurance of Employer's risks: Nil</p>
<p>Clause- 22/CC. Right of Access to the Site</p>	<p>The following para is added to the existing CC clause:</p> <p>The Employer shall give the Contractor right of access to, and possession of, all parts of the Site within the time (or times) stated in the Contract Data. The right and possession may not be exclusive to the Contractor. If, under the Contract, the Employer is required to give (to the Contractor) possession of any foundation, structure, plant or means of access, the Employer shall do so in the time and manner stated in the Specification. However, the Employer may withhold any such right or possession until the Performance Security has been received.</p> <p>If no such time is stated in the Contract Data, the Employer shall give the Contractor right of access to, and possession of, the Site within such times as may be required to enable the Contractor to proceed in accordance with the programme submitted under Sub-Clause 25.3/PCC [Programme].</p> <p>If the Contractor suffers delay as a result of a failure by the Employer to give any such right or possession within such time, the Contractor shall give notice to the Engineer and shall be entitled to:</p> <p>(a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 26.5/PCC [Extension of Time for Completion], and</p> <p>After receiving this notice, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine these matters.</p> <p>However, if and to the extent that the Employer's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time or new rates.</p> <p>Right of access to the work site will be provided to the successful Contractor. A minimum corridor of 9m will be available. The Contractor to note this while making Launching plans. The Contractor shall prepare, at his cost, approach roads to the site of work and this cost will not be reimbursed by the Employer. The Employer reserves the right to make use of these service roads for themselves or other Contractors working on the project, as and when necessary, without any payment to the Contractor. The barricading to the extent feasible subject to a maximum of 9m width (LHS+RHS) shall be permitted for carrying out the works and suitable barricading width for off-road structures in stages as per the approved sequence of construction. The employer shall grant the contractor right of access to, and/ or possession of the site progressively for the completion of works. The contractor</p>

	will draw/ modify the schedule for completion of work according to progressive possession/ right of such sites.
Clause 25 of CC	<p>The following paras are added to the Existing CC Clauses.</p> <p>25.3 Programme</p> <p>The Contractor shall submit a detailed time programme to the Engineer within 28 days after receiving the notice under Sub-Clause 26.3/PCC [Commencement of Works]. The program shall include the physical and Financial Progress vis-à-vis program and forecast cash flow as mutually agreed. The program must identify the milestones, interface requirements and program reporting elements. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations. Each programme shall include:</p> <ul style="list-style-type: none"> (a) the order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing, (b) each of these stages for work by each nominated Subcontractor (as defined in Clause 7/PCC [Nominated Subcontractors]), (c) the sequence and timing of inspections and tests specified in the Contract, and (d) a supporting report which includes: <ul style="list-style-type: none"> (i) a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and (ii) details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage. <p>Unless the Engineer, within 21 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Employer's Personnel shall be entitled to rely upon the programme when planning their activities.</p> <p>The Contractor shall promptly give notice to the Engineer of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works. The Engineer may require the Contractor to submit an estimate of the anticipated effect of the future event or circumstances, and/or a proposal under Sub-Clause 34.3/PCC [Variation Procedure].</p> <p>If, at any time, the Engineer gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Engineer within 15 days in accordance with this Sub-Clause.</p>
Clause 26 of CC	<p>The following paras are added to the Existing CC Clauses.</p> <p>26.3 Commencement of Works</p> <p>The Engineer shall give the Contractor not less than 7 days' notice of the Commencement of work. Unless otherwise stated in the Special Conditions of Contract, the Commencement</p>

of work shall be within the number of days after the Contractor receives the Letter of Acceptance as specified in Contract Data.

The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date, and shall then proceed with the Works with due expedition and without delay.

26.4 Time for Completion

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:

- (a) achieving the passing of the Tests on Completion, and
- (b) completing all work which is stated in the Contract as being required for whole of the Works or Section(s) to be considered to be completed for the purposes of taking-over under Sub-Clause 46.1/PCC [Taking Over of the Works and Sections].

26.5 Extension of Time for Completion

The Contractor shall be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 46.1/PCC [Taking-Over of the Works and Sections] is or will be delayed by any of the following causes:

- a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 34.3/PCC [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,
- b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,
- c) exceptionally adverse climatic conditions,
- d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or
- e) any delay, impediment or prevention caused by or attributable to the Employer, the Employer's Personnel, or the Employer's other contractors.

If the Contractor considers himself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Engineer in accordance with Sub-Clause 4.1/SCC [Contractor's Claims]. When determining each extension of time under Sub-Clause 4.1/SCC the Engineer shall review previous determinations and may increase, but shall not decrease, the total extension of time.

26.6 Delays Caused by Authorities

If the following conditions apply, namely:

- (a) the Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities in the Country,
- (b) these authorities delay or disrupt the Contractor's work, and
- (c) the delay or disruption was Unforeseeable,

then this delay or disruption will be considered as a cause of delay under sub-paragraph (b) of Sub-Clause 26.5/PCC [Extension of Time for Completion].

26.7 Rate of Progress

If, at any time:

- (a) actual progress is too slow to complete within the Time for Completion, and/or
- (b) progress has fallen (or will fall) behind the current programme under Sub-Clause 25.3/PCC [Programme],

other than as a result of a cause listed in Sub-Clause 26.5/PCC [Extension of Time for Completion], then the Engineer may instruct the Contractor to submit, under Sub-Clause 25.3/PCC [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.

Unless the Engineer notifies otherwise, the Contractor shall adopt these revised methods, which may require increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods, at the risk and cost of the Contractor. If these revised methods cause the Employer to incur additional costs, the Contractor shall subject to New-Clause 2.4/PCC [Employer's Claims] pay these costs to the Employer, in addition to delay damages (if any) under Sub-Clause 26.8/PCC below

26.8 Extension of Time for Completion with Delay Damages

If the Contractor fails to comply with Sub-Clause 26.4/PCC [Time for Completion for entire work or for specified section wise completion period], and he is not entitled to an extension of time under sub clause 26.5/PCC then the employer may grant extension of time with delay damage in such case, the Contractor shall subject to New-Clause 2.4/PCC [Employer's Claims] pay delay damages to the Employer for this default. These delay damages shall be the sum stated in the Contract Data, which shall be paid for every day which shall elapse between the relevant Time for Completion and the date stated in the Taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Contract Data.

Further, if the contractor fails to achieve physical/financial targets as per the agreed programme for a consecutive period of 3 months without any valid reasons, other than attributable to the contractor, a provisional recovery of delay damages shall be made from the next interim payment certificate @ 1/10th of the sum of delay damages stated in the contract data, for the entire period of 3 months. Such recovery shall continue from the further interim payment certificates till the contractor is able to make good the shortfall and achieve the cumulative targets as per agreed programme. On achieving the cumulative progress targets as per agreed programme, the entire amount recovered till that month, shall be refunded to the contractor in the next interim payment certificate. In case the contractor is unable to make good the shortfall and achieve the cumulative targets resulting in delay in completion of the project, then the provisional recoveries made shall be adjusted against the delay damages to be finally imposed on the contractor.

These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 49.7/PCC [Termination by Employer] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

26.9 Suspension of Work

The Engineer may at any time instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.

The Engineer may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 26.10, 26.11 and 26.12 of PCC shall not apply.

26.10 Consequences of Suspension

If the Contractor suffers delay and/or incurs Cost from complying with the Engineer's instructions under Sub-Clause 26.9/PCC [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 26.5/PCC [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine these matters.

The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub-Clause 26.9/PCC [Suspension of Work].

If suspension is ordered by the Engineer for reasons other than those mentioned in Sub Clause 26.9/PCC then the Contractor's entitlement is in the table below. However, Engineer's decision is final and binding in regard to defining suspension and specifying the suspension period. Contractor has no right to claim or appeal against this decision

Sr. No	Suspension Period	Extension of Time	Compensation for the suspension period	Remarks
1	Up to 60 days	NO	NO	Engineer may give extension of time in exceptional circumstances
2	60-90 days	YES	NO	Extension of time as considered proper by the Engineer

	3	Above 90 days	YES	<p>A. As per Daily rate of wages for idle labour/employees</p> <p>B. 70% of the rate for hire charges for idle plant and machinery (excluding cost of fuel and lubricants)</p> <p>C. 15% above all these items to cover overhead costs</p>	Compensation as assessed by the Engineer on submission of documentary proof by the Contractor to Engineer's satisfaction
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26.11 Payment for Plant and Materials in Event of Suspension

The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/or Materials, if:

- (a) the work on Plant or delivery of Plant and/or Materials has been suspended for more than 28 days,
- (b) the Contractor has marked the Plant and/or Materials as the Employer's property in accordance with the Engineer's instructions, and
- (c) Such materials or plant is received at site

26.12 Prolonged Suspension

If the suspension under Sub-Clause 26.9/PCC [Suspension of Work] has continued for more than 84 days, the Contractor may request the Engineer's permission to proceed. If the Engineer does not give permission within 28 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 34/PCC [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice.

26.13 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Engineer shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension

26.14 Bonus for early completion:

If the Contractor achieves completion of the whole of the Works or any section(s) prior to the intended Completion Date prescribed in Contract data (Extension of time pursuant to Clause 26.5/PCC or any other clause of these conditions will not be considered), the Employer shall pay to the Contractor a sum stated in the Contract data as bonus for early completion, for every calendar month which shall elapse between the date of completion of

	<p>all items of works as stipulated in the contract, including variations ordered by the Engineer and the time prescribed in Clause 26.4.</p> <p>For the purpose of calculating bonus payments, the time given in the Bid for completion of the whole works or any section(s) is fixed and unless otherwise agreed, no adjustment of the time by reasons of granting an extension of time pursuant to clause 26.5/PCC or any other clause of these conditions will be allowed. Any period falling short of completed month shall be ignored for the purpose of computing the period relevant for the payment of bonus.</p> <p>Amount of bonus for early completion 1% of initial Contract Price per month (part of the month to be excluded) for substantial completion of work.</p> <p>Maximum limit of bonus 3% of Contract Price.</p> <p>(For earlier completion of the work as a whole from the stipulated original date of completion, a bonus payment of as above shall be paid to the contractor. The engineer's decision is final and binding on the contractor so far as bonus payment to the contractor is concerned. if bonus payment is made, earlier penalties levied for delay caused to various intermediate Key Dates will be refunded.)</p>
<p>Clause-30/CC</p>	<p>The following paras are added to the Existing CC Clauses.</p> <p>30.2 Contractor's Obligations</p> <p>The Contractor shall carry out the Tests on Completion in accordance with this Clause and New-Clause 5.4/PCC [Testing], after providing the documents in accordance with subparagraph (d) of New--Clause 4.1/PCC [Contractor's General Obligations].</p> <p>The Contractor shall give to the Engineer not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Engineer shall instruct.</p> <p>In considering the results of the Tests on Completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the results of these Tests to the Engineer.</p> <p><u>Contractor's Obligations:</u> The Contractor shall carry out the Tests on Completion at his own cost in accordance with the Contract and shall provide the documents in accordance with New-Clauses 3.1/PCC and the Contractor shall give, to the Engineer, 21days' notice of the date after which the Contractor will be ready to carry out the Tests on Completion. Unless otherwise agreed, such Tests shall be carried out within 14 days after this date, on such day or days as the Engineer shall instruct.</p> <p>Unless otherwise stated in Conditions of Contract/SCC, the Tests on Completion shall be carried out in the following sequence</p> <p>(a) pre-commissioning test, which shall include appropriate instructions and ("dry" or "cold") functional tests to demonstrate that each item of the Plant and Work can safely undertake the next stage</p>

(b) Commissioning Test shall include the specified operational tests to demonstrate Works or Sections can be operated safely and as specified under all available operating condition

(c) trial operation which shall demonstrate that the Works or Section perform reliably and in accordance with the Contract

The Contractor at his own cost shall arrange all tools, equipment, gadgets, facilities or as deemed necessary by the Engineer for such tests, in considering the results of the Tests on Completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed the Tests on Completion described in sub-paragraphs (a) (b) or (c), the Contractor shall provide the Engineer and the Employer with a certified report of the results of all such Tests

30.3 Delayed Tests

If the Tests on Completion are being unduly delayed by the Employer, New-Clause 5.4/PCC [Testing] (fifth paragraph) and/or Sub-Clause 46.3/PCC [Interference with Tests on Completion] shall be applicable.

If the Tests on Completion are being unduly delayed by the Contractor, the Engineer may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Tests on such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

If the Contractor fails to carry out the Tests on Completion within the period of 21 days, the Employer's Personnel may proceed with the Tests at the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

30.4 Retesting

If the Works, or a Section, fail to pass the Tests on Completion, New-Clause 5.5/PCC [Rejection] shall apply, and the Engineer or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions

30.5 Failure to Pass Tests on Completion

If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 30.4/PCC [Retesting], the Engineer shall be entitled to:

- (a) order further repetition of Tests on Completion under Sub-Clause 30.4;
- (b) if the failure deprives the Employer of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the Employer shall have the same remedies as are provided in sub-paragraph (c) of New-Clause 6.4/PCC [Failure to Remedy Defects]; or
- (c) issue a Taking-Over Certificate, if the Employer so requests.

In the event of sub-paragraph (c), the Contractor shall proceed in accordance with all other obligations under the Contract, and the Contract Price shall be reduced by such amount as shall be appropriate to cover the reduced value to the Employer as a result of this failure. Unless the relevant reduction for this failure is stated (or its method of calculation is defined) in the Contract, the Employer may require the reduction to be (i) agreed by both Parties (in full satisfaction of this failure only) and paid before this Taking-Over Certificate is issued, or

	<p>(ii) determined and paid under New-Clause 2.4 [Employer's Claims] and New-Clause 3.5 [Determinations].</p> <p>30.6 Contractor's obligations</p> <p>Notwithstanding the provisions of New-clauses 4.1/PCC, clause 30.2 to 30.5/PCC the provisions in subsequent sub-clauses shall apply for works of Permanent Way, signaling and telecommunication and railway electrification excluding General Electrical Services.</p> <p>(a) The Contractor shall be responsible for the execution of temporary and/or permanent works which may require the prior sanction/approval of Commissioner of Railway Safety (CRS) in accordance with extant rules for "The Railways opening for Public Carriage of Passengers" was amended from time to time. And applicable as and when the works are undertaken. The Contractor shall initiate the process for approval at least 63 (sixty-three) days prior to undertaking such works which require the approval of Commissioner of Railway Safety (CRS) and furnish draft documentation to the Engineer.</p> <p>(b) The Contractor shall ensure that existing services and operations for public carriage of passengers or goods, are not affected except those, which are essentially required to be regulated for execution of works. Such items of works shall be planned and coordinated through the Engineer.</p> <p>(i) Prior to the commencement of commercial operations of passenger traffic, the Employer may permit freight train operations to Railway after certification by the authorized person of Zonal Railway. The Contractor shall be responsible for maintaining the facilities ensuring safety of operations as per specifications.</p>
<p>Clause 34/CC</p>	<p>The following paras are replaced to the Existing CC Clause 34.</p> <p>VARIATIONS AND ADJUSTMENTS.</p> <p>34.1 Right to Vary</p> <p>Variations may be initiated by the Employer at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by making a request to the Contractor to submit a proposal.</p> <p>The Contractor shall execute and be bound by each variation till the price does not exceed 50% of the agreement value as specified in LOA/Original agreement. For variation beyond the above the contractor shall be bound to execute, unless the Contractor promptly gives notice to the Engineer stating (with supporting particulars) that the Contractor cannot readily obtain the Goods required for the Variation. Upon receiving this notice, the Engineer shall cancel, confirm or vary the instruction.</p> <p>Each Variation may include:</p> <p>(a) changes to the quantities of any item of work included in the Contract,</p> <p>(b) changes to the quality and other characteristics of any item of work,</p> <p>(c) changes to the levels, positions and/or dimensions of any part of the Works,</p> <p>(d) omission of any work unless it is to be carried out by others,</p> <p>(e) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or</p> <p>(f) changes to the sequence or timing of the execution of the Works.</p>

The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Engineer instructs or approves a Variation

34.2 Value Engineering

The Contractor may, at any time, submit to the Engineer a written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Employer of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Employer of the completed Works, or (iv) otherwise be of benefit to the Employer.

The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 34.3/PCC [Variation Procedure].

If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties:

- (a) the Contractor shall design this part,
- (b) sub-paragraphs (a) to (d) of New-Clause 4.1/PCC [Contractor's General Obligations] shall apply, and
- (c) if this change results in a reduction in the contract value of this part, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall be half (50%) of the difference between the following amounts:
 - (i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause 34.7/PCC [Adjustments for Changes in Legislation] and Sub-Clause PVC/Contract Data [Adjustments for Changes in Cost], and
 - (ii) the reduction (if any) in the value to the Employer of the varied works, taking account of any reductions in quality, anticipated life or operational efficiencies.

However, if amount (i) is less than amount (ii), there shall not be a fee.

34.3 Variation Procedure

If the Engineer requests a proposal, prior to instructing a Variation, the Contractor shall respond in writing as soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:

- (a) a description of the proposed work to be performed and a programme for its execution,
- (b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 25.3/PCC [Programme] and to the Time for Completion, and
- (c) the evaluation of the Variation shall be as specified in New-Clause 35/PCC [Payment for Variation].

The Engineer shall, as soon as practicable after receiving such proposal (under Sub-Clause 34.2/PCC [Value Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst awaiting a response.

Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Engineer to the Contractor, who shall acknowledge receipt.

Each Variation shall be evaluated in accordance with New-Clause 7 [Measurement and Evaluation], unless the Engineer instructs or approves otherwise in accordance with this Clause.

34.4 Payment in Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

34.5 Provisional Sums

Each Provisional Sum shall only be used, in whole or in part, in accordance with the Engineer's instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include only such amounts, for the work, supplies or services to which the Provisional Sum relates, as the Engineer shall have instructed. For each Provisional Sum, the Engineer may instruct:

- (a) work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 34.3/PCC [Variation Procedure]; and/or
- (b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 7 [Nominated Subcontractors]) or otherwise; and for which these shall be included in the Contract Price:
 - (i) the actual amounts paid (or due to be paid) by the Contractor, and
 - (ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in the Contract Data shall be applied.

The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation

34.6 Day work

For work of a minor or incidental nature, the Engineer may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.

Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.

Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall deliver each day to the Engineer accurate statements in duplicate which shall include the following details of the resources used in executing the previous day's work:

- (a) the names, occupations and time of Contractor's Personnel,
- (b) the identification, type and time of Contractor's Equipment and Temporary Works, and
- (c) the quantities and types of Plant and Materials used.

	<p>One copy of each statement will, if correct, or when agreed, be signed by the Engineer and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 37.1/PCC [Application for Interim Payment Certificates]</p> <p>34.7 Adjustments for Changes in Legislation</p> <p>Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of the Country (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.</p> <p>If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to:</p> <p>(a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 26.5/PCC [Extension of Time for Completion], and</p> <p>(b) payment of any such Cost, which shall be included in the Contract Price.</p> <p>After receiving this notice, the Engineer shall proceed in accordance with New-Clause 3.5 [Determinations] to agree or determine these matters.</p> <p>In case there is a decrease in cost as a result of changes of Law by Legislation after the Base Date, the Engineer shall proceed in accordance with New-Clause 3.5 (determination) to agree or determine these matters without waiting for Contractor's / Employer's Notice.</p> <p>Notwithstanding the foregoing, the Contractor shall not be entitled to such an extension of time if the same shall already have been taken into account in determining an extension and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause PVC/Contract Data.</p>
<p>Clause 35/CC</p>	<p>The clause 35 of CC is substituted with following paras.</p> <p>Payment for Variations.</p> <p>A. Variation in the Bill of Quantities</p> <p>i) The quantities of items shown in the Bill of Quantities are approximate, and liable to vary during the actual execution of the work. Some items/group of items may have to be altered, added or omitted. The Contractor shall be bound to carry out and complete the stipulated work as instructed by the Engineer, irrespective of the magnitude of variations including additions, alterations or omissions in the Bill of Quantities, individual items or group of items, specified in the Bill of Quantities.</p> <p>ii) Such variations shall be paid as follows:</p> <p>a) At the accepted rates of the Contract for Positive variation in quantities of each individual item to the extent of 25%, except in the case of foundation works. Unless otherwise specifically provided for in the Bill of Quantities or elsewhere in the Contract, the variation of 25% shall be applicable to each individual item of the BoQ. In case of variation in quantities on minus side, contract rates will be payable for executed quantities.</p>

- b) In case of foundation work, no variation limit applies and Contractor shall carryout the Work, at rates stipulated in the Contract irrespective of any variation.
- c) In case of earth work, the aforesaid variation limit of 25% shall apply to the gross quantity of earth work and variation in the quantity of individual classifications of soil will not be subject to this limit where any variation can take place.
- d) For items against which the quantity given in the Bills of Quantities is "if or as required", there shall be no increase/decrease of rates whatever be the quantity finally executed.
- e) Variation in the quantity of items individually costing up to 1% of the total contract value, shall be payable at the rates stated in the Contract notwithstanding the magnitude of variation up to 2% of the original Contract Value for each item.
- f) In case the variation in individual items is more than 25% on plus side, the rate for the varied quantity beyond 25% shall be negotiated between the Engineer and the Contractor and mutually agreed rates arrived at before actual execution of the extra quantity.

New Items/Extra items:

- g) In case Engineer introduces an item for which the Contract does not contain any rates or prices applicable to the varied Works, the rate of such items shall be derived, wherever possible, from rate for similar items available in the Bill of Quantities of the accepted Tender. In case this is not possible, the rate may be decided on the following basis:
 - i. Cost of Materials at current market price, as actually utilised in the final finished Permanent Works, including a reasonable percentage for wastage and transportation.
 - ii. Cost of enabling works if any (unless provided for separately) worked out on the above basis but with less stringent quality. Specifications minus salvage value of serviceable material released after completion of work and cost of material released as scrap.
 - iii. Cost of labour actually used at the site of work at rates under Payment of Minimum Wages Act for the area of work for each category of worker, further enhanced by a percentage of 10% of the aforesaid rates to account for labour not directly utilised at Site and other ancillary and incidental expenses on labour.
 - iv. Hire charges for Plant & Machinery, scaffolding, shuttering, forms, etc., required to be used at the site of the work. The tools used by the various trades shall not be counted as Plant & Machinery for this purpose.
 - v. An amount of 20% of items (i), (ii), (iii) and (iv) above to allow for Contractor's overheads, profits and taxes. This percentage shall also apply to estimated cost of Materials supplied free to the Contractor.

	<p>vi. In all cases where extra items of work are involved, for which there are no rates in the accepted Bill of Quantities the Contractor shall give a notice to the Engineer, of at least 7 days before the need for their execution arises.</p> <p>h) In the event of disagreement in respect of items (f) and (g) above, the Engineer shall fix such rates of price as are, in his opinion appropriate and obtain the approval of Employer and Engineer shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or Prices to enable on account payments to the Contractor. Alternatively, in the event of disagreement, the Contractor shall have no claim to execute extra quantities/new items and the Engineer shall be free to get such additional quantities beyond 25% new items executed through any other agency. However, if the Engineer or the Employer so directs the Contractor shall be bound to carry out any such additional quantities beyond the limits stated above original quantities and or new items and the disagreement or the difference regarding rates to be paid for the same shall be settled in the manner laid down under the conditions for the settlement of dispute.</p>
<p>Clause 37/CC</p>	<p>The clause 37 of CC is replaced with the following.</p> <p>Payments.</p> <p>37.1 Application for Interim Payment Certificates</p> <p>Payments shall be adjusted for deductions for advance payments other than recoveries in terms of contract and taxes, at source as applicable under law. The Contractor shall be liable to pay liquidated damages for shortfall in progress. Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.</p> <p>The Contractor shall submit a Statement in six copies to the Engineer in accordance with the payment procedure specified by the Engineer, after the end of each month, in a form approved by the Engineer, showing in detail the amounts to which the Contractor considers himself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with New-Clause 4.39/PCC [Progress Reports] and Record Measurement Sheets.</p> <p>The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:</p> <ul style="list-style-type: none"> (a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below); (b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 34.7/PCC [Adjustments for Changes in Legislation] and Sub-Clause PVC/Contract Data [Adjustments for Changes in Cost]; (c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in the Contract Data to the total of the above amounts, until the amount so retained by the Employer reaches the limit of Retention Money (if any) stated in the Contract Data; (d) Any amounts to be added and deducted for the advance payments and repayments in accordance with sub clause 42.0/PCC [Advance Payment];

- (e) any amounts to be added and deducted for Materials in accordance with New-Clause 13/PCC [Materials intended for the Works];
- (f) any other additions or deductions which may have become due under the Contract or otherwise, including those under Clause 4.1/SCC [Claims, Disputes and Arbitration]; and
- (g) the deduction of amounts certified in all previous Payment Certificates.
- (h) for invoicing as per GST Laws, the estimated contract value of the Works executed in terms of (a) above and any amounts added or deducted as per (b), (e) to (g) above is to be broken up in two components i.e. (i) the base amount excluding GST (ii) GST component (calculated at the rate for works contract service as per GST Laws).
- (i) Statement of interim payments certificates should be submitted by the Contractor to the Engineer by the 7th day of each month for the work executed upto the end of the previous month.
- (j) An amount to be deducted for the payments to be made to different Departments towards payments liable to be made by the Contractor

37.2 Schedule of Payments

If the Contract includes a schedule of payments specifying the installments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

- (a) the installments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 37.1/PCC [Application for Interim Payment Certificates];
- (b) New-Clause 13/PCC [Provisional payment against material at site] shall not apply; and
- (c) if these installments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less than that on which this schedule of payments was based, then the Engineer may proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine revised installments, which shall take account of the extent to which progress is less than that on which the installments were previously based.

If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

37.3 Issue of Interim Payment Certificates

No amount will be certified or paid until the employer has received and approved the performance security. Thereafter, the Engineer shall within two days after receiving a statement and supporting documents (including Contractor's certificate in terms of Sub-Clause 1.22/SCC, issue to the Employer a provisional interim payment certificate which shall state the amount which the Engineer determines to be due after preliminary check as per K-RIDE's procedure order. After this the Engineer shall, within 28 days after receiving a statement and supporting documents, issue to the employer an Interim Payment Certificate which shall state the amount which the Engineer fairly determines to be due, with supporting particulars.

However, prior to issuing the Taking-Over Certificate for the Works, the Engineer shall not be bound to issue the Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated in the Contract Data. In this event, the Engineer shall give notice to the Contractor accordingly.

An Interim Payment Certificate shall not be withheld for any other reason, although:

- (a) if anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
- (b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

The Engineer may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Engineer's acceptance, approval, consent or satisfaction.

37.4 Payment

The Employer shall pay to the Contractor:

- (a) the first installment of the advance payment within 42 days after issuing the Letter of Acceptance or within 21 days after receiving the documents in accordance with New-Clause 4.19/PCC [Performance Security] and Sub-Clause 42.0/PCC [Advance Payment], whichever is later;
- (b) (i) After preliminary scrutiny and certifications by the Engineer, payment of 70% of the certified net payment due (after recoveries and deductions), shall be made by the Employer within 10 days of receiving a statement and supporting documents by the Engineer subject to the condition that last interim payment certificate has been settled after detailed check. In the event of the contractor submitting bills based on false measurements, Project Director should issue a written warning to him to the effect that the facility of 70% payment without detailed check will be withdrawn in future. If the contractor repeats the misconduct this facility should be withdrawn.
- (ii) The amount certified in each Interim Payment Certificate within 56 days after the Engineer receives the Statement and supporting documents. Any discrepancy shall be rectified in the next payment to the Contractor; and
- (c) the amount certified in the Final Payment Certificate within 56 days after the Employer receives this Payment Certificate or, the undisputed amount shown in the Final Statement, within 56 days after the date of notification of the suspension.

Payment of the amount due, unless specified in the Contract Data, shall be made in INR into the bank account, nominated by the Contractor.

However, in case of JV, direct payment to individual JV partners shall be made on joint certification (about the net amounts payable to individual partners) by the authorized representative of the JV and concerned respective authorized representative of individual JV partners, after making requisite recoveries/deductions from the gross payment. In case of any dispute regarding the net amounts payable to individual partners, the Engineer shall decide the same on the basis of the execution of items of works under Schedules/Bills indicated in the JV agreement as the responsibility of execution of each JV partner. Payment to individual JV partners shall be treated as

payment made to the JV. The said payment shall not alter any obligation of the JV and its individual Partners under the Agreement and their obligations under the agreement shall remain joint and several.

A foreign company (either single entity or JV partner), shall have to submit proof of having opened their project office in India before any payment (including advance payment) is released to such a company. The required proof here shall be a copy of the report containing information as per format prescribed by Reserve Bank of India submitted to the Director General of Police (DGP) of the state concerned in which project office has been established.

37.5 DELETED

37.6 Delayed Payment

If the Contractor does not receive payment in accordance with Sub-Clause 37.4/PCC [Payment], the Contractor shall be entitled to receive interest compounded monthly on the amount unpaid during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 37.4/PCC [Payment], irrespective (in the case of its sub-paragraph (b)) of the date on which any Interim Payment Certificate is issued.

Unless otherwise stated in the Special Conditions of Contract, the interest amount be calculated at the annual rate of 7% (seven percent).

The Contractor shall be entitled to this payment without formal notice or certification, and without prejudice to any other right or remedy, if the Contractor submits the complied (Fulfilled) documents.

37.7 DELETED

37.8 DELETED

37.9 DELETED

37.10 DELETED

37.11 Statement at Completion

Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Engineer six copies of a Statement at completion with supporting documents, in accordance with Sub-Clause 37.7/PCC [Application for Interim Payment Certificates], showing:

- (a) the value of all work done in accordance with the Contract up to the date stated in the Taking- Over Certificate for the Works,
- (b) any further sums which the Contractor considers to be due, and
- (c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

The Engineer shall then certify in accordance with Sub-Clause 37.3/PCC [Issue of Interim Payment Certificates].

Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement as per procedure prescribed by the

Engineer, with supporting documents showing in detail in a form approved by the Engineer:

37.12 Application for Final Payment Certificate

Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement as per procedure prescribed by the Engineer, with supporting documents (including Contractor's certificate in terms of Sub-Clause 1.22/SCC showing in detail in a form approved by the Engineer:

- (a) the value of all work done in accordance with the Contract, and
- (b) any further sums which the Contractor considers to be due to him under the Contract or otherwise.

If the Engineer disagrees with or cannot verify any part of the draft final statement, as per procedure prescribed by the Engineer the Contractor shall submit such further information as the Engineer may reasonably require and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed. This agreed statement is referred to in these Conditions as the "Final Statement".

However, if, following discussions between the Engineer and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 4.SCC [Obtaining Dispute Board's Decision] or Sub-Clause 4.2/SCC [Amicable Settlement], the Contractor shall then prepare and submit to the Employer (with a copy to the Engineer) a Final Statement.

37.13 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the outstanding balance of this total, in which event the discharge shall be effective on such date

37.14 Issue of Final Payment Certificate

Within 28 days after receiving the Final Statement and discharge in accordance with Sub-Clause 37.12/PCC [Application for Final Payment Certificate] and Sub-Clause 37.13/PCC [Discharge], the Engineer shall issue, to the Employer, the Final Payment Certificate which shall state:

- (a) the amount which he fairly determines is finally due, and
- (b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the balance (if any) due from the Employer to the Contractor or from the Contractor to the Employer, as the case may be.

If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 37.12/PCC [Application for Final Payment Certificate] and Sub-Clause 37.13/PCC [Discharge], the Engineer shall request the Contractor to do so. If the Contractor fails to

submit an application within a period of 28 days, the Engineer shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

37.15 Cessation of Employer's Liability

The Employer shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

- (a) in the Final Statement and also
- (b) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 37.11/PCC [Statement at Completion].

However, this Sub-Clause shall not limit the Employer's liability under his indemnification obligations, or the Employer's liability in any case of fraud, deliberate default or reckless misconduct by the Employer

37.16 Currencies of Payment

- a) The Contract Price shall be paid in Indian Rupees (INR).

37.17 Tax Deduction at Source: Tax deductions will be made at source as per statutory requirement from every payment made to the Contractor at rates notified from time to time.

- i. **Income tax deduction:** Income Tax deduction shall be as per law.
- ii. **Labour Cess & Royalties:** The labour Cess & Royalties will be deducted as per norms of applicable law from each IPCs and remitted to the respective Authorities

37.18 Production of Vouchers

- a. The Contractor shall, whenever required by the Engineer, produce or cause to be produced for examination by the Engineer, any quotation, invoice, cost or other account books, vouchers, receipts, letters, memoranda or any copy of or extract from any such documents and also furnish information and returns, as may be required, relating to the execution of this Contract or relevant for verifying or ascertaining the cost of execution of this Contract or ascertaining the Materials supplied by the Contractor are in accordance with the Specifications laid down in the Contract. The Engineer's decision on the question of relevancy of any documents, information or returns shall be final and binding on the parties
- b. If any part or item of the Work is allowed to be carried out by a Sub-Contractor, assignee or any subsidiary or allied firm, the Engineer shall have power to secure the books of such Sub-Contractor, assignee or any subsidiary or allied firm through the Contractor, and shall have power to examine and inspect the same. The above obligations are without prejudice to the obligations of the Contractor under any statute, rules or orders.

37.19 Withholding and Lien For Sums Claimed

- (i) The Employer shall have lien on and over all materials of every description, tools, tackles, plant, equipment or any amount due and/or that may become due and payable to the Contractor under the Contract, and / or on and over the deposit of Performance

	<p>Security or other amount or amounts made under the Contract and which may become payable to the Contractor. Employer may exercise a general lien also.</p> <p>(ii) And further, unless the Contractor pays and clears immediately on demand any claim of the Employer, the Employer shall at all times be entitled to deduct the amount of the said claim from the amount, securities and / or deposits which may have become or will become payable to the Contractor under the existing contract, or under any other Contract or transaction whatsoever between the Employer and the Contractor even if the matter stands referred to Arbitration. The Contractor shall have no claim for any interest or damage whatsoever in respect of any amounts withheld or treated as withheld under the lien referred to above and duly notified as such to the Contractor</p> <p>37.20 Signature on Receipts for Payments</p> <p>Every receipt of payment to Contractor including refund of the Performance Security shall be signed by the person authorized to do so on his behalf. In the event of death of any of the Contractor's partners in case the Contractor is a partnership firm, during the currency of the Contract, it is hereby expressly agreed that every receipt by any one of surviving Contractor's partners, shall, if so signed as aforesaid, be a good and sufficient discharge as aforesaid, provided that nothing in this Clause shall be deemed to prejudice or affect any claim, which the Employer may hereafter have against the legal representatives of any Contractor's partner so dying, for or in respect of breach of any of the conditions of the Contract. Provided also that nothing contained in this clause shall be deemed to prejudice or affect the respective rights and obligations of the Contractor's partners, or of the legal heirs / representatives of any deceased Contractor / partner interest</p> <p>37.21 Post Payment Audit</p> <p>It is an agreed term of the Contract, that the Employer reserves to himself the right to carry out a post payment audit and / or technical examination of the Works, and the Final bill including all supporting vouchers, abstracts, etc., and to make a claim on the Contractor for the refund of any excess amount paid to him, 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 the Contractor, under the Contract. If any under-payment is discovered, the same shall be paid by the Employer to the Contractor. Such payments or recoveries, however, shall not carry any interest.</p> <p>37.22 Recovery of money due to the Employer</p> <p>All damages (including, without limitation, liquidated damages), costs, charges, expenses, debts, or sums for which the Contractor is liable to the Employer under any provision of the Contract may be deducted by the Employer from amount due to the Contractor under the Contract including, without limitation, and the Employer shall have the power to recover any balance not so deducted from amount due to the Contractor under any other contract between the Employer and the Contractor</p> <p>When the Contractor has assigned to a third party the right to receive amount due, or, to become due, under the Contract to the Contractor or charged such amount in favour of a third party, the Employer's right to deduct damages (including without limitation liquidated damages), costs, charges, expenses, debts or sums for which the Contractor is liable to the Employer from amount due to the Contractor under the Contract shall be limited to the right expressed above.</p>
Clause-38/CC	The clause 38 of CC is substituted with the following para.

	<p>38.1 Compensation Event:</p> <p>The risks referred to in Sub-Clause 11.4/PCC below, in so far as they directly affect the execution of the works in the Country, are:</p> <ul style="list-style-type: none"> (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, (b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, within the Country, (c) riot, commotion or disorder within the Country by persons other than the Contractor's Personnel, (d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, within the Country, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, (e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds, (f) use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract, (g) design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible.
<p>Clause-40/CC</p>	<p>The following paras are added to the Existing CC Clauses.</p> <p>CONTRACT PRICE</p> <p>40.1 The Contract Price</p> <p>Unless otherwise stated in the Special Conditions of Contract:</p> <ul style="list-style-type: none"> (a) the Contract Price shall be agreed or determined under Clause 35/PCC [Payment for Variation] and be subject to adjustments in accordance with the Contract; (b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 34.7/PCC [Adjustments for Changes in Legislation]; (c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and final quantities: <ul style="list-style-type: none"> (i) of the Works which the Contractor is required to execute, or (ii) for the purposes of New-Clause 7/PCC [Measurement and Evaluation]; and (d) the Contractor shall submit to the Engineer, within 28 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules, if applicable. The Engineer may take account of the breakdown when preparing Payment Certificates, but shall not be bound by it. (e) It may be noted that in the event of the Contractor not making the due payments stated in sub-clause (b) above, and the concerned party puts up a claim with the Employer / Engineer, then the Employer / Engineer may make such payments and deduct the same from the sums due to the Contractor. <p>Change in Law</p>

	<p>Change in Law means the occurrence or coming into force of the following, at any time after the last Date of submission of tender:</p> <p>Any new Central and State Taxes, duties, cess, levies, which is imposed or any existing Central and State Taxes, duties, cess, levies & royalties are withdrawn after the due date of submission of tender and which impacts the performance of the contractor with increased cost or which results in extra financial gains to the contractor due to decreased cost in execution of contract. Such additional or reduced cost shall be certified by the Engineer after examining records provided by the contractor and shall be paid by or credited to the employer.</p> <p>However, change in the rate of any existing Central & State taxes (except GST), duties, cess, levies will not be considered as change in Law. Any risk of change in rate of existing Central and State Taxes (except GST), duties, cess, levies lies with and shall be borne by the Contractor.</p>				
<p>Clause 42/CC</p>	<p>The following paras are added to the Existing CC Clauses.</p> <p>Advance Payment:</p> <p>42.1 Mobilization Advance</p> <p>The Employer shall make payment, as an Interest bearing advance for mobilization, when the Contractor submits a guarantee in accordance with this Sub-Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions, shall be as stated in the Contract Data.</p> <p>Unless and until the Employer receives this guarantee, or if the total advance payment is not stated in the Contract Data, this Sub-Clause shall not apply.</p> <p>The Engineer shall issue an interim payment certificate for the first installment of mobilization advance after receiving an application for advance payment (under sub clause 37.1/PCC [Application for Interim Payment Certificates]) and after the Employer receives (i) the Performance Security in accordance with New-Clause 4.19/PCC [Performance Security] and (ii) a guarantee in amounts and currencies equal to the advance payment plus 10%. The next installment shall be released only when the contractor submits statement of having utilized the previous installment of mobilization advance and the Employer is satisfied that the utilization has been done in purposeful manner.</p> <p>Mobilization advance payment: Comprises of the percentage of Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable and in installments as mentioned below;</p> <table border="1" data-bbox="427 1581 1474 1722"> <thead> <tr> <th data-bbox="427 1581 1058 1632">Mobilisation Advance</th> <th data-bbox="1058 1581 1474 1632">Instalments</th> </tr> </thead> <tbody> <tr> <td data-bbox="427 1632 1058 1722">As per request of the Contractor subject to a maximum of 5%</td> <td data-bbox="1058 1632 1474 1722">Two Equal</td> </tr> </tbody> </table> <p>Timing of Mobilization Advance Payment: First Installment within 21 (Twenty-one) days from the date of receipt of Bank guarantee acceptable to Employer.</p> <p>Second Installment shall be released only when the contractor submits statement of having utilized the First Installment of mobilization Advance and the Employer is satisfied that the utilization has been done in purposeful manner. This shall be released within 21 days from the date of receipt of Bank guarantee acceptable to the Employer.</p>	Mobilisation Advance	Instalments	As per request of the Contractor subject to a maximum of 5%	Two Equal
Mobilisation Advance	Instalments				
As per request of the Contractor subject to a maximum of 5%	Two Equal				

Interest on Advance Payment: At the rate of SBI MCLR+2% simple interest per annum on reducing balances

42.2 Advance against Plant and Machinery

This advance is payable in Indian Rupees/respective currencies as quoted in the Tender and accepted by the Employer against plant, equipment and machinery, provided the same have reached the site, or in the case of new items meant specifically for the works, firm purchase order has been placed and the invoices received. The plant and machinery shall be valued by the Engineer as follows:

- (a) New items: 80% of purchase price
- (b) Used items in working order: 80% of the depreciated value as assessed by the Engineer
- (c) Items valued at less than Rs. 1,000,000 (Rs. One million) per unit: Not to be considered

The total advance for Plant and Machinery shall be limited to 5% of the Contract Price and will carry an interest rate of SBI MCLR +2% simple interest per annum on reducing balances. It will be paid against submission of Bank Guarantees for 110% of advance value for each stage of advance to be given by each member of the consortium/JV in proportion to their participation as per format given in section 10: Formats, from an Indian Schedule bank (excluding Cooperative Banks) or from a schedule Foreign Bank as defined in Section 2(e) of RBI Act 1934 read with Second Schedule. All bank Guarantees should be payable in Bangalore at the designated branch.

The Contractor should give an Undertaking that "No advance/loan has been taken against the subject plant & machinery from any other individual/financial institution/ organisation etc." If a wrong/false undertaking is given, all the BGs can be forfeited and the contract is liable for termination under clause 49 of CC/PCC.

The Advance against Plant and Machinery will be paid within 30 days after receipt of the Contractor's written request by the Employer which is recommended by the Engineer and submission of Bank Guarantees for procurement of plant and machinery.

Wherever Bank Guarantee or any other instrument is to be extended or fresh BG to be obtained, the cost towards getting extension of BG or fresh BG and other incidental charges will be on Contractor's account

The Contractor;

- (i) Shall submit the invoice and RC book (wherever applicable) in original, at the time of obtaining advance amount.
- (ii) Shall furnish all four Bank Guarantees one time as per Condition of Contract.
- (iii) Shall execute an Indemnity bond in favour of an Employer as against Third Party claim.

(iv) Shall not seek the possession of machinery brought to the site till the Advance obtained from Employer is fully settled.

The contractor should ensure that in the case of "Machinery and Equipment Advance" insurance and hypothecation in favour of the Employer should be done. The contractor should submit the proof of document related to Insurance and Hypothecation to the Engineer who will certify that the insurance and hypothecation to the Employer has been done in proper manner.

Employer shall be the sole custodian of the entire plant and machinery whenever the advance amount is given to the contractor and the same shall remain in the custody of Employer, till the Advance obtained from Employer, is fully settled.

The machinery and equipment brought to the site shall be exclusively intended for the execution of the work of Employer and shall not be removed without the consent of the Engineer.

The Contractor shall indemnify and hold harmless, the Employer against all actions, suits, proceedings, claims, damages, losses, expenses, demands pertaining to Advance amount towards plant and machinery.

The Contractor shall not remove any Equipment or Machinery from the site without the prior permission of the Engineer.

The contractor;

a) Shall not mortgage/create charge/hypothecate/encumber, in any way the machineries and equipment brought to site from the amounts advanced by Employer and shall give an undertaking in writing to that effect in favour of Employer.

b) Shall not sell or alienate any part/portion of machinery and equipment without the consent of Employer.

c) In the event of any such sale/alienation of any portion or part of machinery, Employer shall hold First Charge and the proceeds of such sale or alienation shall be appropriated towards the loan/ credit/ advance in respect of plant and machinery brought to the site by contractor.

42.3 Guarantees

Advances as mentioned in sub-clauses 42.1/PCC above, shall be payable against acceptable Bank Guarantees from banks as specified in New-clause 4.19/PCC. The guarantees shall be in the form as given in Section 10 (Contract Forms) or in another form approved by the Employer. The Contractor shall ensure that the guarantees are valid and enforceable until the advance amount paid as has been repaid, but its amount may be progressively reduced by the amount repaid by the Contractor as indicated in the Payment Certificates. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment has been repaid.

42.4 Recovery of Advances

	<p>Unless stated otherwise in the Contract Data, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Engineer in accordance with Sub-Clause 37.3/PCC [Issue of Interim Payment Certificates], as follows:</p> <p>(a) deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment) exceeds 15 percent of the Accepted Contract Amount Less Provisional Sums or passage of six months from the date of release of first advance payment, whichever is earlier; and</p> <p>(b) deductions shall be made for accrued interest on the advance up to the month and advance at the rate stated in the Contract Data of the amount of each Interim Payment Certificate (excluding the advance payment and deductions and repayments of retention) in the currencies and proportions of the advance payment until such time as the advance payment and accrued interest has been repaid; provided that the advance payment and accrued interest shall be completely repaid prior to the time when 85 percent of the Accepted Contract Amount has been certified for payment. If the amount of interim payment certificate is not sufficient for recovery of accrued interest or in the opinion of the Employer satisfactory progress is not being achieved by the contractor, then the contractor will have to deposit the accrued interest and return the mobilisation advance in part or in full as demanded by the Employer, failing which Employer shall have the right to encash the Bank Guarantee(s)</p> <p>The contractor shall always have the option to start repayment earlier and/or to complete the repayment earlier than the due date.</p> <p>If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 49.0/PCC [Termination by Employer] or New-Clause 8/PCC [Force Majeure] (as the case may be), the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Employer.</p> <p>42.5 Repayment rate of Advance payment: 10% (Ten percent) of the amount of each running account bill payment.</p> <p>42.6 Advances to be Used only for this Work</p> <p>The advances shall be used by the Contractor strictly for the purpose of the Contract, and for the purpose for which they are paid. Under no circumstances, shall the advances be diverted for other purposes. Any such diversion shall be construed as a breach of the Contract and the Contractor shall be asked to return the advance at once and pay interest at 15% per annum till the advance is recovered back from him. The Contractor shall return the advance and pay the interest in one go without demur.</p> <p>Employer retains the right for any other remedy prescribed for breach of Contract in this regard.</p> <p>The Contractor, if required by the Engineer shall provide the details of utilization of Mobilization advance.</p>
<p>Clause 46/CC</p>	<p>The clause 46 of CC replaced with the following paras.</p> <p>Employer Taking Over</p> <p>46.1 Taking Over of the Works and Sections</p>

The Employer shall take over the Site and the Works within after issuing a certificate of Completion. Except as stated in Sub-Clause 30.5/PCC [Failure to Pass Tests on Completion], the Works shall be taken over by the Employer/Railway when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 26.4/PCC [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.

The Contractor may apply by notice to the Engineer for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contractor may similarly apply for a Taking-Over Certificate for each Section.

In case the works are to be taken over in accordance with sub-clause 30.6/PCC, the completed works shall be taken over by the Zonal Railway with the procedure specified by the Engineer.

The Engineer shall, within 28 days after receiving the Contractor's application:

- (a) issue the Taking-Over Certificate to the Contractor, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor outstanding work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or
- (b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice under this Sub-Clause.

If the Engineer fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 28 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on the last day of that period.

46.2 Taking Over of Parts of the Works

The Engineer may, at the sole discretion of the Employer, issue a Taking-Over Certificate for any part of the Permanent Works.

The Employer shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Engineer has issued a Taking-Over Certificate for this part. However, if the Employer does use any part of the Works before the Taking-Over Certificate is issued:

- (a) the part which is used shall be deemed to have been taken over as from the date on which it is used,
- (b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Employer, and
- (c) if requested by the Contractor, the Engineer shall issue a Taking-Over Certificate for this part.

After the Engineer has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these

	<p>Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.</p> <p>If the Contractor incurs Cost as a result of the Employer taking over and/or using a part of the Works, other than such use as is specified in the Contract or agreed by the Contractor, the Contractor shall (i) give notice to the Engineer and (ii) be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to payment of any such Cost, which shall be included in the Contract Price. After receiving this notice, the Engineer shall proceed in accordance with New—Clause 3.5/PCC [Determinations] to agree or determine this Cost and profit.</p> <p>If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages thereafter for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply to the daily rate of delay damages under Sub-Clause 26.8/PCC [Delay Damages], and shall not affect the maximum amount of these damages</p> <p>46.3 Interference with Tests on Completion</p> <p>If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Employer/Engineer/other Contractors of the Employer, are responsible, the Employer shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.</p> <p>The Engineer shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Engineer shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance with the relevant provisions of the Contract.</p> <p>If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out the Tests on Completion, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to:</p> <ul style="list-style-type: none"> (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 26.5/PCC [Extension of Time for Completion], and (b) payment of any such Cost, which shall be included in the Contract Price. <p>After receiving this notice, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine these matters.</p> <p>46.4 Surfaces Requiring Reinstatement</p> <p>Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.</p>
Clause-49/CC	The following paras are added to the existing CC Clauses.

TERMINATION BY EMPLOYER**49.6 Notice to Correct**

If the Contractor fails to carry out any obligation under the Contract as mentioned below, but not limited to the obligations mentioned herein below, the Engineer/ Employer may serve the contractor with a 14 days' notice in writing calling upon the Contractor to make good the failure and to remedy it. If the Contractor;

- (a) fails to comply with New-Clause 4.19/PCC [Performance Security],
- (b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,
- (c) without reasonable excuse fails to:
 - (i) proceed with the Works in accordance with Clause 26/CC/PCC [Commencement, Delays and Suspension], or
 - (ii) comply with a notice issued under New-Clause 5.5 [Rejection] or New-Clause 5.6/PCC [Remedial Work], within 28 days after receiving it, or
 - (iii) adhere to the agreed programme of work / activity on the critical path, by a margin of 10% of the stipulated period, or
 - (iv) take steps to deploy competent and adequate number of personnel, and equipment to achieve progress as per agreed programme or
 - (v) adhere to the instructions of Engineers/Employer persistently or
 - (vi) comply any provision of the contract or
 - (vii) provide the Engineer/Employer or their representative proper facilities for inspecting the works or any part thereof as required, under New-Clause 5.3/PCC (Inspection) and New-clause 5.4/PCC (Testing).
- (d) subcontracts the whole or major part of the Works or assigns the Contract without prior written consent of the Employer.,

If the Contractor does not, within 14 days of receipt of notice under this sub-clause, proceed to make good his default in so far as the same is capable of being made good and carry on the work of complying with such direction as contained in the notice under sub clause 49.6/PCC to the entire satisfaction of the Engineer/Employer, the Employer shall be entitled to take action under sub-clause 49.6/PCC, 49.7/PCC below,

In case of Contractor's repeated failure to adhere to the agreed program, and whereas the contractor has been served with a Notice to Correct under Clause 49.6 of PCC, if the Contractor approaches K-RIDE with a revised program with specific monthly physical and financial targets along with the proposal to deploy matching inputs in the form of manpower and other resources to the satisfaction of the Employer, then the Employer may consider whether to proceed with termination of the contract under Clause 49.7/PCC or to continue with the contract. However, the request to continue with the contract shall only be considered if the Contractor supports his earnestness to adhere to the revised program by submitting additional Performance Security in the form of Bank Guarantee(s) of specified number and value as decided by the Employer (total value of which will not exceed 10% of the contract price). The encashment of these additional Bank Guarantee(s) shall be linked

with the non-achievement of agreed physical/financial targets agreed upon by the Contractor and the Employer.

In case the Contractor's failure is limited to only some of the works, and in response to Notice to Correct under Clause 49.6 of PCC, the contractor approaches the Employer that such works may be offloaded from him and got executed through another agency and additional cost incurred, if any, should be recovered from his dues, the Employer, on being convinced that the anticipated additional cost for such works will not be substantial and can be recovered from the dues of the contractor and that such offloading will help in improving the overall progress of the project, may

agree to such offloading without any repercussion on the performance security and/or additional bank guarantees, if any, submitted by the contractor. However, the Employer will not be under any compulsion to agree to such a request. The Contractor shall be informed of the LOA issued to other agency(ies) for such works.

In case the Contractor does not approach the employer for offloading but the Employer is convinced that:

- (i) offloading of some works will help in improving the progress of the project;
- (ii) termination/part termination of the contract at this stage will not be in the interest of the project;
- (iii) the anticipated additional cost for such works will not be substantial and can be recovered from the dues of the Contractor;

The Employer may issue 7 days' notice to the Contractor stating the resources required to be deployed against each work. If the Contractor fails to deploy the required resources as indicated in the notice, the employer shall offload such works and proceed with getting the works executed through other agency(ies). The Contractor shall be informed of the LOA issued to other agency(ies) for such works.

Offloading under the sub clause 49.6/PCC shall be without any repercussion on the performance security and/or additional bank guarantees, if any, submitted by the contractor. The Contractor would have no future claim on this account and the extra expenditure so incurred, if any, by the Employer in getting the offloaded work done, shall be recovered from subsequent payment certificates or any other dues of the Contractor

49.7 Termination by Employer

The Employer shall be entitled to terminate the Contract as a whole or any part or parts (as may be specified in the Notice of Termination under any of the above Sub-Clause issue) if the Contractor:

- (a) fails to comply with the directions contained in the notice under Sub-Clause 49.6/PCC [Notice to Correct],
- (b) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against it by Court or Statutory Authority him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events, or
- (c) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an inducement or reward:
 - (i) for doing or forbearing to do any action in relation to the Contract, or

(ii) for showing or forbearing to show favour or disfavour to any person in relation to the Contract,

or if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such inducement or reward as is described in this sub-paragraph (c). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination

In any of these events or circumstances, the Employer may, by Notice Terminate the contract with immediate effect.

The Employer's election to terminate the Contract shall not prejudice any other rights of the Employer, under the Contract or otherwise.

The Contractor shall remove all his plants and machinery from the site then leave the Site and deliver any required Goods, all Contractors' Documents, and other design documents made by or for him, to the Engineer within 7 days from the issue of Notice of Termination, failing which Delay Damages as prescribed for delay in completion of works shall be imposed as per provision of clause 26.8/PCC However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice of Termination (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.

After termination, the Employer may complete the Works and/or arrange for any other entities to do so. The Employer and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor for completing the work.

49.8 Valuation at Date of Termination

As soon as practicable after a notice of termination under Sub-Clause 49.7/PCC [Termination by Employer] has taken effect, the Engineer shall proceed in accordance with Sub-Clause 3.5/PCC [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract. For this purpose, the contractor shall be notified the date for witnessing of measurements and handing over of the materials for which contractor has already been paid. In case the contractor fails to attend or send a representative even after such notice, the Engineer shall ex parte proceed with measurements of the works executed and taking over of plants and materials etc. for which payment has already been made to the contractor, which shall be treated as final.

49.9 Payment after Termination

After a notice of termination under Sub-Clause 49.7/PCC [Termination by Employer] has taken effect, the Employer may:

- (a) proceed in accordance with New-Clause 2.4/PCC [Employer's Claims],
- (b) encash the Performance Guarantee and forfeit the Performance Security:
 - i. In full including additional Performance Guarantee amount if any taken in terms of ITT and not due for release on the date of issue of termination letter, in case of termination of the contract as a whole; or
 - ii. in part/parts proportionate to the contract price of the bill/schedule to which the terminated part of work belongs i.e.

$$P = (A \times B) \div C \text{ where,}$$

P = Proportionate Bank Guarantee Amount

A = Contract Price of the particular bill/schedule to which the terminated part of work belongs

B = Performance Guarantee amount in terms of CC New- clause 4.19/PCC

C = Total Contract Price

Plus, additional Performance Guarantee amount if any taken in terms of ITT and not due for release on the date of issue of termination letter against that particular bill/Schedule to which the terminated part of the work belongs in case of termination in part/parts.

- (c) release any payment due to the contractor for works executed prior to termination and evaluation under clause 49.8/PCC (valuation at date of termination, however, if by this time the Contractor has failed to make a payment due to the Employer, the same will be deducted from the payment due and any balance remaining shall then be paid to the Contractor.)

49.10 Employer's Entitlement to Termination for Convenience

The Employer shall be entitled to terminate the Contract, at any time for the Employer's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 28 days after the later of the dates on which the Contractor receives this notice or the Employer returns the Performance Security. The Employer shall not terminate the Contract under this Sub-Clause in order to execute the Works himself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor.

After this termination, the Contractor shall proceed in accordance with the relevant clause and shall be paid in accordance with New-Clause 8/PCC [Payment and Release in case of Optional Termination].

49.11 Payment on Termination

After termination under Sub-Clause-49.7/PCC the Employer shall return the Performance Security, and shall pay the Contractor an amount calculated and certified in accordance with the following conditions:

- A. The value of approved materials actually brought to the site and reasonably required to execute the works during next three months, as per approved programme, and
- B. Value of work completed up to date by the Contractor at rates specified in the Contract, after taking into account any deductions, retentions, and setoff.
- C. In addition, a sum not exceeding 2% (two percent) of the value of the work remaining incomplete on the date of Termination notice taking effect.

The payment as above are full compensation for termination under this clause and the Contractor has no claim for damages or other entitlements whether under the contract or otherwise.

In case of termination/ foreclosure of the Contract under whatsoever circumstances, any remaining tools, plants, equipment's and surplus materials of the Employer with the Contractor will be returned to the Employer at Employer's depot at the Contractor's cost. In case of the failure of the Contractor to do so, the Employer will be entitled to recover their

	<p>cost from the Contractor from the amount becoming due to the Contractor or from any other amount due in any other contracts.</p> <p>The decision of the Engineer of the amount to be recovered will be final decision and full credit at rates initially charged to the Contractor shall be allowed for such materials. Similarly, the Employer shall be entitled to recover the cost of the unreturned material, plants, equipment and tools from the Contractor, where such material have been supplied free of cost and plants, equipment and tools, free of cost or on lease basis to the Contractor as stipulated in the Contract.</p> <p>49.12 Survival</p> <p>Termination of this Contract</p> <ol style="list-style-type: none"> a. shall not relieve the Contractor or the Employer of any obligations already incurred hereunder which expressly or by implication survives Termination hereof and b. except as otherwise provided in any provision of this Contract expressly limiting the liability of either party, shall not relieve either party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omissions of such Party prior to the effectiveness of such Termination or arising out of such Termination <p>49.13 Corrupt or Fraudulent Practices</p> <p>If the Employer determines that the Contractor has engaged in corrupt, fraudulent, collusive or coercive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days' notice to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site, and the provisions of Clause 49 CC/PCC shall apply as if such expulsion had been made under Sub-Clause 49.7/PCC.</p> <p>For the purposes of this Sub-Clause:</p> <ol style="list-style-type: none"> (a) "corrupt practice" means the offering, giving, receiving of soliciting of anything of "value to influence the action of a public official in the procurement process or in the Contract execution. (b) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of the Contract to the detriment of the Employer, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition (c) "collusive practice" means a scheme or arrangement between two or more bidders, with or without the knowledge of the Employer, designed to establish bid prices at artificial, non-competitive levels. (d) "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract.
<p>Clause 1/SCC</p>	<p>The following New-paras are added to the Existing SCC Clauses.</p> <p>1.1 Engagement of Staff and Labour</p> <p>Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labour, local or otherwise, and for their payment, housing, feeding and transport.</p>

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within the Country.

1.2 Rates of Wages and Conditions of Labour

The Contractor shall pay rates of wages, and observe conditions of labour, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by employers whose trade or industry is similar to that of the Contractor.

If the Employer is obliged to provide amenities or arrange payment of wages to contract labour employed by the contractor either directly or through sub-contractor under the contract on account of failures on the part the contractor to provide the amenities and / or arrange payment of wages to the contract labour as required of him under the provision of the applicable acts / rules made there under, the Engineer/Employer shall be at liberty without prejudice to the rights of Engineer/Employer under Section 20(2) and 21(4) of the Contract Labour (Regulation and Abolition) Act 1970 to recover the whole or part of the expenditure so incurred on the wages so paid by the Engineer/Employer/Railway from the security deposit and/or from any sum or sums due to the Contractor whether under this contract or any other contract.

The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances, and any benefits as are subject to taxes under the Laws of the Country for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there-under, regulation or notifications including amendment. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/ regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the contractor including his amount of performance security. The Employer/Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

The Contractor shall duly comply with the provisions of the Apprentices Act 1961 (III of 1961), the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so he shall be subject to all liabilities provide by the said Act and said Rules.

The Contractor and his Sub Contractors shall comply with all applicable Labour Laws, and should not employ Child Labour for construction and maintenance activities. The Contractor shall provide appropriate facilities for children in Construction Camp sites.

The Contractors shall not differentiate wages between men and women for work of equal value

1.3 Persons in the Service of Employer

The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst persons in the service of the Employer or the Engineer

1.4 Labour Laws

The Contractor shall comply with all the relevant Labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration, and emigration, and shall allow them all their legal rights. The Contractor and his sub-contractors shall be responsible to ensure at his own cost, compliance to all laws, bye-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 sub-contractors or petty contractors on the works which shall include all the acts listed in Appendix – 1 but not limited to the same.

The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.

During continuance of the Contract, the Contractor and his Sub-Contractors shall abide at all times by all existing labor enactments and rules made thereunder, regulations, notifications and bye laws of the State or Central government or local authority and any other labor laws (including rules), regulations, bye laws that may be passed or notification that may be issued under any labor law in future either by the State or the Central Government or the local authority. Salient features of some of the major labor laws that are applicable to construction industry are given in Appendix 1 to these Conditions of Contract

1.5 Working Hours

No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the Contract Data, unless:

- (a) otherwise stated in the Contract,
- (b) the Engineer gives consent, or
- (c) the work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer.
- (d) The Contractor, generally will have to carry out work during night hours also and in shifts unless specifically provided otherwise in the Contract. No increase in rates or extra payments shall be admissible for night work. Wherever night working is carried out by Contractor, temporary lighting arrangements as per approved layout shall be provided, installed, maintained for the duration of the contract and removed after completion of work. Flashing lights to warn the traffic on roads shall be used at all times on all obstructions. No extra payment will be made for the provision of temporary lighting, flashing lights and for maintenance. It is to be noted that the works are being undertaken in an urban area.
- (e) Should there be complaints received by members of the public regarding excessive noise or vibration, etc. especially at night, and if such complaints are valid, then the contractor shall take remedial measures to prevent such nuisance. No extra payment will be made to the contractor for the provision of such measures.
- (f) Working hours during the Defect liability period will be curtailed when certain system become operational

1.6 Facilities for Staff and Labour

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. The Contractor shall also provide facilities for the Employer's Personnel as stated in the Specification.

The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

1.7 Health and Safety

The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and a standing arrangement for ambulance service are available at a phone call at all times at the Site and at any accommodation for Contractor's and Employer's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities, for the purpose of dealing with and overcoming the same. The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence.

HIV-AIDS Prevention. The Contractor shall conduct an HIV-AIDS awareness programme via an approved service provider, and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals

Epidemics

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities, for the purpose of dealing with and overcoming the same.

Records of Safety and Health

The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

Submission of Returns

The contractor shall be responsible for timely submission of all returns and statements to the concerned authorities in full compliance of all rules, bye-laws and regulations for the time being in force.

The Contractor shall throughout the contract (including the Defects Notification Period): (i) conduct Information, Education and Consultation Communication (IEC) campaigns, at least

every other month, addressed to all the Site staff and labor (including all the Contractor's employees, all Sub-Contractors and Consultants' employees, and all truck drivers and crew making deliveries to Site for construction activities) and to the immediate local communities, concerning the risks, dangers and impact, and appropriate avoidance behavior with respect to of Sexually Transmitted Diseases (STD)—or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular; (ii) provide male or female condoms for all Site staff and labor as appropriate; and (iii) provide for STI and HIV/AIDS screening, diagnosis, counseling and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and labor.

The Contractor shall include in the program to be submitted for the execution of the Works under Sub-Clause 25.3 an alleviation program for Site staff and labour and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation program shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the program shall detail the resources to be provided or utilized and any related sub-contracting proposed. The program shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation this program shall not exceed the Provisional Sum dedicated for this purpose.

1.8 Contractor's Superintendence

Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.

Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 3/CC [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.

The Contractor shall employ the key personnel named in the Schedule of Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

The Contractor shall not employ any retired government Gazetted officer, who has either not completed one year after the date of retirement, or has not obtained permission to employment with the Contractor

1.9 Contractor's Personnel

The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:

- (a) persists in any misconduct or lack of care,
- (b) carries out duties incompetently or negligently,

- (c) fails to conform with any provisions of the Contract, or
- (d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment.

If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons, the Contractor shall ensure that the person leaves the Site within seven (7) days and has no further connection with the work in the Contract. The replacement person shall be appointed within fourteen (14) days of the notification by the Engineer.

A reasonable proportion of the Contractor's Superintending Staff shall have a working knowledge of the English language or the Contractor shall have available on site at all times a sufficient number of competent interpreters to ensure the proper transmission of instructions and information. If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person

1.10 Records of Contractor's Personnel and Equipment

The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works

1.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site

1.12 Foreign Personnel

The Contractor may bring in to the country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence visas and work permits. The Employer will, without any financial liability, if requested by the Contractor, use his best endeavours in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national, or government permission required for bringing in the Contractor's personnel.

The Contractor shall be responsible for the return of these personnel to the place where they were recruited or to their domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial. Contractor shall also be responsible for any legal liabilities during their stay.

1.13 Supply of Foodstuffs

The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract

1.14 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel

1.15 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce their danger to health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide

The Contractor shall provide his staff and labour with suitable prophylactics for the prevention of malaria, and take steps to prevent the formation of stagnant pools of water. He shall comply with all the regulations of the local health authorities in these respects and shall in particular arrange to spray thoroughly with approved insecticides all buildings erected on the site such treatment shall be carried out at least once a year or as instructed by the Engineer. The Contractor shall warn his staff and labour of the dangers of diseases like Malaria, Filaria and other contagious diseases etc. and also regarding, Scorpions, Snakes, Wild animals etc. and preventive actions required to be taken by the labour and staff.

1.16 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift barter or disposal thereto by Contractor's Personnel.

1.17 Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.

1.18 Festivals and Religious Customs

The Contractor shall respect the Country's recognized festivals, days of rest and religious or other customs

1.19 Funeral Arrangements

The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of his local employees who may die while engaged upon the Works.

1.20 Prohibition of Forced or Compulsory Labour

The contractor shall not employ "forced or compulsory labour" in any form. "Forced or compulsory labour" consists of all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

1.21 Prohibition of Harmful Child Labour

The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

1.22 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and shall be available for inspection by the Engineer during normal working hours. These records shall

	<p>be included in the details to be submitted by the Contractor under Sub-Clause 1.10/SCC of PCC [Records of Contractor's Personnel and Equipment].</p> <p>In addition to the above, the Contractor shall register his firm/company etc. on website 'www.shramikkalyan.indianrailways.gov.in' and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation on Portal shall be done as under:</p> <p>(a) Contractor shall apply for onetime registration of his company/firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of Letter of Acceptance. Employer/Engineer shall approve the contractor's registration in the portal within 7 days of receipt of such request.</p> <p>(b) Contractor once approved by any Employer/Engineer, can create password with login ID (PAN No.) for subsequent use of portal for all LoAs issued in his favour.</p> <p>(c) The contractor once registered on the portal, shall provide details of his Letter of Acceptances (LoA) / Contract Agreements on shramikkalyan portal within 15 days of issue of any LoA for approval of concerned Employer/Engineer. Employer/Engineer shall update (if required) and approve the details of LoA filled by contractor within 7 days of receipt of such request.</p> <p>(d) After approval of LoA by Employer/Engineer, contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on shramikkalyan portal on monthly basis.</p> <p>(e) It shall be mandatory upon the contractor to ensure correct and prompt uploading of all salient details of engaged contractual labour & payments made thereof after each wage period.</p> <p>While processing payment of any 'Interim Payment Certificate' or 'Final Payment Certificate' or release of 'Advances' or 'Performance Guarantee / Security deposit', contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at 'www.shramikkalyan.indianrailways.gov.in' till ___Month, ___Year."</p>
<p>Clause Price adjustment/ Contract data</p>	<p>1 PRICE VARIATION CLAUSE (PVC):</p> <p>1.1 Applicability: Price Variation Clause (PVC) shall be applicable only in those contracts where tender conditions specifically permit it. Materials supplied free of cost by Railway to the Contractors and any extra NS item(s) included in subsequent variation falling outside the purview of the Schedule of Items of tender shall fall outside the purview of Price Variation Clause. If, in any case, accepted offer includes some specific payment to be made to consultants or some materials supplied by Railway free or at fixed rate, such payments shall be excluded from the gross value of the work for the purpose of payment/recovery of price variation.</p> <p>1.2 Base Month: The Base Month for 'Price Variation Clause' shall be taken as month 28 days prior to opening of tender including extensions, if any, unless otherwise stated elsewhere. The</p>

quarter for applicability of PVC shall commence from the month following Base month. The Price Variation shall be based on the average Price Index of the quarter under consideration.

1.3 Validity:

Rates accepted by Railway Administration shall hold good till completion of work and no additional individual claim shall be admissible except:

- (a) Payment/recovery for increase/decrease in GST on works contract or imposition/removal of any tax/cess on Works Contract as per Clause 37,
- (b) Payment/recovery for overall market situation as per Price Variation Clause given hereunder.

1.4 Adjustment for variation in prices of material, labour, fuel, explosives, detonators, steel, concreting, ferrous, non-ferrous, insulators, zinc and cement shall be determined in the manner prescribed.

1.5 Components of various items in a contract on which variation in prices be admissible, shall be Material, Labour, Fuel, Explosives & Detonators, Steel, Cement, Concreting, Ferrous, Non-ferrous, Insulator, Zinc, Erection etc. However, for fixed components, no price variation shall be admissible.

1.6 The percentages of labour component, material component, fuel component etc. in various types of Engineering contracts shall be as under:

S	Component	E/Work & Minor Bridges Contracts, Ballast Supply Contracts, Tunneling Contracts (without explosive)	Tunneling Contracts (with explosives)	Major and Important Bridges Contracts	Building Contracts	Permanent Way linking Contracts (Manual)	Other Works Contracts
1	Labour Component	20	20	20	40	50	20
2	Other Material Components	10	15	30	35	5	20
3	Plant Machinery & Spares	30	15	20	5	15	30
4	Fuel & Lubricants Component	25	15	15	5	15	15
5	Fixed Component*	15	15	15	15	15	15
6	Detonators & Explosive Component	-	20	-	-	-	-

* It shall not be considered for any price variation.

Formulae: The Amount of variation in prices in several components (labour, material etc.) shall be worked out by the following formulae

- (i) $L = W \times (LQ - LB) \times LC / LB \times 100$
- (ii) $M = W \times (MQ - MB) \times MC / MB \times 100$
- (iii) $F = W \times (FQ - FB) \times FC / FB \times 100$
- (iv) $E = W \times (EQ - EB) \times EC / EB \times 100$
- (v) $PM = W \times (PMQ - PMB) \times PMC / PMB \times 100$
- (vi) $S = SW \times (SQ - SB) / SB$ (vii) $C = CV \times (CQ - CB) / CB$

For Railway Electrification Works:

- (vii) $T = [(CS - CO) / CO \times 0.4136] \times TC$
- (viii) $R = [(RT - RO) / RO + (ZT - ZO) / ZO \times 0.06] \times RC$
- (ix) $N = [(PT - PO) / PO] \times NC$
- (x) $Z = [(ZT - ZO) / ZO] \times ZC$
- (xi) $I = [(IT - IO) / IT] \times 85$

Where,

- L Amount of price variation in Labour
- M Amount of price variation in Materials
- F Amount of price variation in Fuel E Amount of price variation in Explosives
- PM Amount of price variation in Manufacture of machinery for mining, Quarrying and Construction
- S Amount of price variation in Steel
- C Amount of price variation in Cement
- T Amount of price variation in Concreting
- R Amount of price variation in Ferrous Items
- N Amount of price variation in Non-Ferrous Items
- Z Amount of price variation in Zinc

I	Amount of price variation in Insulator
Lc	% of Labour Component
Mc	% of Material Component
Fc	% of Fuel Component
EC	% of Explosive Component
PMC	% of Manufacture of machinery for mining, Quarrying and Construction Component
Tc	% of Concreting Component
Rc	% of Ferrous Component
Nc	% of Non-Ferrous Component
Zc	% of Zinc Component
W	Gross value of work done by Contractor as per on-account bill(s) excluding cost of materials supplied by Railway 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)
Lb	Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the base period.
Lq	Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration.
Mb	Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the base period
Mq	Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
Fb	Wholesale Price Index for the group Fuel & Power as published in the R.B.I. Bulletin for the base period
Fq	Index Number of Wholesale Price Index – By Groups and Sub-Groups for the group Fuel & Power as published in the R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
Eb	Index number of Monthly Whole Sale Price Index for the category 'Explosive' of (g).Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the base period. EQ Index number of Monthly Whole

	<p>Sale Price Index for the category 'Explosive' of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the average price index of 3 months of the quarter under consideration.</p>
PM	<p>Index number of Monthly Whole Sale Price Index for the category 'k. Manufacture of machinery for mining, quarrying and construction' under (R) MANUFACTURE OF MACHINERY AND EQUIPMENT, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the base period.</p>
PMQ	<p>Index number of Monthly Whole Sale Price Index for the category 'k. Manufacture of machinery for mining, quarrying and construction' under (R) MANUFACTURE OF MACHINERY AND EQUIPMENT, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the average price index of 3 months of the quarter under consideration.</p>
Sw	<p>Gross value of steel supplied by the Contractor as per the 'on-account' bill for the month under consideration</p>
Sb	<p>Index number of Monthly Whole Sale Price Index for the relevant category of mild steel item as mentioned in Clause 46A.9, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP); for the base period.</p>
Sq	<p>Index number of Monthly Whole Sale Price Index for the relevant category of mild steel item as mentioned in Clause 46A.9, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP); for the average price index of the 3 months of the quarter under consideration.</p>
Cv	<p>Value of Cement supplied by Contractor as per on account bill in the quarter under consideration.</p>
Cb	<p>Index No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the base period.</p>
Cq	<p>No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the average price index of the 3 months of the quarter under consideration.</p>
Cs	<p>RBI wholesale price index for Cement, Lime & Plaster for the month which is six months prior to date of casting of foundation.</p>
Co	<p>RBI wholesale price index for Cement, Lime & Plaster for the month which is one month prior to date of opening of tender.</p>

Rt	IEEMA price index for Iron & Steel for the month which is two months prior to date of inspection of material.	
Ro	IEEMA price index for Iron & Steel for the month which is one month prior to date of opening of tender.	
PT	IEEMA price index for Copper wire bar for the month which is two months prior to date of inspection of material.	
PO	IEEMA price index for Copper wire bar for the month which is one month prior to date of opening of tender.	
ZT	IEEMA price index for Zinc for the month which is two months prior to date of inspection of material	
ZO	IEEMA price index for Zinc for the month which is one month prior to date of opening of tender	
It	RBI wholesale price index for the sub-group "other Portland and Ceramic product" for the month which is two months prior to date of inspection of material	
Io	RBI wholesale price index for the sub-group "other Portland and Ceramic product" for the month which is one month prior to date of opening of tender	
46A. 8	The demands for escalation of cost shall be allowed on the basis of provisional indices as mentioned above in Clause 46A.7. 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 Price Variation formula as mentioned in this Clause shall be as under:	
SL	Category of Steel Supplied in Railway Work	Category of Steel Items as mentioned in Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry Department of Industrial Policy & Promotion (DIPP).
1.	Reinforcement bars and other rounds	'MS Bright Bars' individual commodity of group item (d) Mild Steel-Long Products under (N) MANUFACTURE OF BASIC METAL.
2.	All types and sizes of angles, channels and joists	'Angles, Channels, Sections, Steel' individual commodity of group item (d) Mild Steel- Long Products under (N) MANUFACTURE OF BASIC METAL.
3.	All types and sizes of plates	'e. Mild Steel – Flat Products' of (N) MANUFACTURER OF BASIC METAL.
4.	Any other section of steel not covered in the above categories and excluding HTS	Average of price for the 3 categories covered under SL 1, 2 & 3 above

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 Standard General Conditions of Contract. However, where extension of time has been granted due to Contractor's failure under Clause 17-B of the Standard 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 Standard 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/ extend 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 Standard General Conditions of Contract.

Period of Work under consideration will mean as under:

- i. In the case of first Bill the period from the month of signing of agreement to the month of measurement of the first bill.
- ii. In the case of second and subsequent interim payment certificate and Final bills, the Period from the month of measurement for previous bill to the month of measurement of that bill.
- iii. As per provisions of contract (Clause 37.3/PCC) interim payments certificates are to be submitted by the contractor on monthly basis for the works/supply of items pertaining to a particular month. However, in case a bill is submitted for a period pertaining to more than a calendar month the average indices for those months and previous month(s) shall be used for calculation purpose.

Responsibility of arranging the RBI indices /Economic advisor indices/Labour Bulletins desired by the Employer or the Engineer shall rest with the Contractor.

(B) Procedure in case of Delay in Availability of Final RBI Indices/ Economic advisor indices

Where the final Price Indices are not available in the Economic advisor, while making payment towards interim payment certificate, payment towards Price Variation will be made on provisional basis based on the indices available, to be adjusted in subsequent bills as and when the final Indices figures become available.

(C) Adjustment on Account of Price Variation

Adjustment on account of Price Variations may be positive (in which case extra amount shall be paid to the Contractor), or negative (in which case the amount of Price Variation shall be recovered from the Contractor). Adjustment on account of Price Variation shall be calculated separately, for each period, between two successive dates of

measurements for bills and paid along with each bill as claimed by the contractor.

After verifying the bill, the Engineer shall certify the adjustment amount and advise the same to the Employer along with the interim payment certificate. Should any extra amount be due to Contractor, the Employer shall pay the same. Any amount due from Contractor on account of negative adjustment shall be recovered from his pending or other bills at the earliest.

The above adjustment on account of Price Variation payment shall be made to the contractor in accordance with the proportion stipulated in Schedule of Payment Currencies by using exchange rate on the last day of the period to which a particular interim payment certificate is related as per the website of Reserve Bank of India (RBI). In case the exchange rate on the above date, is not available in this web site, it will be as per the web site of Financial Benchmark India Private Limited (FBIL) as recommended by RBI.

In case the exchange rate of particular currency is not available on the above date in both these websites then the exchange rate as per the website of the Central Bank of that country to which this currency belongs will be adopted. In case the exchange rate of that currency is not directly available in INR on that website then the currency will be first converted to USD as per the exchange rate between that foreign currency and US Dollar on that web site and then converted from USD to INR as per RBI or FBIL exchange rate between US Dollar and INR, as prevailing on the said date.

(D) Limit of Price Adjustment

Provided that, in determining all such price adjustment in accordance with the aforesaid Sub-Clauses:

- a. No account will be taken of any amount by which any cost incurred by the Contractor has been increased by default or negligence of the Contractor.
- b. If the Contractor fails to complete the work within time for completion prescribed under Clause 26.4 the adjustment of prices thereafter until the completion of the works shall be made using either the indices or prices, whichever is more favourable to the Employer, provided that if an extension of time is granted pursuant to Sub-Clause 26.5/PCC, the above position shall apply to the adjustments made after expiry of such extension of time.

(E) Price Variation during extended period of completion

The price adjustment as worked out above i.e., either increase or decrease will be applicable up to the stipulated Completion Date of the Works, including the extended period of completion where such extension has been granted under Sub-Clause 26.5/PCC and where such an extension has been granted, the price adjustment will be due as follows:

- a. In a. In case the indices increase above the indices applicable to a bill made on the last date of original completion period or the extended period under Sub-Clause 26.5/PCC, the price adjustment for the period of extension granted in accordance with Sub-Clause 26.5/PCC will be limited to the amount payable as per the indices

	<p>applicable to a statement made on the last date of the original completion period or the extended period as the case may be.</p> <p>In case the indices fall below the indices applicable to a statement made on the last date of the original or extended period of completion, then the lower indices will be adopted for Price Adjustment for the period of extension</p>
New Clause-1.1	<p>Assignment</p> <p>Neither Party shall assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, either Party:</p> <ol style="list-style-type: none"> i. may assign the whole or any part with the prior agreement of the other Party, at the sole discretion of such other Party, and ii. may, as security in favour of a bank or financial institution, assign its right to any moneys due, or to become due, under the Contract.
New Clause -1.2	<p>Care and Supply of Documents</p> <p>The Specification and Drawings shall be in the custody and care of the Employer. Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawing shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.</p> <p>Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Employer. Unless otherwise stated in the Contract, the Contractor shall supply to the Engineer six copies of each of the Contractor's Documents.</p> <p>The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract. The Employer's Personnel shall have the right of access to all these documents at all reasonable times.</p> <p>If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.</p>
New Clause-1.3	<p>Delayed Drawings or Instructions</p> <p>The Contractor shall give notice to the Engineer whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and details of the nature and amount of the delay or disruption likely to be suffered if it is late. If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Engineer to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Clause 4.1/SCC of contract conditions [Contractor's Claims] to:</p> <ol style="list-style-type: none"> (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 26.5/PCC [Extension of Time for Completion], and (b) payment of any such Cost, which shall be included in the Contract Price. <p>After receiving this further notice, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine these matters.</p>

	<p>However, if and to the extent that the Engineer's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.</p>
New Clause-1.4	<p>Employer's Use of Contractor's Documents</p> <p>As between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.</p> <p>The Contractor shall be deemed (by signing the Contract) to give to the Employer a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This licence shall:</p> <ul style="list-style-type: none"> (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works, (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and (c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor. <p>The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Employer for purposes other than those permitted under this Sub-Clause.</p>
New Clause-1.5	<p>Contractor's Use of Employer's Documents</p> <p>As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Employer. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.</p>
New Clause-1.6	<p>Confidential Details</p> <p>The Contractor shall disclose all such confidential and other information as the Engineer may reasonably require in order to verify the Contractor's compliance with the Contract.</p> <p>The Contractor shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out the Contractor's obligations under the Contract or to comply with applicable Laws. The Contractor shall not publish or disclose any particulars of the Works without the previous agreement of the Employer. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.</p>
New Clause-1.7	<p>Compliance with Laws</p> <p>The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Special Conditions of Contract:</p>

	<p>(a) the Employer shall have obtained (or shall obtain) the planning, zoning or similar permission for the Permanent Works, and any other permissions described in the Specification as having been (or being) obtained by the Employer; and the Employer shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and</p> <p>(b) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Employer harmless against and from the consequences of any failure to do so.</p>
New Clause-1.8	<p>Joint Venture - Joint and Several Liability</p> <p>If the Contractor constitutes (under applicable Laws) a Joint Venture of two or more persons/firms:</p> <p>(a) these persons shall be deemed to be jointly and severally liable to the Employer for the performance of the Contract;</p> <p>(b) these persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and</p> <p>(c) the Contractor shall not alter its composition or legal status without the prior consent of the Employer.</p> <p>(d) In the event of default by any partner of Joint Venture, on or after achieving 25% of the financial progress (excluding advance if any) the lead partner or remaining partner(s), in case the defaulting partner is the lead partner, shall notify the Employer within twenty eight (28) days of the occurrence and within Fifty six (56) days of the said notification, the lead partner or remaining partner(s), who are not the defaulting partner, shall assign the works of the defaulting partner, to equally competent party with prior consent of the Employer. For this purpose the term “equally competent party” shall mean as under:</p> <p>“The new JV partner replacing the defaulting partner should meet the EQC requirement of package/combination of packages which was met by the defaulting partner on the basis of which the original tender was awarded.”</p> <p>The replacement of any defaulting partner, with the new partner shall be subject to the condition that the new partner has to submit additional performance security equal to 10% of balance cost of work of the JV partner being replaced. The performance security submitted by the defaulting partner shall also continue with K-RIDE till satisfactory completion of the work.</p> <p>(e) Notwithstanding the consent of the Employer for change in composition or legal status of the Joint Venture the partners shall continue to be jointly and severally liable to the Employer.</p> <p>(f) The Joint Venture shall enter into a Joint Venture Agreement incorporating the provisions of sub-paras (a) to (e) based upon the form annexed to the Conditions of Contract. The JV agreement shall indicate precisely the specific role of all members of the JV in respect of planning, design, construction equipment, key personnel, work execution, and financing of the project. The authority to sign the JV Agreement shall be evidenced by approved legal instruments.</p>

	Notwithstanding the contents of the sub-clauses above, if the performance of any JV partner is not found satisfactory by the Employer, in respect of the responsibilities assigned to him as per JV agreement which is a part of this agreement, the Employer may issue notice of such default to the said JV partner or the JV (depending upon reasons of default) and declare the said JV partner or the JV as Poor Performer. The issue of such notice shall automatically debar the JV partner or JV as the case may be from participating in any K-RIDE tender from the date of issue of notice of default.
New Clause-1.9	Inspections by the Employer The Contractor shall permit the Employer and/or persons appointed by the Employer to inspect the Site and/or the Contractor's records relating to the performance of the Contract.
New Clause-1.10	Bidder's Credentials: The bidder shall submit an affidavit on a stamp paper to the effect that all the documents submitted by her along with her bid are true. This shall be mandatory all bids. The bid shall be summarily rejected if the bidder fails to submit this undertaking along with the bid. After opening the financial bid, the tender committee shall verify the credentials of the bidder who is declared as the lowest bidder (L1) for their authenticity. In case the credentials of L1 are not found to be in order, The bid shall be treated as technically unresponsive and thus invalid. The process shall be repeated for the next higher bidder till the valid L1 is established. If any document (or copy thereof) submitted by a bidder is found to be false/forged: a) The bidder/each partner/member of the bidding firm shall be liable to legal actions apart from punitive actions, as decided by competent authority of K-RIDE. In such an eventuality. The bid shall also be summarily rejected. b) If the contract has already been awarded, or Letter of Acceptance (LoA) has been issued and in the event of any failure to comply with the above, the contract shall be terminated, irrespective of the stage of progress in execution of the work. In such an eventuality, Security Deposit (SD), performance Guarantee (PG) and partial/full payments otherwise due to the contractor, in respect of the partial/full work executed by the contractor, shall be forfeited by the K-RIDE. c) Other punitive actions, like banning the bidder and partners/members of the bidding firm for future dealings with K-RIDE/Government of India/ Government of Karnataka may also be taken.
	2. THE EMPLOYER
New Clause-2.1	Permits, Licenses or Approvals The Employer shall (where he is in a position to do so) provide reasonable assistance to the Contractor at the request of the Contractor: (a) by obtaining copies of the Laws of the Country which are relevant to the Contract but are not readily available, and (b) for the Contractor's applications for any permits, licences or approvals required by the Laws of the Country: (i) which the Contractor is required to obtain under New-Clause 1.7/PCC [Compliance with Laws], (ii) for the delivery of Goods, including clearance through customs, and

	(iii) for the export of Contractor's Equipment when it is removed from the Site.
New Clause -2.2	<p>Employer's Personnel</p> <p>The Employer shall be responsible for ensuring that the Employer's Personnel and the Employer's other contractors on the Site:</p> <p>(a) co-operate with the Contractor's efforts under New-Clause 4.24/PCC [Co-operation], and</p> <p>(b) take actions similar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) of New-Clause 4.26/PCC [Safety Procedures] and under New-Clause 4.36/PCC [Protection of the Environment].</p>
New Clause-2.3	<p>Employer's Financial Arrangements</p> <p>The Employer has sourced the funds to finance the project</p> <p>Assignment by the Employer</p> <p>The Employer shall be fully entitled without the consent of the Contractor, to assign the benefit of the Contract or any part thereof and any interest therein or there under to any third party.</p>
New Clause-2.4	<p>Employer's Claims</p> <p>If the Employer considers himself to be entitled to any payment under any Clause of these Conditions or otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Employer or the Engineer shall give notice and particulars to the Contractor. However, notice is not required for payments due under New-Clause 4.37/PCC [Electricity, Water and Gas], under New-Clause 4.38/PCC [Employer's Equipment and Free-Issue Material], or for other services requested by the Contractor.</p> <p>The notice shall be given as soon as practicable after the Employer became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.</p> <p>The particulars shall specify the Clause or other basis of the claim, and shall include substantiation of the amount and/or extension to which the Employer considers himself to be entitled in connection with the Contract. The Engineer shall then proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine (i) the amount (if any) which the Employer is entitled to be paid by the Contractor, and/or (ii) the extension (if any) of the Defects Notification Period in accordance with New-Clause 6.3/[PCC Extension of Defects Notification Period].</p> <p>This amount may be included as a deduction in the Contract Price and Payment Certificates. The Employer shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.</p>
	3.THE ENGINEER
New Clause-3.1	<p>Engineer's Duties and Authority</p> <p>The Employer shall appoint the Engineer who shall carry out the duties assigned to him in the Contract. The Engineer's staff shall include suitably qualified engineers and other professionals who are competent to carry out these duties.</p> <p>The Engineer shall have no authority to amend the Contract.</p>

	<p>The Engineer may exercise the authority attributable to the Engineer as specified in or necessarily to be implied from the Contract.</p> <p>However, the Engineer shall obtain the specific approval of the Employer before taking action under the following Sub-Clauses of these Conditions:</p> <ul style="list-style-type: none"> a) New-Clause 4.30/PCC [Unforeseeable Physical Conditions] Agreeing or determining an extension of time and/or additional cost. b) Sub-Clause 26.5/PCC [Extension of Time for Completion] Agreeing or determining extension of time. c) New-Clause 6.9/PCC [Performance Certificate] Issue of Performance Certificate. d) Sub-Clause 34. Except, <ul style="list-style-type: none"> i) in an emergency situation as determined by the Engineer and as amplified in sub-paras (h) and (i) below, or ii) DELETED e) Sub-Clause 34.3 -Variation Procedure: Approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 34.1 or 34.2. f) Sub-Clause 34.4 -Payment in applicable Currencies: Specifying the amount payable in each of the applicable currencies for a Variation. g) Clause 4.1/SCC: Contractor Claims for extension of time and/or additional payment. h) DELETED i) DELETED <p>Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 34/PCC and shall notify the Contractor accordingly, with a copy to the Employer.</p> <ul style="list-style-type: none"> i) In case the emergency mentioned in above Sub-paras occurs on account of failure of Contractor, by way of not adhering to the approved scheme of work or not taking adequate safety precautions or by any other reason attributable to the contractor, then no additional amounts shall be paid to the Contractor for attending to such emergencies and the Contractor shall be liable for Employer's claims. j) Clause 7/PCC regarding deployment of Sub-Contractors.
New Clause-3.2	<p>Delegation by the Engineer</p> <p>The Engineer may from time to time assign duties and delegate authority to assistants, and may also revoke such assignment or delegation. These assistants may include a resident engineer, and/or independent inspectors appointed to inspect and/or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties.</p>

	<p>However, unless otherwise agreed by both Parties, the Engineer shall not delegate the authority to determine any matter in accordance with New-Clause 3.5/PCC [Determinations].</p> <p>Assistants shall be suitably qualified persons, who are competent to carry out these duties and exercise this authority, and who are fluent in the language for communications defined in Sub-Clause 3/CC [Law and Language].</p> <p>Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorised to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer. However:</p> <ul style="list-style-type: none"> (a) any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Engineer to reject the work, Plant or Materials; (b) if the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Engineer, who shall promptly confirm, reverse or vary the determination or instruction.
<p>New Clause-3.3</p>	<p>Instructions of the Engineer</p> <p>The Engineer may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under this Clause. If an instruction constitutes a Variation, Clause34/PCC [Variations and Adjustments] shall apply.</p> <p>The Contractor shall comply with the instructions given by the Engineer or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Engineer or a delegated assistant,</p> <ul style="list-style-type: none"> (a) gives an oral instruction and (b) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and (c) does not reply by issuing a written rejection and/or instruction within two working days after receiving the confirmation, (d) then the confirmation shall constitute the written instruction of the Engineer or delegated assistant (as the case may be).
<p>New Clause-3.4</p>	<p>Replacement of the Engineer</p> <p>Notwithstanding New-Clause 3.1/PCC, if the Employer intends to replace the Engineer, the Employer shall, not less than 21 days before the intended date of replacement, give notice to the Contractor of the name, address and relevant experience of the replacement Engineer.</p>
<p>New Clause-3.5</p>	<p>Determinations</p> <p>Whenever these Conditions provide that the Engineer shall proceed in accordance with this New-Clause 3.5/PCC to agree or determine any matter, the Engineer shall consult with each Party in an endeavour to reach agreement. If agreement is not achieved, the Engineer shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.</p>

	<p>The Engineer shall give notice to both Parties of each agreement or determination, with supporting particulars. Each Party shall give effect to each agreement or determination unless and until revised under Clause 4/SCC [Claims, Disputes and Arbitration].</p>
	<p>4.THE CONTRACTOR</p>
<p>New Clause-4.1</p>	<p>Contractor's General Obligations</p> <p>The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Engineer's instructions, and shall remedy any defects in the Works.</p> <p>The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.</p> <p>All equipment, and material, to be incorporated in or required for the Works shall be procured from approved sources as stipulated in the Contract.</p> <ol style="list-style-type: none"> i. All plants / equipment to be deployed on the work shall carry designated authority certificate. Where not specified, it shall have third party safety certificate for the safe working of the equipment and shall be renewed after every 3 months. This certificate shall be produced to the Engineer as and when required. ii. All the construction plant shall be provided with the experienced operators having valid license issued by the competent authority. iii. Any material or equipment not meeting the approval of the Engineer shall be removed from the site immediately. iv. All Contractor's Equipment and Temporary Works provided by the Contractor shall, when brought on to the site, be deemed to be exclusively intended for execution of the Works and not be removed without the consent in writing of the Engineer. Such consent shall not be unreasonably withheld or delayed. <p>The Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractors' Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the design or specification of the Permanent Works.</p> <p>The Contractor shall throughout the execution of the Works including the carrying out of any testing, commissioning or remedying of any defect:</p> <ol style="list-style-type: none"> i. provides and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or required by the Engineer or by laws or by any relevant authority

	<p>for the protection of the Works and for the safety and convenience of the public and all persons on or in the vicinity of the Site; and</p> <p>ii. Contractor is required to take note of all the necessary provisions in Employer's Safety, Health and Environment Manual (SHE Manual) and the Contractor's price shall be inclusive of all the necessary costs to meet the prescribed safety standards as specified in the Special Conditions of Contract. In the case, the Contractor fails in the above; the Employer may provide the necessary arrangements and recover the costs from the Contractor</p>
New Clause-4.2	<p>Tools, Plants and Equipment Supplied by the Employer</p> <p>i. Except for any specific item mentioned in the Special Conditions of Contract or in Employer's Requirements, the Contractor shall provide all tools, plants and Equipment for the Works. In respect of such exceptional tools, plants or Equipment committed to be provided by the Employer under terms and conditions specified in the Special Conditions of Contract, the Contractor shall take all reasonable care and shall be responsible for all damages or loss caused by him, his representatives, sub-contractors or his workmen or others while they are in his charge.</p> <p>ii. No tools, plant and equipment shall be supplied by the Employer. Unless specifically incorporated in special conditions, the Contractor has to arrange all tools, plant, equipment required for the work.</p> <p>iii. On completion of the Works, the Contractor shall hand over the unused balance of the tools, plants and Equipment supplied by the Employer to the Employer back in good order and repair, fair wear and tear expected, and shall be responsible for any failure to account for the same or any damage done thereto.</p> <p>iv. The decision of the Engineer as to the amount recoverable from the Contractor on this account shall be final and binding.</p>
New Clause-4.3	<p>Employer's Materials</p> <p>Except for items mentioned in the Special Conditions of Contract, the Contractor shall provide all materials for the Works. Material if any, to be provided by Employer will be done only in a phased manner as per pre-approved program, against a Bank Guarantee for the value of the Material and at terms and conditions for issue, upkeep, usage, return and recovery of such Materials as specified in Special Conditions of Contract.</p>
New Clause-4.4	<p>Sheds, Stores, Yards</p> <p>It shall be the responsibility of the Contractor to provide at his own expense the required sheds, store houses, and yards for both Permanent and Temporary Works and provide free access to the Engineer and the Engineer's Representative who will have right of inspection including that of instructing the Contractor to remove a particular material from the stores and not to use the same on the Works.</p>
New Clause-4.5	<p>Temporary Works</p> <p>The Contractor's proposals for erection of all ancillary and temporary works shall be in conformity with the proposals submitted along with the Tender and modifications thereto as approved by Engineer.</p> <p>The Contractor shall submit drawings, supporting design calculations of Temporary works, where called for by the Engineer and other relevant details of all such works to the Engineer for approval at least one month before he desires to commence such works. Approval by the Engineer of any such proposal shall not relieve the Contractor of his responsibility for sufficiency of such works.</p> <p>All temporary works necessary for the proper execution of the Works shall be provided and maintained by the Contractor at his cost (unless otherwise provided in tender document) and</p>

	subject to the consent of the Engineer shall be removed by Contractor at his own expense when they are no longer required and in such manner as the Engineer shall direct. In case the Contractor fails to remove the temporary works on completion the Engineer is authorized to get the same removed and recover the cost thereof from the Contractor.
New Clause-4.6	<p>Access for Engineer</p> <p>The Contractor shall allow at all times the Engineer or the Engineer's assistant or any other person authorised by the Engineer access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured, fabricated and/or assembled for the Works. The Contractor shall ensure that sub contracts if any shall contain provisions entitling the Engineer or any person authorised by him to have such access.</p>
New Clause-4.7	<p>Access Road and Way Leave</p> <ol style="list-style-type: none"> I. Providing access roads/ way leaves to the site will be Contractor's responsibility. II. The Contractor shall pay the statutory vehicle license and permit fees for use of public roads. The Contractor's heavy construction or tracked equipment shall not travel on any public road or bridge, unless the Contractor has made arrangements with the authority concerned and has obtained the approval of the Engineer to such arrangements. III. The Contractor shall repair any damage to the road or bear the cost thereof due to movement of contractor's plants and equipment, vehicles etc. to the specifications and satisfaction of road authorities as well as of Engineer. IV. The Contractor shall plan transportation of construction materials to work site in accordance with traffic regulations enforced by local traffic authorities from time to time and in such a way that congestion on the roads and road accidents are avoided. The Contractor should study this aspect thoroughly before quoting for the work.
New Clause-4.8	<p>Contractor to keep Site Clear</p> <ol style="list-style-type: none"> i. During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction, and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required. ii. On completion of the works, the Contractor shall clear away and remove from site all Constructional Plant, surplus material and Temporary Works. He should leave the whole of the site and Works in a clean, tidy and workman like condition to the satisfaction of the Engineer. iii. On completion of Work the Contractor shall also clear away the labour camps, hutments and other related installations and restore the land to its original condition to the satisfaction of the Engineer within 45 days of the physical completion of Work. The cost on account of delay in return of land and reinstatement of original condition within the stipulated time as determined by Engineer will be recovered from the Contractor's dues. iv. All garbage shall be removed from site daily or as they accumulate. All surface and sub-soil drains shall be maintained in a clean, sound and satisfactory state of performance. No extra payment shall be made on this account. v. No final payment in settlement of the accounts for Works shall be made till, in addition to any other condition necessary for such final payment, site clearance and clearances of labour camps etc. shall have been effected by him. Such clearance may be made by the Engineer through any other agency at the expense of the Contractor in the event of the Contractor's failure to comply with this provision within 7 days after receiving notice to that effect from the Engineer. All expenses on such removal / clearance shall be debit able to the Contractor as loans due from the Contractor to the Employer, and the Employer shall

	be competent to recover the same from Contractor's on-account or final bills, or from Performance Security amount or from any other amount payable to the Contractor in any other Contract.
New Clause-4.9	<p>Security of the Site</p> <ol style="list-style-type: none"> I. The Contractor shall take all measures necessary to ensure security, including exercising control over all persons and vehicles which are employed or engaged on the Site or in connection with the Works or the other works comprising the Project and with the security arrangements applicable to any other site within the Project. II. The Contractor shall arrange the issue of passes for the admission of all persons and vehicles to the Site or to any part thereof and may refuse admission to or remove from the Site any person or vehicle failing to show an appropriate pass on demand to any duly authorized person. III. If required by the Engineer, the Contractor shall submit a list identifying all persons to whom passes have been issued together with two photographs of each person and all entities to which a pass has been issued in respect of any vehicle and shall satisfy the Engineer of the bonafides of any such person or entity. IV. The Contractor shall not, without the written permission of the Engineer or otherwise in accordance with the Contract, allow access to the Site to any person unless the presence on Site of such person is necessary in connection with the execution of the Works or with the discharge of the duties of any relevant authority. V. The Contractor shall be wholly responsible for security of site and Works. The Contractor shall follow relevant Safety and Security instructions issued by the concerned Authorities from time to time and shall work in close coordination with the concerned Authorities.
New Clause-4.10	<p>Contractor's Operations on Site</p> <ol style="list-style-type: none"> I. The Contractor shall confine his operations to the Site, and to any additional area which may be provided to the Contractor and agreed by the Engineer as working areas. The Contractor shall take all necessary precautions to keep his personnel and equipment within the Site and such additional areas, and to keep and prohibit them from encroaching on adjacent land. II. The Contractor, after obtaining any necessary consent from any relevant authority, shall submit to the Engineer proposals showing the layout of pedestrian routes, lighting, signs, and guarding any road opening or traffic diversion which may be required in connection with the execution of the Works and which the Contractor intends to construct. Any consent given by the Engineer to such proposals shall not relieve the Contractor of any obligation under the Contract or absolve the Contractor from any liability for or arising from such proposals or the implementation thereof. III. All lights provided by the Contractor shall be so placed or screened as not to interfere with signs, signals or lights. The Contractor shall not in any way obscure or affect signs, signals or lights, in use by any relevant authority. In the event that the Contractor does so, the Contractor shall pay all costs associated with the re-fitting, re-instating or provision of alternatives for any sign, signal or light, obscured or affected. IV. For the purposes of this Clause only, "Site" shall include off-Site places of manufacture or storage and the Contractor's Work Areas and shall include, areas provided to the Contractor by others.
New Clause-4.11	<p>Publicity</p> <p>The Contractor shall not publish or otherwise circulate alone or in conjunction with any other person, any articles, photographs or other materials relating to the Contract, the Site, the Works, the Project or any part thereof, nor impart to the press, or any radio or television network any</p>

	<p>information relating thereto, nor allow any representative of the media access to the Site, Contractor's Works Areas, or off-Site place of manufacture, or storage except with the permission, in writing, of the Employer. The Contractor shall ensure that his sub-contractors of any tier shall be bound by a like obligation and shall, if so required by the Employer, enforce the same at his own expense. The provisions of this Sub-Clause shall not exempt the Contractor from complying with any statutory provision in regard to the taking and publication of photographs.</p>
New Clause-4.12	<p>Disclosure of Relationship</p> <p>If the Contractor or any partner of the Contractor or Director of the Contractor's company is closely related to any of the Officers of the Employer or the Engineer, or alternatively, if any close relative of an officer of the Employer or the Engineer has financial interest / stake in the Contractor's firm, the same shall be disclosed by the Contractor at the time of filing his tender. Any failure to disclose the interest involved, shall entitle the Employer to rescind the Contract, without payment of any compensation to the Contractor. The Contractor shall note that he is prohibited from developing such interest during the Contract period.</p>
New Clause-4.13	<p>Use Of Explosives</p> <p>Explosives if required on the Work shall be used by Contractor only with prior Approval of the Engineer and in the manner and to the extent permitted by him. The explosives shall be handled, stored in a special magazine to be provided at the cost of the Contractor and used under the strict supervision of persons licensed for this purpose under the requisite statutory rules and regulations. The Contractor shall take all precautions in transporting and using the explosives and avoid damage to nearby structures and utilities. The Contractor shall be responsible for taking all the precautions in the usage of the explosives at Contractor's cost, sole risk and responsibility. The Contractor shall hold the Employer harmless and indemnify for the above.</p>
New Clause-4.14	<p>In pursuance with this policy, the Employer</p> <p>a. Will reject the Tender for the Work or rescind the Contract, if the Employer determines that the Tenderer/Contractor has engaged in corrupt or fraudulent practices.</p> <p>b. Will declare a Tenderer/Contractor ineligible, either indefinitely or for a minimum period of 2 years from the date of identification of such prohibited conduct, to be awarded a Contract/s if the Employer at any time determines that the Contractor has engaged in corrupt or fraudulent practices in competing for, or in executing the Contract.</p>
New Clause-4.15	<p>Compensation to Contractor on rescission of Contract under this clause</p> <p>In the event of rescission of Contract, the Contractor shall not be entitled to any compensation whatsoever, except for the work done up to the date of rescission.</p>
New Clause-4.16	<p>Quality Assurance</p> <p>Unless otherwise stated in Special Conditions of Contract and/or Employer's Requirement, the Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. Such system shall be in accordance with the details stated in the Contract. Compliance with the quality assurance system shall not relieve the Contractor of his duties, obligations or responsibilities.</p> <p>Details of all procedure and compliance documents shall be submitted to the Engineer for his consent before each execution stage is commenced</p>
New Clause-4.17	<p>Work by Persons Other than Contactor</p> <p>I. If the Contractor shall fail to carry out any work required under the Contract or refuse to comply with any instruction or order given by the Engineer in accordance with the Contract within a reasonable time, the Engineer may give the Contractor 14 days' notice in writing to carry out such work or comply with such instruction.</p>

	<p>II. If the Contractor fails to comply with such notice, the Employer shall be entitled to carry out such work or instruction by his own workmen or by other contractors in whatever manner the Engineer decides, be it single Tender or limited Tender or open Tender or on entrustment basis without any right of appeal by the contractor.</p> <p>III. However, in case of emergencies/urgencies/affecting safety the period of 14 days' notice shall be 24hours notice in writing. The Classification of work as emergencies/urgencies/affecting safety is the prerogative of Engineer and his decision is final and binding on the contractor. Without prejudice to any other right or remedy, all additional expenditure properly incurred by the Employer in having such work or instruction carried out shall be recoverable by the Employer from the Contractor.</p> <p>IV. If by reason of any accident or failure or other event occurring to, in, or in connection with the Works any remedial or other work shall, in the opinion of the Engineer, be urgently necessary and the Contractor is unable or unwilling at once to do such remedial or other work, the Engineer may authorize the carrying out of such remedial or other work by a person other than the Contractor.</p> <p>V. If the remedial or other work so authorized by the Engineer is work, which, in the Engineer's opinion, the Contractor was liable to do under the Contract; all expenses properly incurred in carrying out the same shall be recoverable by the Employer from the Contractor. Provided that the Engineer shall, as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof in writing.</p>
<p>New Clause-4.18</p>	<p>Confidentiality of Information</p> <p>I. The Contractor shall not use or divulge, except for the purpose of the Contract or with the written permission of the Employer, any information relating to the Works or the Project provided in the Contract or otherwise provided by the Employer, or the Engineer. The Contractor shall ensure that his sub-contractors of any tier shall be bound by a like confidentiality undertaking.</p> <p>II. The Employer, Engineer and any third party to whom an assignment has been made in accordance with New-clause 2.3/PCC may use any information provided by the Contractor in accordance with the Contract. The Employer shall use reasonable endeavours to ensure that the Engineer and any third party referred to in aforesaid New-clause 2.3/PCC shall not; divulge such information except for any purpose connected with the Contract.</p> <p>On completion of the works, the contractor shall arrange to furnish to the Employer two (2) bound sets of all "As Built" drawings for every component of the Works at his own cost, all such copies being on Polyester film of quality to be approved by the Engineer or his Representative. The Taking – over Certificate of the Works, as per the provisions of Clause 46.1/PCC herein, shall not be issued by the Engineer in the event of the Contractor's failure to furnish the aforesaid "As Built" drawings for the entire works.</p> <p>If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Special Conditions of Contract:</p> <p>(a) the Contractor shall submit to the Engineer the Contractor's Documents for this part in accordance with the procedures specified in the Contract;</p> <p>(b) these Contractor's Documents shall be in accordance with the Specification and Drawings, shall be written in the language for communications defined in Sub-</p>

	<p>Clause 3/CC [Law and Language], and shall include additional information required by the Engineer to add to the Drawings for co-ordination of each Party's designs;</p> <p>(c) the Contractor shall be responsible for this part and it shall, when the Works are completed, be fit for such purposes for which the part is intended as are specified in the Contract; and</p> <p>(d) prior to the commencement of the Tests on Completion, the Contractor shall submit to the Engineer the "as-built" documents and operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of taking-over under Sub-Clause 46.1/PCC [Taking Over of the Works and Sections] until these documents and manuals have been submitted to the Engineer.</p>
New Clause-4.19	<p>Performance Security</p> <p>The Contractor shall obtain (at his cost) a Performance Security and an additional Performance Security, if any in terms of ITB 35.5, for proper performance of the contract, for the amount, currencies and validity period for Performance Security stated in the Contract Data. If an amount is not stated in the Contract Data, this Sub-Clause shall not apply.</p> <p>The Contractor shall deliver the Performance Security and additional Performance Security, if any, to the Employer within 28 days after receiving the Letter of Acceptance, and shall send a copy to the Engineer. The Performance Security/additional Performance Security shall be issued by an entity and from within a country (or other jurisdiction) approved by the Employer and shall be in the form as given in Section 10 (Formats) or in another form specifically approved by the Employer.</p> <p>The procedure for obtaining Performance Guarantee is outlined below:</p> <p>The successful bidder shall have to submit a Performance Guarantee (PG) within 28 (Twenty-eight) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 28 (Twenty-eight) days and upto 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 28(Twenty-eight) days, i.e. from 29th day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day.</p> <p>In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit Earnest Money Deposit and other dues payable against that contract. In case a tenderer has not submitted Earnest Money Deposit on the strength of their registration as a Startup recognized by Department for promotion of industry and internal trade (DPIIT) under Ministry of Commerce and Industry, DPIIT shall be informed to this effect. The failed Contractor shall be debarred from participating in re-tender for that work.</p> <p>The Performance Security/additional Performance Security shall be, at the Contractor's option, in any of the following forms:</p> <p>(i) An unconditional Bank Guarantee in the prescribed format</p>

- (ii) A Pay Order / Demand Draft drawn on a Scheduled / Nationalized Bank in India in favour of "Rail Infrastructure Development Company (Karnataka) Ltd" payable at Bangalore.
- (iii) FDR in favour of "Rail Infrastructure Development Company (Karnataka) Ltd." (free from any encumbrance).
- (iv) A online bank transfer to K-RIDE account.

The Bank Guarantee shall be from a bank having minimum net-worth of over INR 500 million from the specified banks as under:

- (i) a Schedule Bank in India, or
- (ii) a Foreign Bank having their operations in India, or
- (iii) a Foreign Bank which does not have operations in India is required to provide a counter-guarantee by State Bank of India,

The Scheduled Bank is suing the Bank Guarantee must be on "Structured Financial Messaging System (SFMS)" platform. A separate advice of the BG shall be invariably be sent by the issuing bank to the Employer's Bank through SFMS and only after this the BG shall become operative and acceptable to the Employer.

The Issuing Bank shall send the SFMS to:

Beneficiary: Rail Infrastructure Development Company (Karnataka) Ltd. (K-RIDE)Bank
 Name: Canara Bank
 Branch: Prime Corporate Branch
 Account No. 0430201012110
 IFSC Code: CNRB0002636

In case the contractor is a JV,"the Performance Security/additional Performance Security, if any in terms of ITB 35.5, shall be submitted by each JV Partner separately on behalf of the JV in favour of K-RIDE in proportion of their respective percentage share specified in the JV Agreement. The additional Performance Security shall be submitted by the partner(s) responsible for execution of schedule(s) (as per JV agreement) against which additional Performance Security is required to be submitted in terms of ITB 35.5.

However, Submission of Performance Guarantee Security by individual partners on behalf of the JV shall in no way dilute their Joint & Several responsibility. The Employer shall be entitled to recover the amount of Bank Guarantees individually and / or from all the Partners jointly at its discretion."

The Contractor shall ensure that the Performance Security/additional Performance Security is valid and enforceable until the Contractor has executed and completed the Works and remedied defects, if any. If the contractor does not complete the work for any reasons whatsoever, the terms of the Performance Security/ additional Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate by the date 28 days prior to the expiry date, the Contractor shall be bound to extend the validity of the Performance Security/additional Performance Security until the Works have been completed and any defects have been remedied.

Failure of the successful Tenderer to furnish the required Performance Security shall be a ground for the annulment of the award of Contract and execution of the Tender Securing Declaration.

Release of performance security

- i. The whole or such portion of the Performance Security amount shall be liable to be forfeited by the Employer at the discretion of the Employer, in the event of any breach of Contract on the part of the Contractor.
- ii. After completion of the entire Work, the Performance Security shall be released to the Contractor, on issue of last Taking Over Certificate if more than one Certificate exist, by the Engineer, the release of Performance Security shall not relieve the Contractor from his obligations and liabilities, to make good that may be detected during the Defects Liability Period.

The Guarantees shall be unconditional and irrevocable. The Employer shall return the Performance Security to the Contractor within 21 days after receiving a copy of the Performance Certificate or passing of the Final Payment Certificate whichever is later. However, on completion of specified section(s) and successful passage of defect liability period for such section(s) along with execution of any leftover works at the time of completion of such section(s), the contractor shall be entitled for release of 90% of the proportionate Performance Security calculated as specified in Contract Data subject to the condition that Engineer certifies that no recoveries are pending in the contract. In case Engineer points out amount to be recovered then the contractor shall be entitled for release of 90% of the proportionate Performance Security calculated as specified in Contract Data minus the amount to be recovered.

The Employer shall return additional Performance Security submitted in terms of ITB 35.5 as per the following;

- (a) If the Contractor submits an application stating that all the works against the particular schedule(s)/bill(s) for which additional Performance Security was submitted in terms of ITB 35.5 have been completed in all respect, then the Employer, on being satisfied with the claim of the Contractor, shall return the full additional Performance Security against the particular schedule(s). Decision of the Employer regarding completion of works against a particular schedule/bill shall be final and binding on the Contractor.
- (b) If the Contractor submits an application stating that majority of the works (physical progress being not less than 90%) against the particular schedule(s)/bill(s) for which additional Performance Security was submitted in terms of ITB 35.5 have been completed and execution of balance works is held up for reasons not attributable to the Contractor, then the Employer, on being satisfied with the claim of the Contractor, shall return 75% of the amount of additional Performance Security against the particular schedule(s). The balance amount of additional Performance Security shall however be returned only after completion of the works against the particular schedule(s)/bill(s) for which additional Performance Security was submitted in terms of ITB 35.5, in all respects to the satisfaction of the Employer. Decision of the Employer regarding completion of works against a particular schedule/bill shall be final and binding on the Contractor.

Without limitation to the provisions of the rest of this Sub-Clause, whenever the Engineer determines an addition or a reduction to the Contract Price as a result of a change in cost and/or legislation or as a result of a Variation amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor shall at the Engineer's request promptly submit Performance Guarantee @ 10% of the increased amount over the original contract price in a specific currency. On the other hand if the value of contract price decreases by more than 25% of the original contract price payable in a specific currency, Performance

	<p>Guarantee @ 10% of the decrease in contract price from the original contract price in a specific currency shall be returned to the contractor, on his request.</p> <p>Wherever the contract is terminated under Clause 49.7/PCC, the Performance Guarantee shall be encashed by the Employer:</p> <p>i) in full including additional Performance Guarantee amount, if any, taken in terms of clause 25.5 and 29 of ITT and not due for release on the date of issue of termination letter in terms of this clause, in case of termination of the contract as a whole; or</p> <p>ii) at the discretion of the Employer it may be encashed in part/parts proportionate to the Contract price of the bill/schedule to which the terminated part of work belongs i.e $P=(A \times B) \div C$ where P=Proportionate Bank Guarantee Amount. A=Contract price of the particular bill/schedule to which the terminated part of work belongs. B=Performance Guarantee amount in terms of CC New-clause 4.19/PCC C=Total Contract price.</p> <p>Plus additional performance Guarantee amount, if any, taken in terms of sub clause 25.5 and 29 of ITT and not due for release on the date of issue of termination letter in terms of this clause against this particular bill/schedule to which the terminated part of the work belongs, in case of termination in part/parts.</p> <p>The balance work should be got done separately, and independently by K-RIDE without risk and cost of the original contractor. The original contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a JV or a partnership firm, then every member/partner of such a firm would be debarred from participating in the tender for the balance work either in his/her individual capacity or as a partner of any other JV/partnership firm.</p> <p>In case the Contractor fails to perform the Contract or any JV partner fails to perform its obligations under the JV agreement, which is a part of this agreement, the Employer may issue notice of such default to the said JV partner or the JV (depending upon reasons of default) and declare the said JV partner or the JV as Poor Performer. The issue of such notice shall automatically debar the JV partner or JV, as the case may be, from participating in any K-RIDE tender from the date of issue of notice of default. The relevant performance security including additional performance security, if any, in terms of sub clauses 25.5 and 29 of ITT submitted by the Contractor or submitted on behalf of JV partner to the extent not due for release at the time of contemplation of such action shall be encashed and forfeited either fully or in proportion of the percentage share of that partner in the JV agreement, as the case may be.</p>
New Clause-4.20	<p>Security Deposit: The Security Deposit shall be 5% of the contract value. Security Deposit may be deposited by the Contractor before release of first on account bill in cash or Term Deposit Receipt issued from Scheduled Bank, or may be recovered at the rate defined in this section PCC, the bill amount till the full Security Deposit is recovered. Provided also that in case of defaulting Contractor, the Employer may retain any amount due for payment to the Contractor on the pending "on account bills" so that the amounts so retained (including amount guaranteed through Performance Security) may not exceed 10% of the total value of the contract. The security deposit may be recovered at the rate 6% of bill amount till the security deposit is recovered.</p>

	<p>Further, in case of contracts having value equal to or more than ₹ 50 crore (Rs Fifty crore) the Security Deposit may be deposited as Bank Guarantee Bond also, issued by a scheduled bank after execution of contract documents, but before payment of 1st on account bill. Provided further that the validity of Bank Guarantee Bond shall be extended from time to time, depending upon extension of contract granted in terms Clause No 26 of PCC.</p> <p>Further, in case Security Deposit has been submitted as Term Deposit Receipt/Bank Guarantee Bond in full amount, the Bid security by Contractor with his tender will be returned by K-RIDE.</p> <p>Note: After the work is physically completed as certified by competent authority, Security Deposit recovered from the running bills of a Contractor can be returned to him, if he so desires, in lieu of Term Deposit Receipt/irrevocable Bank Guarantee for equivalent amount from Scheduled Bank, to be submitted by him.</p> <p>4.2.b(i) Refund of Security Deposit: Security Deposit mentioned in clause above shall be returned to the Contractor along with or after, the following:</p> <ul style="list-style-type: none"> (a) Final Payment of the Contract and (b) Execution of Final Supplementary Agreement or Certification by Engineer that K-RIDE has No Claim on Contractor and (c) Maintenance Certificate issued, on expiry of the maintenance period. <p>4.2.b(ii) Forfeiture of Security Deposit: Whenever the contract is rescinded as a whole under clause 49 of CC/PCC, the Security Deposit already with K-RIDE under the contract shall be forfeited. However, in case the contract is rescinded in part or parts under clause 49 of CC/PCC, the Security Deposit shall not be forfeited.</p> <p>4.2.(c) No interest shall be payable upon the Bid Security and Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited in terms of New-Clause 4.19/PCC of this clause will be payable with interest accrued thereon.</p>
<p>New Clause -4.21</p>	<p>Contractor Representative:</p> <p>The Contractor shall depute his Representative to attend all the review meetings notified by the Engineer.</p> <p>Facilities for and Co-ordination with Others</p> <p>The Contractor shall not impede and shall afford all necessary facilities, access and/or services to the Employer, Engineer, Designated Contractors, utility undertakings, other relevant authorities and other contractors (whether employed by the Employer or not) who are carrying out on, or in the vicinity of, the Site, works not included in the Contract but forming part of the Project:</p> <p>A. The Contractor shall take all reasonable steps to ensure that the Works are co-ordinated and integrated with the Design, manufacture, installation execution and testing of such other works and shall in particular (but without limitation):</p> <ul style="list-style-type: none"> (i) comply with any direction which the Engineer may give for the integration of the Design with the design of any other part of the Project; (ii) consult, liaise and co-operate with those responsible for carrying out such other works, including where necessary, in the preparation of the respective designs, the

preparation of co-ordinated programmes, method statements, co-ordination drawings and specifications together with arrangements of service priorities and zoning;

- B. The Contractor shall undertake Design co-ordination with other contractors who are carrying out works forming part of the Project as described in the Employer's Requirements. At the end of each such co-ordination period, the Contractor and the other contractor with whose works the interface period refers shall jointly state in writing that their design co-ordination activities are complete and that their respective designs are integrated and can be finalised without interference with each other's designs or the designs with which their designs have already been integrated.

A copy of this joint written statement shall be provided to the Engineer within 7 days of the end of the said design co-ordination period. Unless and until copies of all relevant and necessary design co-ordination statements have been submitted to the Engineer, the Engineer shall be entitled to suspend any review or further review of the Contractor's or the other contractor's design submissions. Such suspension shall not be grounds for the Contractor to claim nor shall be entitled to receive an extension of time or additional payments.

- C. The Contractor shall share within the Site, staging, storage and unloading areas for the use of Designated Contractors, if any, who are undertaking civil work, fare collection system, supply, testing and commissioning of Rolling Stock, escalators, lifts, signalling and telecommunications and traction power installation works, etc. Separate locations shall be provided for each such contractor. The exact size and location of these staging, storage and unloading areas, and the commencement date shall be co-ordinated and agreed during the design interface period with each Designated Contractor.
- D. Any other contract which depends for its execution on the Contract or upon which the Contract is dependent for its own execution shall be identified by the Engineer as a "Designated Contract". The Contractor shall provide attendance on Designated Contractors in accordance with the Employer's Requirements and as instructed by the Engineer. The identity of the contractor for a Designated Contract may not be known before the execution of the Contract but this shall not be a ground for the Contractor to object to the subsequent appointment of a Designated Contractor
- E. The Contractor shall in accordance with the requirements of the Engineer co-ordinate his own Works with that of Designated Contractors through Co-ordinated Installation Programme (CIP) stated in the Employer's Requirements, or as the Engineer may require, and shall afford the Designated Contractors all reasonable opportunities for carrying out their works.
- F. The Contractor shall afford all reasonable opportunities, for carrying out their work, to other contractors employed by the Employer and their workmen respectively and the workmen of the Employer who may be engaged on or near the Site of any work, ancillary to the Works, but, not included in the Contract and shall not cause them inconvenience.
- G. If the Contractor shall suffer delay by reason of failure by any Designated Contractor to meet the specified installation interfacing and co-ordination, completion dates, which delay shall be caused otherwise than by fault of the Contractor, or, if compliance with sub-clause (f) herein shall involve the Contractor in delay beyond that which could be reasonably foreseen by an experienced contractor at the time of tender, then the Engineer shall take such delay into account in determining any extension of time to which the Contractor is entitled under the Contract.

	<p>H. It shall be the responsibility of the Contractor to ensure that the full extent of the Works under the Contract and the works to be carried out by Designated Contractors within the Works or, in, on, under, through and over the Site are co-ordinated and integrated in their design, manufacture, installation and construction. Such responsibility shall neither be mitigated nor in any other way affected by virtue of similar responsibilities being placed on other contractors.</p> <p>The Contractor shall be deemed to have made adequate allowance in the Contract Price and in the Works Programme in respect of these obligations.</p> <p>If any act or omission of the Contractor whether directly or indirectly results in the delay in the execution of the works of a Designated Contractor, the Contractor, in addition to his liability in respect of liquidated damages if they become due, shall pay to the Employer, or the Engineer may deduct from Interim Payment Certificates such amount as the Engineer shall have certified in respect of additional payments or costs to the Designated Contractor in respect of such delay.</p>
New Clause-4.22	DELETED
New Clause-4.23	DELETED
New Clause-4.24	<p>Co-operation</p> <p>The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:</p> <ul style="list-style-type: none"> (a) the Employer's Personnel, (b) any other contractors employed by the Employer, and (c) the personnel of any legally constituted public authorities, <p>who may be employed in the execution on or near the Site of any work not included in the Contract.</p> <p>Any such instruction shall constitute a Variation if and to the extent that it causes the Contractor to incur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.</p> <p>If, under the Contract, the Employer is required to give to the Contractor possession of any foundation, structure, plant or means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the Engineer in the time and manner stated in the Specification.</p>
New Clause-4.25	<p>Setting Out</p> <p>The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contract or notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the works, notifying the Engineer within 28 days of the date of commencement</p> <p>In the event of such discrepancy arising during the course of the work, for which Employer's documents are handed over after the date of commencement, the contractor shall seek clarifications within 14 days of receipt of such documents</p> <p>The Employer shall be responsible for any errors in these specified or notified items of reference, but the Contractor shall use reasonable efforts to verify their accuracy before they are used.</p> <p>Contractor shall promptly notify the Employer and the Engineer of any error, omission, fault, or any other defect in the design, drawing or specifications for the works, which he discovers when</p>

	<p>reviewing the Contract Documents, and in the process of execution of the Works. The Contractor shall be responsible to ensure correlation in various drawings and bill of quantities, before commencement and execution of work. In case of any discrepancy the Contractor shall bring it to notice of the Engineer for clarification within 28 days of the issue of Letter of Acceptance. In the event of such discrepancy arising during the course of the work, for which drawings are given after the date of issue of Letter of Acceptance, the Contractor shall seek clarifications within 14 days of receipt of such drawings.</p> <p>Notwithstanding with any other provision, the Contractor shall have to pay penalty for damage to Railway cable in terms of clause C 15 of the JPO as given in para 1.2 of Chapter 1. (Safety and Security) of Section 8 and shall also indemnify the Employer against any losses, damages to property or life in terms of para 1.11 and 1.12 of the chapter 1. (Safety and Security) of Section 8.</p>
<p>New Clause-4.26</p>	<p>Safety Procedures</p> <p>The Contractor shall follow the provisions laid down in Chapter 1. (Safety and Security) of Section 8 and shall:</p> <ol style="list-style-type: none"> (a) comply with all applicable safety regulations, (b) take care for the safety of all persons entitled to be on the Site, (c) use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons, (d) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 46/PCC [Employer's Taking Over], and (e) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land. <p>Additional Safety Precautions</p> <ol style="list-style-type: none"> (1) The Contractor shall comply with all the precautions as required for the safety of the workmen by the I.L.O Convention No.62 as far as they are applicable to the Contract. The Contractor shall provide all necessary safety appliances; such as safety goggles, helmets, masks, etc. to the workmen and the staff. (2) Suitable scaffolds shall be provided for workmen for all work that cannot safely be done from the ground, or from solid construction except for such short period work as can be done safely from ladders. When a ladder is used, an extra labourer shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable foot-holds and hand-holds shall be provided on the ladder, which shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal in 1 vertical). (3) Scaffolding or staging more than 3.25 metres above the ground or floor, swung or suspended from an overhead support or erected with stationary support, shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 metre high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as maybe necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying in from the support or structure. (4) Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally, and if the height of any platform or gangway or stairway is more than

3.25 metres above ground level or floor level, it shall have closely spaced boards, have adequate width and be suitably provided with guard rails as described in (3) above.

- (5) Every opening in the floor of a structure or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of one metre.
- (6) Safe means of access and egress shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 metres in length. The width between side rails in a rung ladder shall in no case be less than 30 cm for ladders up to and including 3 metres in length. For longer ladders the width shall be increased at least 6 mm for each additional 30 cm of length. Spacing of steps shall be uniform and shall not exceed 30 cm.
- (7) Adequate precautions shall be taken to prevent danger from electrical equipment. Adequate safety measures shall be taken when any work is undertaken near any live highly charged electric wire. Necessary shutdown may be arranged, where and whenever essential. All rules in force in this connection shall be fully complied with. The Contractor shall ensure all precautions to prevent any accidents due to electrocution or otherwise.
- (8) No materials on any of the sites shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Contractor shall provide all necessary fencing and lights to protect the public from accidents and shall be bound to bear the expenses of defending every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs which may be awarded in any such suit, action or proceedings to any such person or which may with the consent of the Contractor be paid to compromise any claim by any such person.
- (9) Excavation and Trenching : All trenches, 1.5 metres or more in depth, shall at all times be supplied with at least one ladder for each 20 metres in length or fraction thereof, Ladders shall be extended from the bottom of the trench to at least 1 metre above the surface of the ground. The sides of a trench, which is 1.5 metres or more in depth shall be stepped back to provide a suitable slope, or be securely held by timber bracing so as to avoid the danger of side collapse. Excavated material shall not be placed within 1.5 metres of the edge of any trench or half the depth of the trench, whichever is more. Excavation shall be made from the top to the bottom. Under no circumstances shall undermining or undercutting be done.
- (10) Demolition : Before any demolition work is commenced and also during the process of the work :
 - (a) All roads and open areas adjacent to the work site shall either be closed or suitably protected.
 - (b) No electric cable or apparatus, which is liable to be a source of danger other than a cable or apparatus used by operators, shall remain electrically charged:
 - (c) All practical steps shall be taken to prevent danger to persons employed by the Employer, from risk of fire or explosion, or flooding. No floor, roof or other part of a building shall be so overloaded with debris or materials as to render it unsafe.

	<p>(11) All necessary personal safety equipment as considered adequate by the Engineer shall be available for use of persons employed on the site and maintained in a condition suitable for immediate use; and the Contractor shall take adequate steps to ensure proper use of such equipment by those concerned.</p> <ul style="list-style-type: none"> (a) Workers employed on mixing asphaltic materials, cement, lime mortars, concrete etc. shall be provided with protective footwear and protective goggles. (b) Those engaged in handling any material, which is injurious to the eyes, shall be provided with protective goggles. (c) Those engaged in welding works shall be provided with welder's protective eye-shield. (d) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals. (e) When workers are employed in sewers and manhole, which are in use, the contractor shall ensure that manhole covers are open and manholes are ventilated at least for an hour before workers are allowed to go into them. Manholes so open shall be cordoned off with suitable railing and provide warning signals or boards to prevent accidents to the public. <p>(12) The Contractor shall not employ men below the age of 18 years and women, on the work of painting with products containing lead in any form. Whenever men above the age of 18 years are employed on the work of lead painting, the following precautions shall be taken</p> <ul style="list-style-type: none"> (a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint. (b) Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scrapped. (c) Overalls shall be supplied by the Contractor to workmen and adequate facilities shall be provided to enable workers to wash during and at the close of any day's work. <p>13) When work is performed near any place where there is risk of drowning all necessary equipment shall be provided and kept ready for use and all necessary steps taken for prompt first aid treatment of all injuries likely to be sustained during the course of the work.</p> <p>(14) Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following:</p> <ul style="list-style-type: none"> (i) These shall be of good mechanical construction, sound material and adequate strength and free from patent defects and shall be kept in good working order, be regularly inspected and properly maintained. (ii) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from defects <p>a) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 shall be in charge of any hoisting machine including scaffold</p>
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equipment. Only trained men over the age of 21 shall be permitted to give signals to such plant and appliance operators.

For every hoisting machine and every chain hook, shackle, swivel and pulley block used in hoisting, lowering or as means of suspension, safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with safe working load. In case of a hoisting machine or a variable safe working load, each safe working load and conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to in the paragraph above shall be loaded beyond safe working load except for the purpose of testing.

- b) In case of the Employer's machine, safe working load shall be notified by the Engineer or his Representative. As regards Contractor's machines, the Contractor shall notify safe working load of each machine to the Engineer or his Representative, whenever he brings it to the site of work and get it verified by him.
- (15) Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards; hoisting appliances shall be provided with such means as will reduce the risk of accident during descent of load to the minimum. Adequate precautions shall be taken to reduce to the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energised, insulating mats, working apparel such as gloves, sleeves and boots, as may be necessary, shall be provided. Workers shall not wear any rings, watches and carry keys or other materials which are good conductor of electricity.
- (16) All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.
- (17) These safety provisions shall be brought to the notice of all concerned by displaying on a notice board at a prominent place at the work location. Persons responsible for ensuring compliance with the Safety Code shall be named therein by the Contractor.
- (18) To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the contractor shall be open to inspection by the Engineer or his Representative.
- (19) Notwithstanding anything contained in conditions (1) to (17) above, the Contractor shall at its own costs, remain liable to comply with the provisions of all acts, rules, regulations, and bylaws for the time being in force in India and applicable in this matter.
- (20) For work carried out in the vicinity of any wharf or quay, the Contractor shall abide by all the provisions of the Dock Workers (Safety, Health and Welfare) Scheme, 1961.
- (21) The Contractor shall at his own expense provide protective safety Equipment like gloves and footwear for all labour engaged on concrete mixing work and all other types of working involving the use of tar, cement, etc. to the satisfaction of the Engineer or his Representative, and on his failure to do so, the employer shall be entitled to provide the same and recover the cost from the Contractor.

	<p>The Contractor shall be responsible for observance, by the sub-contractors, of the foregoing provisions.</p> <p>(23) All construction labour at all-time shall use personal protective equipment like, safety shoes, helmets and reflective jackets in all activities at site. This shall be ensured without fail on each work site. Failing to comply with this, provision shall attract penalty of Rs. 500/- per occasion per staff.</p> <p>Notwithstanding with any other provision, the Contractor shall have to pay penalty for damage to Railway cable in terms of clause C 15 of the JPO as given in para 1.2 of Chapter 1. (Safety and Security) of Section 8 and shall also indemnify the Employer against any losses, damages to property or life in terms of para 1.11 and 1.12 of the chapter 1. (Safety and Security) of Section 8).</p>
<p>New Clause-4.27</p>	<p>Quality Assurance</p> <p>The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The system shall be in accordance with the details stated in the Contract. The Engineer shall be entitled to audit any aspect of the system.</p> <p>Details of all procedures and compliance documents shall be submitted to the Engineer for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor himself shall be apparent on the document itself.</p> <p>Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.</p> <p>Quality Control</p> <p>Within 28 days of the issue of the Letter of acceptance, the Contractor shall submit to the Engineer, for his consent, his proposed Site Quality Plan based on the Outline Quality Plan and the Employer's Requirements. The quality manual should address the quality system as required by ISO 9001-1991. Any supplement to the Site Quality Plan shall be submitted at least 14 days before commencement of the relevant work.</p> <p>Upon the Engineer notifying his consent to the Site Quality Plan, or any supplement thereto, the Contractor shall, adhere to the principles and procedures contained in such document, except where the Engineer gives his consent to any amended or varied version thereof. The Contractor shall cause any sub-contractors to adhere to this Plan.</p> <p>The Contractor shall appoint a suitably qualified and experienced person, not otherwise engaged in the performance of the Contract, to act as manager of the quality assurance system and shall provide such other personnel and resources as required to ensure effective operation of the quality assurance system. The said manager shall carry out audits of the application of the quality assurance system, and ensure effective quality control and delivery of quality assurance.</p> <p>The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer to carry out surveillance visits both on and off the Site to verify that the quality assurance system is being properly and fully implemented. No extra payment shall be made in this regard and the cost of the Work under this element shall be deemed to be included in the Contract Price.</p>
<p>New Clause-4.28</p>	<p>Site Data</p> <p>The Employer shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Employer's possession on sub-surface and hydrological conditions</p>

	<p>at the Site, including environmental aspects. The Employer shall similarly make available to the Contractor all such data which come into the Employer's possession after the Base Date. The Contractor shall be responsible for interpreting all such data.</p> <p>To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Bid or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Bid as to all relevant matters, including (without limitation):</p> <ul style="list-style-type: none"> (a) the form and nature of the Site, including sub-surface conditions, (b) the hydrological and climatic conditions, (c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects, (d) the Laws, procedures and labour practices of the Country, and (e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services. (f) Data made available by the Employer in accordance with the preceding paragraph shall be deemed to include data listed elsewhere in the contract as open for inspection at the address stipulated in the Contract.
<p>New Clause-4.29</p>	<p>Sufficiency of the Accepted Contract Amount</p> <p>The Contractor shall be deemed to:</p> <ul style="list-style-type: none"> a) have satisfied himself as to the correctness and sufficiency of the Accepted Contract Amount, and b) have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in New-Clause 4.28/PCC [Site Data]. <p>Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums, if any) and all things necessary for the proper execution and completion of the Works and the remedying of any defects.</p>
<p>New Clause-4.30</p>	<p>Unforeseeable Physical Conditions</p> <p>In this Sub-Clause, "physical conditions" means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.</p> <p>If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Engineer as soon as practicable.</p> <p>This notice shall describe the physical conditions, so that they can be inspected by the Engineer, and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the</p>

	<p>Engineer may give. If an instruction constitutes a Variation, Clause 34/PCC [Variations and Adjustments] shall apply.</p> <p>If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to:</p> <ul style="list-style-type: none"> (a) An extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 26.5/PCC [Extension of Time for Completion], and (b) Payment of any such Cost, which shall be included in the Contract Price. <p>After receiving such notice and inspecting and/or investigating these physical conditions, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine (i) whether and (if so) to what extent these physical conditions were Unforeseeable, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.</p> <p>However, before additional Cost is finally agreed or determined under sub-paragraph (ii), the Engineer may also review whether other physical conditions in similar parts of the Works (if any) were more favourable than could reasonably have been foreseen when the Contractor submitted the Bid. If and to the extent that these more favourable conditions were encountered, the Engineer may proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine the reductions in Cost which were due to these conditions, which may be included (as deductions) in the Contract Price and Payment Certificates. However, the net effect of all adjustments under sub-paragraph (b) and all these reductions, for all the physical conditions encountered in similar parts of the Works, shall not result in a net reduction in the Contract Price.</p> <p>The Engineer may take account of any evidence of the physical conditions foreseen by the Contractor when submitting the Bid, which may be made available by the Contractor, but shall not be bound by any such evidence.</p>
New Clause-4.31	<p>Rights of Way and Facilities</p> <p>The Contractor shall bear all costs and charges for special and/or temporary rights-of-way which he may require, including those for access to the Site. The Contractor shall also obtain, at his risk and cost, any additional facilities outside the Site which he may require for the purposes of the Works.</p> <p>In case any operation connected with traffic necessitates diversion, obstruction or closure of any road, railway or any other right of way, the approval of the Engineer and the concerned authorities shall be obtained well in advance by the Contractor.</p> <p>Provided that if it is found necessary for the Contractor to move one or more loads of heavy constructional plants and equipment, materials or Pre-constructed units or parts of units of work over roads, highways, bridges on which such oversized and overweight items that are not normally to be moved, the contractor shall obtain prior permission from the concerned authorities.</p> <p>Payments for complying with the requirements, if any, for protection or strengthening of the roads, highways or bridges shall be made by the contractor and such expenses shall be deemed to be included in his quoted contract price.</p>
New Clause-4.32	<p>Avoidance of Interference</p> <p>The Contractor shall not interfere unnecessarily or improperly with:</p>

	<ul style="list-style-type: none"> a) the convenience of the public, or b) the access to and use and occupation of all roads and footpaths, irrespective of whether they are public or in the possession of the Employer or of others or c) Passenger amenities at stations and station platforms. <p>The Contractor shall indemnify and hold the Employer harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.</p>
New Clause-4.33	<p>Access Route</p> <p>The Contractor shall be deemed to have been satisfied as to the suitability and availability of access routes to the Site. The Contractor shall use reasonable efforts to prevent any road or bridge from being damaged by the Contractor's traffic or by the Contractor's Personnel. These efforts shall include the proper use of appropriate vehicles and routes.</p> <p>Except as otherwise stated in these Conditions:</p> <ul style="list-style-type: none"> (a) the Contractor shall (as between the Parties) be responsible for any maintenance which may be required for his use of access routes; (b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may be required from the relevant authorities for his use of routes, signs and directions; (c) the Employer shall not be responsible for any claims which may arise from the use or otherwise of any access route; (d) the Employer does not guarantee the suitability or availability of particular access routes; and (e) Costs due to non-suitability or non-availability, for the use required by the Contractor, of access routes shall be borne by the Contractor.
New Clause-4.34	<p>Transport of Goods</p> <p>Unless otherwise stated in the Special Conditions of Contract:</p> <ul style="list-style-type: none"> (a) the Contractor shall give the Engineer not less than 21 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site; (b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and (c) the Contractor shall indemnify and hold the Employer harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from the transport of Goods, and shall negotiate and pay all claims arising from their transport.
New Clause-4.35	<p>Contractor's Equipment</p> <p>The Contractor shall be responsible for all Contractors' Equipment. When brought on to the Site, Contractor's Equipment shall be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any major items of Contractor's Equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site</p> <p>In the event of Contractor imports any equipment the following shall apply"</p> <p>A. Custom Clearance: The Employer will assist the contractor, when required by furnishing letters of recommendation for obtaining expeditious clearance through customs of</p>

	<p>constructional plants, material and other things required for the works and then for re-export, if any. The following publications, may be referred to by the contractor for guidance about custom regulations etc :</p> <ol style="list-style-type: none"> i. Import & export policy, together with amendments, if any, published by Govt. of India, Ministry of Commerce.. ii. Hand Book of Procedures, together with amendments, if any, Volume 1 and 2 published by Ministry of Commerce. iii. Customs Tariff, together with amendments, if any published by Central Customs. <p>The Contractor shall be responsible to follow the latest rules and regulations without any liability of the Employer.</p> <p>B. Re-export of Contractors equipment: The contractor shall obtain all the relevant information regarding procedure for the import and subsequent re-export of his equipment and materials from the Chief Controller of Imports and Exports, Bangalore, and shall inform himself and keep himself informed on the details of custom charges and draw-back regulations as applicable to the items of Constructional plant. The contractor shall provide the necessary guarantee/bonds where these are required by the customs notwithstanding that import licenses may be granted in the name of Employer.</p> <p>C. Notwithstanding the provisions mentioned above, Contractor's Equipment, including essential spare parts therefore, imported by the Contractor for the sole purpose of executing the Contract shall be temporarily exempt from the payment of import duties and taxes upon initial importation, provided the Contractor shall post with the customs authorities at the port of entry an approved export bond or bank guarantee, valid until the Time for Completion plus six months, in an amount equal to the full import duties and taxes which would be payable on the assessed imported value of such Contractor's Equipment and spare parts, and callable in the event the Contractor's Equipment is not exported from the Country on completion of the Contract. A copy of the bond or bank guarantee endorsed by the custom authorities shall be provided by the Contractor to the Employer upon the importation of individual items of Contractor's Equipment and spare parts. Upon export of individual items of Contractor's Equipment or spare parts, or upon the completion of the Contract, Contractor shall prepare for approval by the customs authority the authorities, an assessment of the residual value of the Contractor's Equipment and spare parts to be exported based on the depreciation scale(s) and other criteria used by the customs authorities for such purposes under the provisions of the applicable Laws. Import duties and taxes shall be due and payable to the customs authorities by the Contractor on (a) the difference between the initial imported value and the residual value of the contractor's equipment and spare parts to be exported and (b) on the initial imported value that contractor's equipment and spare parts remaining in the Country after completion of the Contract. Upon payment of such dues within 28 days of being invoiced, the bond or bank guarantee shall be reduced or released accordingly; otherwise the security shall be called in the full amount remaining in the Country.</p> <p>D. Conditions of hire of the contractor's equipment: A certified copy of the agreement in respect of any item of Equipment held by contractor under any agreement for hire or hire purchase thereof, shall be supplied to the Engineer/Employer."</p>
New Clause-4.36	Protection of the Environment

	<p>The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.</p> <p>The Contractor shall ensure that emissions, surface discharges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.</p>
New Clause-4.37	<p>Electricity, Water and Gas</p> <p>The Contractor shall, except as stated below, be responsible for the provision of all power, water and other services he may require.</p> <p>The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which details and prices are given in the Specification. The Contractor shall, at his risk and cost, provide any apparatus necessary for his use of these services and for measuring the quantities consumed.</p> <p>The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Engineer in accordance with New-Clause 2.4/PCC [Employer's Claims] and New-Clause 3.5/PCC [Determinations]. The Contractor shall pay these amounts to the Employer.</p>
New Clause-4.38	<p>Employer's, Equipment and Free-Issue Material</p> <p>The Employer shall make the Employer's Equipment (if any) available for the use of the Contractor in the execution of the Works in accordance with the details, arrangements and prices stated in the Specification. Unless otherwise stated in the Specification:</p> <p>(a) the Employer shall be responsible for the Employer's Equipment, except that</p> <p>(b) the Contractor shall be responsible for each item of Employer's Equipment whilst any of the Contractor's Personnel is operating it, driving it, directing it or in possession or control of it.</p> <p>The appropriate quantities and the amounts due (at such stated prices) for the use of Employer's Equipment shall be agreed or determined by the Engineer in accordance with New-Clause 2.4/PCC [Employer's Claims] and New-Clause 3.5/PCC [Determinations]. The Contractor shall pay these amounts to the Employer.</p> <p>The Employer shall supply, free of charge, the "free-issue materials" (if any) in accordance with the details stated in the Contract data.</p> <p>The Employer shall, at his risk and cost, provide these materials at the time and place specified in the Contract. The Contractor shall then visually inspect them, and shall promptly give notice to the Engineer of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Employer shall immediately rectify the notified shortage, defect or default.</p> <p>In case materials are handed over, in accordance with the procedure prescribed by the Engineer, after proper measurement and accounted for, the contractor shall be solely liable for any shortage, damage, defect or default in such material, and shall indemnify the Employer until the final account of materials is made by the Contractor on completion of the work.</p>
New Clause-4.39	<p>Progress Reports</p> <p>Unless otherwise stated in the Special Conditions of Contract, monthly progress reports shall be prepared by the Contractor and submitted to the Engineer in six copies. The first report shall cover the period up to the end of the first calendar month following the Commencement Date.</p>

	<p>Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.</p> <p>Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.</p> <p>Each report shall include:</p> <p>Charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor (as defined in Clause 7/PCC (Nominated Subcontractors)),</p> <p>photographs showing the status of manufacture and of progress on the Site; for the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:</p> <ul style="list-style-type: none"> (i) commencement of manufacture, (ii) Contractor's inspections, (iii) tests, and (iv) shipment and arrival at the Site; <p>the details described in Sub-Clause 1.10/SCC of PCC [Records of Contractor's Personnel and Equipment];</p> <ul style="list-style-type: none"> a) copies of quality assurance documents, test results and certificates of Materials; b) list of notices given under New-Clause 2.4/PCC [Employer's Claims] and notices given under Sub-Clause 4.1/SCC [Contractor's Claims]; c) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and d) Comparisons of actual and planned progress of all activities, with details of any events or circumstances which may jeopardise the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.
<p>New Clause-4.40</p>	<p>Security of the Site</p> <p>Unless otherwise stated in the Special Conditions of Contract:</p> <ul style="list-style-type: none"> (a) the Contractor shall be responsible for keeping unauthorised persons off the Site, and (b) authorised persons shall be limited to the Contractor's Personnel and the Employer's Personnel; and to any other personnel notified to the Contractor, by the Employer or the Engineer, as authorised personnel of the Employer's other contractors on the Site.
<p>New Clause-4.41</p>	<p>Contractor's Operations on Site</p> <p>The Contractor shall confine his operations to the Site, and to any additional areas which may be obtained by the Contractor and agreed by the Engineer as working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacent land.</p> <p>During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction, and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required.</p>

	<p>Upon the issue of a Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which the Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works. The Contractor shall leave that part of the Site and the Works in a clean and safe condition.</p> <p>However, the Contractor may retain on Site, during the Defects Notification Period, such Goods as are required for the Contractor to fulfill obligations under the Contract.</p>
<p>New Clause-4.42</p>	<p>Design – General Obligations:</p> <p>Drawings for Permanent works:</p> <p>Preliminary Drawings showing general dimensions & details elaborating the scope of work (not based on detailed design) will be supplied along with the Tender documents.</p> <p>Design, Drawings and Specifications:</p> <p>The Contractor shall Design the false work, form work, staging scheme etc. required to perform their work and shall get the same and related working drawings approved by the Engineer. The Contractor would supply 6 sets of these drawings to the Engineer for the latter's use.</p> <p>Shop Drawings</p> <p>Based on "Good for Construction "drawings issued by Engineer the Contractor shall prepare shop / fabrication drawings to scale as directed indicating the required details. The shop drawings shall be prepared before execution of work, after taking actual site dimensions and all existing and proposed services / structures etc. The shop / fabrication drawings shall be checked by independent consultant prior to submission to the Engineer for approval.</p> <p>Shop drawings submitted by the Contractor shall be in sufficient detail to indicate the type, size, arrangement, breakdown for packing and shipment, the external connections, fixing arrangements required, the dimensions required for installation and interconnections with other equipment and materials, clearances and spaces required between various portions and any other information specifically called for.</p> <p>Approval of Engineer of any such proposal / drawings shall not relieve the contractor of his responsibility of sufficiency of such works. It shall be the responsibility of the Contractor to promptly bring to the notice of the Engineer any error or discrepancy in the Contract documents and obtains his orders thereon. Only stated dimensions are to be taken and not those obtained from scaling drawings. In case any feature of the work is not fully described and set forth in the Drawings and Specifications, the Contractor shall forthwith apply to the Engineer for further instructions, Drawings or Specifications.</p>
<p>New Clause-4.43</p>	<p>Fossils</p> <p>All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Employer. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.</p> <p>The Contractor shall, upon discovery of any such finding, promptly give notice to the Engineer, who shall issue instructions for dealing with it. If the Contractor suffers delay and/or incurs Cost from complying with the instructions, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to:</p> <p>(a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 26.5/PCC [Extension of Time for Completion], and</p>

	<p>(b) payment of any such Cost, which shall be included in the Contract Price.</p> <p>After receiving this further notice, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine these matters.</p>
	<p>5. PLANT, MATERIALS AND WORKMANSHIP.</p>
New Clause-5.1	<p>Manner of Execution</p> <p>The Contractor shall carry out the manufacture of Plant, the production and manufacture of Materials, and all other execution of the Works:</p> <ul style="list-style-type: none"> (a) in the manner (if any) specified in the Contract, (b) in a proper workmanlike and careful manner, in accordance with recognised good practice, and (c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.
New Clause-5.2	<p>Samples</p> <p>The Contractor shall submit the following samples of Materials, and relevant information, to the Engineer for consent prior to using the Materials in or for the Works:</p> <ul style="list-style-type: none"> (a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and (b) additional samples instructed by the Engineer as a Variation. <p>Each sample shall be labelled as to origin and intended use in the Works.</p>
New Clause-5.3	<p>Inspection</p> <p>The Employer's Personnel shall at all reasonable times:</p> <ul style="list-style-type: none"> (a) have full access to all parts of the Site and to all places from which natural Materials are being obtained, and (b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials. <p>The Contractor shall give the Employer's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.</p> <p>The Contractor shall give notice to the Engineer whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Engineer shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Engineer does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, uncover the work and thereafter reinstate and make good, all at the Contractor's cost.</p>
New Clause-5.4	<p>Testing</p> <p>This Sub-Clause shall apply to all tests specified in the Contract, other than the Tests after Completion (if any).</p> <p>The Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labour, materials, and suitably qualified</p>

	<p>and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Engineer, the time and place for the specified testing of any Plant, Materials and other parts of the Works.</p> <p>The Engineer may, under Clause 34/PCC [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, notwithstanding other provisions of the Contract.</p> <p>The Engineer shall give the Contractor not less than 24 hours' notice of the Engineer's intention to attend the tests. If the Engineer does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Engineer, and the tests shall then be deemed to have been made in the Engineer's presence.</p> <p>If the Contractor suffers delay and/or incurs Cost from complying with these instructions or as a result of a delay for which the Employer is responsible, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 4.1/SCC [Contractor's Claims] to:</p> <ul style="list-style-type: none"> (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 26.5/PCC [Extension of Time for Completion], and (b) payment of any such Cost, which shall be included in the Contract Price. <p>After receiving this notice, the Engineer shall proceed in accordance with New--Clause 3.5/PCC [Determinations] to agree or determine these matters.</p> <p>The Contractor shall promptly forward to the Engineer duly certified reports of the tests. When the specified tests have been passed, the Engineer shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Engineer has not attended the tests, he shall be deemed to have accepted the readings as accurate.</p>
<p>New Clause-5.5</p>	<p>Rejection</p> <p>If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract, the Engineer may reject the Plant, Materials or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.</p> <p>If the Engineer requires this Plant, Materials or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Employer to incur additional costs, the Contractor shall subject to New-Clause 2.4/PCC [Employer's Claims] pay these costs to the Employer.</p>
<p>New Clause-5.6</p>	<p>Remedial Work</p> <p>Notwithstanding any previous test or certification, the Engineer may instruct the Contractor to:</p> <ul style="list-style-type: none"> (a) remove from the Site and replace any Plant or Materials which is not in accordance with the Contract, (b) remove and re-execute any other work which is not in accordance with the Contract, and (c) Execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.

	<p>The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).</p> <p>If the Contractor fails to comply with the instruction, the Employer shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to New-Clause 2.4/PCC [Employer's Claims] pay to the Employer all costs arising from this failure.</p>
New Clause-5.7	<p>Ownership of Plant and Materials</p> <p>Each item of Plant and Materials shall, to the extent consistent with the Laws of the Country, become the property of the Employer at whichever is the earlier of the following times, free from liens and other encumbrances:</p> <ul style="list-style-type: none"> (i) when it is delivered to the Site; (ii) when the Contractor is entitled to payment of the value of the Plant and Materials under Sub-Clause 26.11/PCC [Payment for Plant and Materials in Event of Suspension]. <p>Unless otherwise stated in the Specification, the Contractor shall pay all royalties, rents and other payments for:</p> <ul style="list-style-type: none"> a) natural Materials obtained from outside the Site, and b) the disposal of material from demolitions and excavations and of other surplus material (whether natural or man-made), except to the extent that disposal areas within the Site are specified in the Contract.
	<p>6. Defect Liability</p>
New Clause-6.1	<p>Completion of Outstanding Work and Remedying Defects</p> <p>In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable thereafter, the Contractor shall:</p> <ul style="list-style-type: none"> (a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and (b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Employer on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be). <p>If a defect appears or damage occurs, the Contractor shall be notified accordingly, by (or on behalf of) the Employer.</p>
New Clause-6.2	<p>Cost of Remedying Defects</p> <p>All work referred to in sub-paragraph (b) of New-Clause 6.1/PCC [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:</p> <ul style="list-style-type: none"> (a) any design for which the Contractor is responsible, (b) Plant, Materials or workmanship not being in accordance with the Contract, or (c) failure by the Contractor to comply with any other obligation.

	If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Employer, and Sub-Clause 34.1/PCC [Variation Procedure] shall apply
New Clause-6.3	<p>Extension of Defects Notification Period</p> <p>The Employer shall be entitled subject to New-Clause 2.4/PCC [Employer's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or damage. However, a Defects Notification Period shall not be extended by more than two years.</p> <p>If delivery and/or erection of Plant and/or Materials was suspended under Sub-Clause 26.9/PCC [Suspension of Work] the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/or Materials would otherwise have expired.</p>
New Clause-6.4	<p>Failure to Remedy Defects</p> <p>If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by (or on behalf of) the Employer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.</p> <p>If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under New-Clause 6.2/PCC [Cost of Remedying Defects], the Employer may (at his option):</p> <ul style="list-style-type: none"> (a) Carry out the work himself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to New-Clause 2.4/PCC [Employer's Claims] pay to the Employer the costs reasonably incurred by the Employer in remedying the defect or damage; (b) require the Engineer to agree or determine a reasonable reduction in the Contract Price in accordance with New-Clause 3.5/PCC [Determinations]; or (c) if the defect or damage deprives the Employer of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contract or otherwise, the Employer shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.
New Clause-6.5	<p>Removal of Defective Work</p> <p>If the defect or damage cannot be remedied expeditiously on the Site and the Employer gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.</p>
New Clause-6.6	<p>Further Tests</p> <p>If the work of remedying of any defect or damage may affect the performance of the Works, the Engineer may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 28 days after the defect or damage is remedied.</p>

	These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under New-Clause 6.2/PCC [Cost of Remedying Defects], for the cost of the remedial work.
New Clause-6.7	<p>Right of Access</p> <p>Until the Performance Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Employer's reasonable security restrictions.</p>
New Clause-6.8	<p>Contractor to Search</p> <p>The Contractor shall, if required by the Engineer, search for the cause of any defect, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under New-Clause 6.2/PCC [Cost of Remedying Defects], the Cost of the search shall be agreed or determined by the Engineer in accordance with New-Clause 3.5/PCC [Determinations] and shall be included in the Contract Price.</p>
New Clause-6.9	<p>Performance Certificate</p> <p>Performance of the Contractor's obligations shall not be considered to have been completed until the Employer has issued the Performance Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.</p> <p>The Employer shall issue the Performance Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects.</p> <p>Only the Performance Certificate shall be deemed to constitute acceptance of the Works.</p>
New Clause-6.10	<p>Unfulfilled Obligations</p> <p>After the Performance Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.</p> <p>Emergency defect rectification</p> <p>If any defect or damage is one requiring immediate attention from safety, environmental or operational viewpoint, the Engineer has the authority to proceed with rectification in any manner suitable and deduct such sums from the Contract Price</p>
New Clause-6.11	<p>Clearance of Site</p> <p>Upon receiving the Performance Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.</p> <p>If all these items have not been removed within 28 days after the Employer receives a copy of the Performance Certificate, the Employer may sell or otherwise dispose of any remaining items. The Employer shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.</p> <p>Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Employer's costs, the Contractor shall pay the outstanding balance to the Employer.</p>
	7.MEASURMENT AND EVALUATION

New Clause 7.1	<p>Works to be Measured</p> <p>The Works shall be measured, and valued for payment, in accordance with this Clause.</p> <p>Whenever the Engineer requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:</p> <ul style="list-style-type: none"> (a) promptly either attend or send another qualified representative to assist the Engineer in making the measurement, and (b) supply any particulars requested by the Engineer. <p>If the Contractor fails to attend or send a representative, the measurement made by (or on behalf of) the Engineer shall be accepted as accurate.</p> <p>Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agree the records with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.</p> <p>If the Contractor examines and disagrees the records, and/or does not sign them as agreed, then the Contractor shall give notice to the Engineer of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Engineer shall review the records and either confirm or vary them. If the Contractor does not so give notice to the Engineer within 14 days after being requested to examine the records, they shall be accepted as accurate.</p>
New Clause 7.2	<p>Method of Measurement</p> <p>Except as otherwise stated in the Contract and notwithstanding local practice:</p> <ul style="list-style-type: none"> (a) measurement shall be made of the net actual quantity of each item of the Permanent Works, and (b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.
New Clause 7.3	<p>Omissions</p> <p>Whenever the omission of any work form's part (or all) of a Variation, the value of which has not been agreed, if:</p> <ul style="list-style-type: none"> a) the Contractor will incur (or has incurred) cost which, if the work had not been omitted, would have been deemed to be covered by a sum forming part of the Accepted Contract Amount; b) the omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and c) this cost is not deemed to be included in the evaluation of any substituted work; <p>then the Contractor shall give notice to the Engineer accordingly, with supporting particulars. Upon receiving this notice, the Engineer shall proceed in accordance with New-Clause 3.5/PCC [Determinations] to agree or determine this cost, which shall be included in the Contract Price.</p>
New Clause 8	<p>FORCE MAJEURE</p> <p>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,</p>

	<p>explosions, epidemics, pandemics, strikes, lockouts or acts of God (hereinafter referred to 'events') provided, notice of the happening of any such event is given by either party to the other within 14 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 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 continuous period exceeding 84 days, either party may at its option terminate the contract by giving notice to the other party.</p> <p>Payment and Release in case of Optional Termination</p> <p>Upon such termination, the Engineer shall determine the value of the work done and issue a Payment Certificate which shall include:</p> <ol style="list-style-type: none"> a) The amounts payable for any work carried out for which a price is stated in the contract; b) The Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the contractor is liable to accept delivery; this Plant and materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, the Contractor shall place the same at the Employer's disposal; c) Other Costs or liabilities supported by necessary documentary evidence which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works as per mutually agreed programme. d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost).
New Clause-9	Defect liability period: 365 Days
New Clause-10	<p>Integrated testing and system commissioning</p> <p>Integrated Testing: Tests on Completion shall also include Integrated Testing. The Contractor shall, following satisfactory completion of tests on his works, equipment, sub-systems or system, perform, at the direction of the Engineer, programme of tests to verify and confirm the compatibility and complete performance of his works, equipment, sub-systems or system with the works, equipment, sub-systems or system provided by others.</p> <p>Compilation of Test Results: The results of the Integrated Testing and Commissioning shall be compiled and evaluated by the Engineer and the Contractor</p> <p>Retesting: If the Works, or a part thereof, or a Section, fail to pass the Integrated Testing and Commissioning, the Engineer may order such failed tests to be repeated with the same terms and conditions. If such failure and retesting result from a default of the Contractor and cause the Employer to incur costs, the same shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any amount due, or to become due, to the Contractor.</p>

	<p>Failure to Pass Test: If the Works, or a part thereof, or a Section, fail to pass Integrated Testing and Commissioning and the Contractor in consequence proposes to make any adjustment or modification to the Works or a part thereof, or a section, the Engineer may, with the approval of the Employer, instruct the Contractor to carry out such adjustment or modification, at his own cost and to satisfy the requirements of Integrated Testing and Commissioning within such time as the Employer / Engineer may deem to be reasonable.</p> <p>Statutory Requirements: The Contractor shall carry out all statutory tests and trials, under the supervision of the Engineer, necessary for obtaining sanction of the competent authority for opening the system for public carriage of passengers as mentioned in the Special Conditions of Contract.</p>
<p>New clause-11</p>	<p>Conflict of Interest:</p> <p>The Contractor shall carry out all statutory tests and trials, under the supervision of the Engineer, necessary for obtaining sanction of the competent authority for opening the system for public carriage of passengers as mentioned in the Special Conditions of Contract.</p> <p>Conflict of Interest The remuneration of the Tenderer shall constitute the Tenderer's sole remuneration in connection with this Contract or the Services and, the Tenderers shall not accept for their own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations hereunder, and the Tenderers shall use their best efforts to ensure that any Personnel either of them, similarly shall not receive any such additional remuneration Neither the Tenderer nor the Personnel of either of them shall engage, either directly or indirectly, in any of the following activities:</p> <p>(a) during the term of this Contract, any business or professional activities in India which would conflict with the activities assigned to them under this Contract</p> <p>The tenderer shall not be one of the following:</p> <p>(i) A firm which has been engaged by the Employer to provide consulting services for the preparation related to procurement for or implementation of this project.</p> <p>(ii) Any association/affiliation (inclusive of parent firms) of a firm or an organization mentioned in para (i) above.</p> <p>(iii) A Tenderer who lends, or temporarily seconds its personnel to firms or organizations which were engaged in consulting services for the preparation related to procurement for or implementation of the project, if the personnel would be involved in any capacity on the same project.</p> <p>Jurisdiction of Court in case of dispute or differences arising on account of this tender: Any suit or application, arising out of any dispute or differences on account of this tender shall be filed in a competent court at Bangalore, Karnataka only and no other court or any other district of the country shall have any jurisdiction in the matter.</p>
<p>New Clause-12</p>	<p>Special/Acceleration Advance</p> <p>Employer at his sole discretion, may provide Interest bearing Special/Acceleration Advance based on the recommendation of the Engineer to expedite works or to bring forward the completion date(s) and on account of immediate additional mobilisation to complete balance works as targeted. The maximum cumulative Special/Acceleration Advance shall be 10% of the Accepted contract amount, which shall be released in stages as and when deemed appropriate</p>

	as decided by the Engineer/Employer. The advance released at a time shall not exceed 2.5% of the Accepted contract amount.
New Clause-13	<p>Provisional Payment Against Material at Site.</p> <p>A provisional payment on account of main construction materials required for the Permanent Works shall be paid in INR only on request of the Contractor after these materials are brought to Site, against the Bank Guarantee and Insurance. The payment shall be limited to 80% of the actual value or assessed value of these materials on the basis of invoice and the total of such provisional payment on account of construction materials at a time shall be limited to three percent of original contract value or likely average consumption of such materials for three months, whichever is less and at any time the total outstanding provisional payment against material at site shall not exceed four percent of the original contract value. The valuation of the average consumption of such main construction materials shall be approved by the Engineer, whose decision shall be final. Materials which are of perishable nature should be adequately insured. Advances and provisional payments as admissible, shall be payable only on Contractor's written request to the Employer/Engineer.</p>
New Clause-14	Ruling Language- English
New Clause-15	Language for communications- English
New Clause-16	<p>Time for access to Site (After the date of commencement) Starting from the Date of Commencement, the section will be progressively handed over in 180 days.</p>
New clause-17	<p>Employers' Bank details for Letter of Credit</p> <p>(a) Nodal Branch Canara Bank, MG Road, Bangalore 560001 IFSC Code – CNRB0002636 A/c No - 0430201012110</p> <p>(b) Issuance/ reimbursing branch for LC Shall be indicated later.</p>

APPENDIX 1

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK

(The laws as current on the date of bid opening will apply)

- a) **Employees Compensation Act 1923:** The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- b) **Payment of Gratuity Act 1972:** Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more or on death the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- c) **Employees Provident Fund and Miscellaneous Provisions Act 1952 (since amended):** The Act Provides for monthly contributions by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) payment of P.F. accumulation on retirement/death etc.
- d) **Maternity Benefit Act 1951:** The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- e) **Contract Labour (Regulation & Abolition) Act 1970:** The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.
- f) **Minimum Wages Act 1948:** The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.
- g) **Payment of Wages Act 1936:** It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- h) **Equal Remuneration Act 1979:** The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
- i) **Payment of Bonus Act 1965:** The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs.7000/-per month or the minimum wage as fixed by the appropriate government whichever is higher. The Act does not apply to certain

establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.

- j) **Industrial Disputes Act 1947:** The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- k) **Industrial Employment (Standing Orders) Act 1946:** It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.
- l) **Trade Unions Act 1926:** The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
- m) **Child and Adolescent Labour (Prohibition & Regulation) Act 1986:** The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.
- n) **Inter-State Migrant Workmen's (Regulation of Employment & Conditions of Service) Act 1979:** The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home upto the establishment and back, etc.
- o) **The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996:** All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

As per Central Government's Notification No.S.O.2899 dated 26.09.1996 under this act, the cess shall be levied @1% of cost of construction works which shall be deducted from each bill of the payment due to the contractor.

- p) **Factories Act 1948:** The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It

is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

- q) **The Employees State Insurance Act, 1948 (Act No. 34 of 1948) (Provisions as extended from time to time):**An Act to provide for certain benefits to employees in case of sickness, maternity and 'employment injury' and to make provision for certain other matters in relation thereto.

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K-RIDE

SECTION: 8

TECHNICAL SPECIFICATIONS

The works shall be carried out as per Indian Railway USSOR (IRUSSR) specifications/ CPWD Specifications as per the relevant items of works pertaining to BOQ. Specification for Electrical items are given separately in the tender document and are applicable for electrical related works. For technical specification of items that are not covered in IRUSSR and CPWD specifications, decision of GM/Civil/KRIDE regarding adoption of specifications will be final and will be binding on the contractor.

It is presumed that bidders have gone through the above (including latest correction slips issued up to the date 28 days prior to the deadline for submission of bids) before quoting the rates.

TECHNICAL SPECIFICATION FOR CONSTRUCTION OF SERVICE & RESIDENTIAL BUILDINGS

a) Technical Specifications common to all type of buildings:

- a. General Arrangement Drawings (GAD) to be adopted at particular locations of the project shall be made available to the contractor during the currency of the contract. The buildings may also be required to be constructed in continuation of the existing building, in such a case the new structure is to be constructed by proper joints and connections, the design and detailed drawings shall have to be made accordingly and cost of which is deemed to be included in plinth area rates.
- 1.2 Suitable economical structural and architectural design for foundation and super structure consisting of masonry walls, reinforced columns/beams/slabs shall be done by the Contractor as per site conditions for the service building and others structures including all detailed designs of RCC works i.e. columns, beams stair case, balcony, slabs etc. keeping in view the relevant seismic zone & making the building earthquake resistant Working drawings will have to be prepared by the contractor for each activity of work, giving details of reinforcement, water arrangements, drainage, sewerage, floorings, fittings etc. and got approved from the Engineer. The construction will be done with approved drawings.
- 1.3 If any activity of the work is essential for completion of the building but is not mentioned specifically in these specifications or elsewhere in the bidding documents, the same shall be deemed to be included in the rates and shall be executed by the Contractor as per specifications decided by the Engineer and the building shall be handed over in functional manner, complete in all respects.
- 1.4 Water & electricity shall be arranged by the Contractor at his own cost for execution of works.
- 1.5 Contractor has to make arrangements for approach to site, stacking of materials and all temporary works necessary for the execution of work at his own cost.
- 1.6 Contractor will have to make arrangements for required tests (as directed by the Engineer) for testing the soundness of the work or any of the materials at Contractor's own cost.
- 1.7 Sampling and testing of work/material at site/laboratory shall be as per the relevant Indian Standard Specifications, with up-to-date corrections.
- 1.8 If any work is found unsatisfactory or under specification the same will have to be redone by the Contractor at Contractor's own cost. In case, the Contractor fails to do so, the same will be got done by Engineer at the Contractor's cost.
- 1.9 The Engineer will be at liberty to get any work or material dismantled/removed by any other means at Contractor's cost if it is found unsatisfactory or under specification, and the contractor fails to rectify the same within specified time.
- 1.10 The site shall be cleared of all debris etc. before commissioning of work.

- 1.11 The contractor shall take all necessary safety precautions during fabrication, launching, of members, casting of RCC slabs etc. He shall also ensure safety of railway track if the work is required to be done near the track or above railway tracks.
- 1.12 In case there is any damage to road, drain or other structure during construction of the work by the contractor, the damages will have to be rectified by the contractor at his own cost.
- 1.13 Earth work: Earthwork in filling in plinth and floors including for plinth protection, if required shall be done by contractor with Contractor's own self compacting material which shall be payable separately under the foundation and plinth items. Item for supply and filling of self-compacting material is to be included in foundation item and payment is to be made accordingly.
- 1.14 Concrete work: All plain and reinforced concrete work to be done as per IS: 456 Code of Practice. Design mix concrete as approved by Engineer shall only be used. Nominal mix can be permitted by the Engineer only in exceptional circumstances. The cement concrete flooring, roof and other RCC/Concrete structures are to be leveled and compacted with vibrator of suitable size and specification.

TECHNICAL SPECIFICATION FOR BUILDING WORKS

GENERAL:- The building works are to be carried out as per the approved drawings and as per **CPWD Specifications Vol -1 & Vol-II (revised/updated specifications)**, and as directed by the Engineer-in-charge.

1.0 SETTING OUT WORKS:

- 1.1 The contractor shall be responsible for the true and proper setting out of the works for correctness of the position, levels, dimensions and alignment of all parts of the work and for provisions of all necessary pegs, reference, pillars, instrument, equipment's and appliances and labour in connection therewith. If at any time during the progress of the work, any error shall appear or arise in the position of levels, dimensions, or alignments at any part of the works, the contractor on being required to do so by the Engineer-in-charge, shall at his own expenses rectify such errors to the satisfaction of the Engineer-in-charge and he shall carefully protect, preserve, secure all bench marks, site rails, pegs, reference pillars and other things used in setting out of the works.

2.0 DRAWINGS

The relevant drawings can be seen in K-RIDE/Bengaluru Office.

3.0 BUILDING WORKS:

- 3.1 Payment for filling in basement will be for the space filled in duly compacted with hand roller. No extra allowances would be allowed to cover any settlement of the earthwork into the natural ground.
- 3.2 All fittings and fastenings including locking arrangements required for doors, windows, ventilators, as well as all sanitary and water supply fittings, tiles, etc., should be of approved quality and conforming to IS Specifications and should be submitted to Engineer-in-charge and used in the work only after his specific approval. Approved samples should be deposited with the Engineer-in-charge.
- 3.3 The fittings and fastenings including locking arrangements for doors and windows shall be of anodized Aluminum as specified in the description of work.

- 3.4 The internal plastering of walls shall be done as per the direction of Engineer-in-charge to smooth and even finish duly applying sponge.
- 3.5 The Tenderer/contractor shall execute the works in co-ordination with electrical Contractor, when electrical wiring works are executed. The contractor shall leave necessary holes, vents, ducts required for the execution of concealed electrical wiring works as directed by the Engineer-in-charge. The contractor shall also make good the disturbed portion of masonry, plastering etc., after finishing the electrical portion of works and render the surface neat and clean. No extra payment for these minor works shall be entertained.
- 3.6 Scaffoldings shall not be allowed to rest or supported on to the brick work while executing the plastering works, to avoid scaffolding hole marks visible after finishing the plastering works.
- 3.7 Necessary fan hooks of "U" shape of suitable size shall be provided in all rooms or at locations as directed by the Engineer-in-charge, while providing the steel reinforcements for slab at no extra cost.
- 3.8 All exposed surface of concrete shall be finished smooth and no extra payment shall be allowed for the same.
- 3.9 Due to poor quality of shuttering, if any honey-comb concrete is formed which warrants plastering, the same shall be done by the contractor at his own cost and no payment will be made for plastering separately. The cost of the cement used for this plastering shall be borne by the contractor.
- 4.0 DISMANTLING/ DEMOLITION:**
- 4.1 Contractor has to arrange his own equipment, men, material, tools & plants, machinery Labour etc. including all consumable to carry out dismantling/demolition work at all heights without infringing normal working, obstruction to traffic and without damaging any of the property or any injury to the workers.
- 4.2 Before dismantling/demolition, site has to be inspected jointly by the contractor and Engineer in charge and inventory of material has to be taken and these materials are to be properly accounted. For any shortage, contractor is liable for damages/recovery at appropriate rates.

LIST OF APPROVED MAKE / LIKELY SUPPLIERS

All the materials and products shall conform to the relevant Standard Specifications, IS codes and other relevant codes etc. and shall be of approved make and design.

The list of approved makes for products and materials given below. Other equivalent manufacture can only be considered with prior approval of the Employer subject to testing of the material for equivalent specification and properties. Decision of Engineer-in-charge of the work is final in this regard and binding on the contractor.

Sl. No	Material Description	Brand	Make
1	Ordinary Portland cement	ACC	ACC Cements Ltd
		Ultra Tech	Ultra Tech Cement Ltd
		Birla	Birla Corportion Ltd.
		Dalmia	Dalmia Cement Bharat Ltd.
		Zuari	Zuari Cement Limited
		Jaypee Cement	Jaypee Cement Ltd.
		J.K.Cement	J.K.Cement Pvt.Ltd.
		Ambuja Cement	Ambuja Cements Ltd.
		Konark Cement	Konark Cement
		Coromandal	India Cements Ltd.
	Chettinadu	Chettinadu Cements Corpotion Ltd.	
2	Damp Proof material	MAPEI	MAPEI Construction Products India P Ltd.
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Impermo	Snowcem Paints
		Duraseal	Apurva India Pvt. Ltd.
		ACCO Proof	ACC Cements Ltd
		Dr.Fixit	Pidilite Industries
		Fosroc	Fosroc Chemicals India Pvt. Ltd.
		CICO	CICO Industries
		SIKA	Sika Inida Pvt Ltd.
		PIDILITE	Pidilite Industries Ltd
		BASF	BASF India Ltd
MYK	MYK LATICRETE India Pvt. Ltd		
3	Reinforcement steel TMT Bar Fe-500/500D	SAIL	Steel Authoirty of India Ltd.
		VIZAG	Rastriya Ispat Nigam Ltd.
		TISCO	TATA Steel Ltd
		JSW	JSW Steel Ltd
* RDSO approved vendors appearing in the approved list of RDSO as on date of supply of materials to K-RIDE.			
4	Plasticiser & Super Plasticiser	BASF	BASF India Ltd
		CICO	CICO Industries
		Plastiment, Sikament	
		Contrament, Power flow	MC Bauchemie (India) Pvt. Ltd
		Conplast SP430	FOSROC India
		MYK Schomburg	MYK Arments Pvt. Ltd.
		Chryso-HP / Delta / Optima	Chryso India Pvt. Ltd.,
		Sunanda Chemicals	Sunanda Chemicals Ltd.

Sl. No	Material Description	Brand	Make
5	Expansion Joint Bitumen board	Dura board HD100	Supreme Industries
		STP	Shalimar Tar Products
		DURAFILL	Supreme industries
6	Post tensioning System	CRUX	Crux Processing systems Pvt Ltd.,
		VSL	VSL India Pvt Ltd.
		Ultracon	Ultracon Structural Systems Pvt Ltd
		BBR	BBR (India) Pvt . Ltd
7	PT Strands	DP wires	D.P Wires Ltd.
		TATA wiron	TATA Steel Ltd
		Usha Martin	Usha Martin Ltd
8	Adhesive	Dunlop	India Tyre & Rubber Co (India) Ltd.
		Vamorganic	Vamorganic Ltd.,
		Sika	Sika Inida Pvt Ltd.
		Fevicol	Pidilite Industries
		CICO	CICO Industries
	Proofex of adhesive	FOSROC India Ltd	
9	Grout	Ardex	Ardex Endura Adhesive India Pvt. Ltd
		Ferrous crete	Ferrous Crete (India) Pvt. Ltd.
		LATA POXY	MYK LATICRETE India Pvt. Ltd
		BASF	BASF India Ltd
		Fosroc GP2	Fosroc India Ltd
		MYK Schomburg	MYK Arments range of products
		Fugabella, Porcelana	Kerakoil India Pvt. Ltd
		Dr.Fixit	Pidilite Industries
10	AAC Blocks / Building Blocks	Xtralite	ULTRATECH Cement Ltd
		Birla Areocon	HIL
		Siporex	SIPOREX
		Nucon	Green way building materials India Pvt. Ltd
		NCL	NCL VEKA Ltd
		Renacon	Renaatus Procon Pvt. Ltd
11	Wooden Flush door shutters	Indian Timber Products	Indian Timber Products
		Greenlam	Greenlam Ply Industries Ltd.
		Mayur	Mayur Ply Industries
		Kitply	Kitply Industries Ltd
		Duro Flush doors	Duro Ply Industries Ltd.
		Kenwood	Kenwood Ply & Board
		Century	Century Flush Doors
12	Water Proof Plywood, Commercial ply, Fire retardant ply and Block boards	Green Ply	Green Ply Industries Ltd.
		Kitply	Kitply Industries Ltd
		Duroply	Duro Ply Industries Ltd.
		Archidply	Archid ply industries Ltd.
		Century ply	Century Flush Doors

Sl. No	Material Description	Brand	Make
13	Laminate	Green Lam	Green lam Industries Ltd.
		Centuary	Centuray laminates
		Merino	Merino laminates
		Archidply	Archid ply industries Ltd.
		Kitmica	Kitply Industries Ltd
		Sunmica	Sunmica Industries
		Formica	Formica Laminates (India) Pvt Ltd
		Decolam	Decolam India Pvt Ltd.
14	Prelaminated particle board Exterior Grade	Novapan	GVK Novapan Industries Pvt Ltd.,
		Merino	Marino laminates
		Kitlam	Kitply Industries Ltd
		TESA Action Co.	TESA Action Co.
		Ecoboard	Ecoboard Industries Ltd.
		Associate	Associate Decor Limited
		Archid ply	Archid ply industries Ltd.
		Centuary	Centuary MDF
15	High Density (HDF) Prelaminated board	Pergo	Red Floor India
		Green Ply	Green Ply Industries Ltd.
16	Gypsum board	Gyproc Saint Gobain	Saint Gobain Gyprock India Ltd.,
		Lafarge	Lafarge Gypsum India Pvt. Ltd
		USG Boral Board	USG Board India (P) Ltd.
		Armstrong	Armstrong World Industries
17	Glass door hardware	Dorma	Dorma India Pvt Ltd
		Kich	Kich Architectural Products Ltd.
		Classic	Classic hardware
		Squash	Squash glass doors
		Hafele	Hafele India Pvt. Ltd
		Ozone	Ozone Hardware.
		Geze	GEZE GmbH
18	Hydraulic door closers/Floor springs	Dorset	Dorset Industries Pvt Ltd
		Godrej	Godrej locking solutions & systems
		Hardwyn	Hardwyn hardware
		MAGNUM KIT	Mukund Overseas
		Dorma	Dorma India Pvt Ltd
		Everite	Everite agencies
19	Locks & Latches	Dorset	Dorset Industries Pvt Ltd
		Godrej	Godrej locking solutions & systems
		Hitech	Globe Locks India
		Hafele	Hafele India Pvt. Ltd
		Harrison	Harrison locks
		Plaza	Bharat lock House
		Yale	ASSA ABLOY India (P) Ltd.
		Link	Link Locks

Sl. No	Material Description	Brand	Make
20	Metalic / Steel Fire Door	Shakthi Hormann	Shakthi Hormann Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		MPP Schodders	MPP Technology Pvt.Ltd.
		NAVAIR	NAVAIR International Pvt Ltd
		Signumfire Protection	Signumfire Protection Pvt. Ltd
		Sukri	Sukri Fire doors Pvt.Ltd
		Kenwood	Kenwood Ply & Board
21	Fire Smoke Seal	Godrej	Godrej Security solutions
		Hilti	Hilti India Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		Atroflame	Atroflame Ltd.
22	Fire rated hardware	Raven	Raven Global
		Dorma	Dorma India Pvt Ltd
		Ingersolrand	Ingersolrand (India) Ltd
		Dorset	Dorset Industries Pvt Ltd
		Backers FS	Backers FS
23	Non Metalic Fire door	Geze	GEZE GmbH
		NAVAIR	NAVAIR International Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		Godrej	Godrej Security solutions
24	Butt openable shutters Hinges window	Kenwood	Kenwood Ply & Board
		Hafela	Hafele India Pvt. Ltd
		Earl Bihari	Earl Bihari India Pvt Ltd.
		Dorma	Dorma India Pvt Ltd
		Dorset	Dorset Industries Pvt Ltd
25	Mild Steel Butt Hinges/ hinges Piano	Alu Alpha	Alu Alpha India
		Jolly	Jolly Engineering works
		Supreme	Supreme
		Saswat	Saswat
		Deepak	Deepak
		Swift	Swift screws
		Garg	D P Garg & Company
		Amit	Lovely metal industries Pvt Ltd.
26	Stainless steel Butt hinges	Jyoti	Jyoti Architectural Pvt Ltd.
		Prayag	Prayag Polymers (P) Ltd
		Ozone	Ozone Hardware.
27	Concealed tower bolt	Dorma	Dorma India Pvt Ltd
		Ingersolrand	Ingersolrand (India) Ltd
		DORSET	Dorset Industries Pvt Ltd
		Alu Alpha	Alu Alpha India
28	UPVC doors. door frames and windows	Dorma	Dorma India Pvt Ltd
		Fenesta	Fenesta DCM Shriman
		Encraft	Encraft India Pvt.Ltd.
		LG	LG India Pvt. Ltd.
		Rehau	Rehau Unlimited Polymer Solutions
		Aluplast	Alu Alpha India
		Komarling	Profile India Window Technology Pvt.Ltd.
Duroplast	Duroplast Extrusion Pvt Ltd		

Sl. No	Material Description	Brand	Make
29	PVC Doors and Frames	Accucel	Accura Polytech Pvt.Ltd
		Sintex	Sintex plastic technology Ltd.,
		Duroplast	Duroplast Extrusion Pvt Ltd
		Polyline	Polyline extrusion Pvt Ltd
		Rajshri	Rajshri Productions Pvt. Ltd.
		NCL VEKA	NCL VEKA Ltd
30	Stainless friction hinges	Hettich	Hettich India Pvt .Ltd.
		Hafele	Hafele India Pvt. Ltd
		Securistyle	Securistyle India Pvt .Ltd.
		Earl Bihari	Earl Bihari India Pvt Ltd.
		EBCO	EBCO
		ROTO	ROTO Frank Asia
31	Float Glass	Saint Gobain	Saint Gobain India Pvt Ltd
		Modiguard	Gujarat Guardian Ltd.
		Asahi	Asahi India glass Ltd.
		Pilkinton	Pilkinton India Pvt
32	Reflective glass	Saint Gobain	Saint Gobain India Pvt Ltd
		Asahi	Asahi India glass Ltd.
		Pilkinton	Pilkinton India
		Modifloat	Gujarat Guardian Ltd.
		Glaverbel	Glaverbel India
33	Tempered reflective/clear glass	Saint Gobain	Saint Gobain India Pvt Ltd
		FUSO	FUSO Glass India Pvt .Ltd.
		Gurind	Gurind India
		Asahi	Asahi India glass Ltd.
		Modiguard	Gujarat Guardian Ltd.
		Impact safety	Impact safety glass works Pvt Ltd
34	Fire rated glass	Contra flam /Pyroswiss of Saint Gobain	Saint Gobain India Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		Pyran of Schott	Schott glass India Pvt Ltd.
		Pilkinton	Pilkinton India
29	PVC Doors and Frames	Accucel	Accura Polytech Pvt.Ltd
		Sintex	Sintex plastic technology Ltd.,
		Duroplast	Duroplast Extrusion Pvt Ltd
		Polyline	Polyline extrusion Pvt Ltd
		Rajshri	Rajshri Productions Pvt. Ltd.
		NCL VEKA	NCL VEKA Ltd
30	Stainless friction hinges	Hettich	Hettich India Pvt .Ltd.
		Hafele	Hafele India Pvt. Ltd
		Securistyle	Securistyle India Pvt .Ltd.
		Earl Bihari	Earl Bihari India Pvt Ltd.
		EBCO	EBCO
		ROTO	ROTO Frank Asia
31	Float Glass	Saint Gobain	Saint Gobain India Pvt Ltd
		Modiguard	Gujarat Guardian Ltd.
		Asahi	Asahi India glass Ltd.
		Pilkinton	Pilkinton India Pvt

Sl. No	Material Description	Brand	Make
32	Reflective glass	Saint Gobain	Saint Gobain India Pvt Ltd
		Asahi	Asahi India glass Ltd.
		Pilkinton	Pilkinton India
		Modifloat	Gujarat Guardian Ltd.
		Glaverbel	Glaverbel India
33	Tempered reflective/clear glass	Saint Gobain	Saint Gobain India Pvt Ltd
		FUSO	FUSO Glass India Pvt .Ltd.
		Gurind	Gurind India
		Asahi	Asahi India glass Ltd.
		Modiquard	Gujarat Guardian Ltd.
		Impact safety	Impact safety glass works Pvt Ltd
34	Fire rated glass	Contra flam /Pyroswiss of Saint Gobain	Saint Gobain India Pvt Ltd
		Promat	Promat fire & Insulation (P) Ltd
		Pyran of Schott	Schott glass India Pvt Ltd.
		Pilkinton	Pilkinton India
35	Anchor / SS Stone Cladding Clamps Dash fasteners	Hilti	Hilti India Pvt Ltd
		Fischer	Fischer India
		Anchor	Anchor Ltd
		Nutech	Nutech fasteners
		Canon	Cannon
		Wuerth	Wuerth India Pvt. Ltd
		Trixel	Axel India Pvt.Ltd
		Helpfen	Helpfen Gmbh
36	Structural Steel	SAIL	SAIL
		VIZAG	RINL
		TISCO	TATA STEEL
		JSW	JSW
37	M.S.Pipe. Tubes	SAIL	SAIL
		TISCO	TATA STEEL
		JINDAL	JSW
		Apollo	
38	Stainless steel	Salem	SAIL
		Connect	Connect Ltd.
		Jindal	JSW
		SAIL	SAIL
		KINGSTON	KINGSTON Brass
39	Stainless steel Bolts.washers, nuts	Kundan	Kundan Industires Ltd
		Atul	Atul fasteners Ltd
		Hilti	Hilti India Pvt Ltd
40	Stainless steel pressure plate screws	Kundan	Kundan Industires Ltd
		Pooja	Pooja steel corporation
		Atul	Atul fasteners Ltd

Sl. No	Material Description	Brand	Make
41	Welding rods	Advani	Advani oerlikon Ltd.
		ESAB	ESAB India Pvt. Ltd
42	Metal Deck Sheet	TATA	TATA STEEL
		SAIL	SAIL
43	Shear Stud / Connector	KOCO	KOSTER & Co.
44	Vitrified tiles	Jhonson	Prism Jhonson Ltd
		Kajaria	Kajaria Ceramic Ltd
		Somany	Somany Ceramic Ltd
		NITCO	NITCO Ltd
		RAK	RAK Ceramic India Pvt Ltd.
		Varmora Granito	Varmora Granito Granite Pvt. Ltd
45	Glazed Ceramic tiles (Also wall tiles)	Jhonson	Prism Jhonson Ltd
		Kajaria	Kajaria Ceramic Ltd
		Somany	Somany Ceramic Ltd
		NITCO	NITCO Ltd
		RAK	RAK Ceramic India Pvt Ltd.
		Varmora Granito	Varmora Granito Granite Pvt. Ltd
46	Synthetic Sports flooring	Armstrong	Armstrong flooring
		LG	LG Hausys India
		Wondorfloor	RMG Polyvinyl India Ltd.
47	Linoleum sports flooring	Armstrong	Armstrong flooring India Pvt Ltd.
		Forbo	Forbo flooring India Pvt. Ltd.
		Gerflor	Gerflor flooring
48	False floor	Hewetson	Hewetson India
		Access floor system	Access Floor System
		Unifloor	Unifloor India Ltd
		Unitile	Unitile office systems Pvt. Ltd
		PINNACLE	PINNACLE
		Kebao	Inner Space (Distributors)
49	Engineered wood floor	Armstrong	Armstrong flooring
		Mikasa Real wood floors	Green Lam Industries
		New wood	New Wood India Ltd
		Werner	Durafloor werner GmbH
		Pergo	Red Floor India
50	Floor spring	Dorma	Dorma India Pvt Ltd
		Ingersolrand	Ingersolrand (India) Ltd
		OZONE	Ozone Hardware.
		GEZE	GEZE GmbH
51	Cement concrete parking tiles	NITCO	NITCO Ltd
		Ultra	Ultra tile Private Ltd
		Eurocon	Eurocon tiles India
		Dazzle	Dazzle Designer Tiles Pvt Ltd
		NTC	NTC Parking tiles
		Hindustan tiles	Hindustan tiles, Ranchi Pune

Sl. No	Material Description	Brand	Make
52	Synthetic Carpet tiles	TOLI	TOLI corporation
		Hollitex	Hollitex carpet tiles
		Standard Carpets	Standard Carpets
53	Vitrified paving tiles	PAVIT	PAVIT Ceramics Pvt Ltd
54	Glass mosaic tiles	Italia	Tile Italia mosaics Pvt Ltd.
		Coral	Coral tiles
		Mridul	Mridul tiles
		Palladio	Palladio Mosaics
		Bisazza	Bisazza Italy
55	Thermal Insulation treatment	Pidilite	Pidilite Industries
		Elastospray	BASF
56	Acoustic Insulation	Twingerinsul	U.P.Twiga fiber glass Ltd
		Lloyd Insulation	Lloyd Insulation (India) Ltd
		Saint Gobain Gyproc	Saint Gobain Gyproc India
		Himalyan Acoustics	Himalyan Acoustics
		Knauf	Knauf Gypsum India Pvt. Ltd.
57	UPVC Pipes and fittings (Rain water pipes)	Anutone	Anutone Accoustics Ltd.
		Supreme	Superme Industries Ltd
		Prince	Prince Pipes and fittings Ltd
		Finolex	Finolex Industries Ltd.
		Prepoly	Premier PVC Industry
		Astral	Astral polytechnik Ltd
58	Sandwich PUF panelled roofing sheets	Ashirwad	Ashirwad PVC Pipes
		Flow Guard	Flow Guard
		Lloyd Insulation	Lloyd Insulation (India) Ltd
		JINDAL MECTEC	JINDAL Mectec Pvt. Ltd
		Danpalon	Danpal Light architecture
59	Polycarbonate Sheet	GE Plastic	GE Silicones
		LEXAN	LEXAN Ltd
		MG Polyplast	MG Polyplast
		GE Lexon	GE Silicones
		Danpalon	Danpal Light architecture
60	False ceilings	Alcox	Hindeggan Alcox Ltd.
		Polygal	Polygal India Pvt Ltd.
		Saint Gobain Gyproc	Saint Gobain Gyproc India
		Armstrong	Armstrong World Industries
		USG Boral	USG Boral
		Aerolite	Andhra Polymers Pvt. Ltd. / Aerolite Industries Pvt.Ltd.
		Hunter Dougals	Hunter Dougals
		Gridsquare	Gridsquare Ceilings
61	False Ceiling Members (Perimeter, Ceiling section, intermediates, angles etc.,)	Knauf	Knauf Gypsum India Pvt. Ltd.
		Anutone	Anutone Accoustics Ltd.
		Armstrong	Armstrong World Industries
		Aerolite	Andhra Polymers Pvt. Ltd./Aerolite Industries Pvt.Ltd.
		Gridsquare	Gridsquare Ceilings
		Gypframe steel	British Gypsum
Lloyd	Lloyd Insulation (India) Ltd		

SI. No		Brand	Make
			Saint Gobain
62	Synthetic enamel Paint	Premium gloss enamel	Asian paints Ltd
		Dulux	ICI dulux Ltd
		Nerolac	Nerolac Paints Ltd
		Berger	Berger Paints
		Nippon	Nippon Paint India Ltd.
63	Pink primer	Wood primer	Asian Paints
		Dulux	ICI Dulux
		Nerolac	Nerolac Kansia Nerolac Paints
		Berger	Berger Paints
		Nippon	Nippon
64	Red Oxide Zinc Chromate primer	High performance yellow metal primer	Asian Paints
		Dulux	ICI Dulux
		Nerolac	Nerolac
		Berger	Berger Paints
		Nippon	Nippon
65	Oil Bound Distemper	Tractor Agalock	Asian Paints
		Dulux (Maxilite)	Dulux
		mG Polyplast	Nerolac
		Berger (Bisom)	Berger Paints
66	Acrylic emulsion	Premium emulsion	Asian Paints
		Dulux (Super Cover)	ICI Dulux
		Nerolac (Beauty Gold)	Nerolac
		Berger(BISM)	Berger Paints
67	Water Proof Cement paint	Asian exterior wall primer	Asian Paints
		Berger	Berger Paints
		Surfa	Surfactoats (India) Pvt. Ltd.
		ICI DULUX	ICI Dulux
		Cem Colour	Snowcem Paints
68	Acrylic smooth exterior paint	Dulux	ICI Dulux
		Apex	Asian Paints
		Nerolac	Nerolac
		Berger	Berger
		Nippon	Nippon
69	Premium Acrylic smooth exterior paint with silicon additives	ULTIMA	Asian Paints
		Dulux	ICI Dulux
		Nerolac	Nerolac
		Berger	Berger
70	Cement based wall putty	J.K.wall putty	J. K. Cement Ltd
		Birla wall care	Birla Cements Ltd.
		Asian paints	Asian paints Ltd
		Altek	NCL Alltek & seccold Ltd.
		Berger	Berger
		Ardex Endura	Ardex Endura India Pvt. Ltd.
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
71	Acrylic textured plaster	Apex Duracast	Asian Paints
		Spectrum paints	Spectrum paints Ltd.
		Heritage	Heritage Rajkamal Group
		Asian paints	Asian Paints
		Nerolac	Nerolac

Sl. No	Material Description	Brand	Make
72	Ready mix cement plaster	Readi Plast	Ultra Tech Cement Ltd
		Gyproc Plasters	Saint Gobain Gyproc India
		Ultra tech	Ultra Tech Cement Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
73	Melamine Polish	Asian paints	Asian Paints
		Melamine Gold wudfin	Pidilite Industries
		Polycure	Polycure Malaysia
74	Fire retardant paint	Jotun	Jotun paints
		Hilti	Hilti India
		Akzonobel	Dulux Akzonobel Paints
		Asian Paints	Asian Paints
		STPL	STPL Ltd.
75	Anticorrosive bitumastic paint	Berger	Berger Paints India Ltd
		Shalimar	Shalimar paints India Ltd.
		Bituminous black	Asian Paints
76	Cement Primer	Asian paints	Asian Paints
		JK Primaxx	J. K. Cement Ltd
		Berger	Berger Paints India Ltd
77	Epoxy paint	Asian epoxy	Asian Paints
		Berger	Berger Paints India Ltd
		Shalimar	Shalimar paints
		STP	Shalimar Tar Products
		Ardex Endura	Ardex Endura India Pvt. Ltd.
		Nerolac	Nerolac
78	Epoxy coating	BASF	BASF India Ltd
		Fosroc	Fosroc India
		Laticrete	MYK Laticrete India
		Ardex Endura	Ardex Endura India Pvt. Ltd.
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
79	Silicon coating	Dow corning	Dow corning India
		BASF	BASF India Ltd
		GE	GE Silicones
		Wacker	Wacker silicones.
80	Interlocking Concrete Paver Blocks	NITCO (ROCKARD)	NITCO
		Ultra	Ultra tile Private Ltd
		REGENCY	Regency
		Hindustan tiles	Hindustan tiles, Ranchi , Pune
		Vyara tiles	VYARA TILES Pvt Ltd./ Surat
		BHARAT (NILSAN)	Bharat
		Dazzle	Dazzle Designer Tiles Pvt Ltd
		Shree	Shree Bharat Paver blocks
		Basant Betons	Basant Betons
81	Solar studs/ Median markers	3M	3M Science
		Avery Dennison	Avery Dennison India Pvt Ltd.
		Nikkalite	Nippon carbide Industires (USA)
82	Polycarbonate Convex mirrors, Rubberised road hump	Unique safety solutions	Unique safety solutions

Sl. No	Material Description	Brand	Make
83	Mirror	Modi Guard	Gujarat Guardian Ltd.
		Saint Gobain	Saint Gobain Glass India Ltd.
		AIS mirror	Asahi India glass Ltd.
		Atul	Atul glass Industries Ltd.,
84	Vitreous Commodos/ Wash basin	Hindware	HSIL Ltd
		Roca	ROCA Bath room products
		Parryware	ROCA Bath Pvt. Ltd.
		Kohler	Kohler world wide
		CERA	CERA Sanitaryware Ltd.
85	Flushing Cistern	Jaquar	Jaquar Group
		Parryware	ROCA Bath Pvt. Ltd.
		Kohler	Kohler world wide
		Hindware	HSIL Ltd.
		CERA	CERA Sanitaryware Ltd.
86	SWR PVC Pipes & fittings	Jaquar	Jaquar Group
		Supreme	Superme Industries Ltd
		Astral	Astral polytechnik Ltd
		Finolex	Finolex Industries Ltd.
		Flowgard	Ashirwad PVC Pipes
87	Stainless Steel Kitchen Sink	Prince	Prince Pipes and fittings
		Jhonson	Prism Jhonson Ltd
		Diamond	Pheonix Appliances Pvt. Ltd.
		Jindal	Centuary polytech
		Nilkanth	Nilkanth
		Nirali	Jyoti (India) metal Industries
		Hindware	HSIL Ltd
		Silver shine	Blue stone sanitary Industries
		Joyna	Joyna
		Navkar	Shri Navkar Metals Ltd.
88	Centrifugally Caste (Spun) Iron Soil Pipes	Franke	Franke India Ltd.
		Futura	Futura Kitchen Sinks India Pvt
		Neco	Jayaswal Neco Ltd
		SKF brand	SKF Industries
		HEPCO	Hepco
89	PE-AL-PE Composite pipes	Bengal Iron Corporation	Bengal Iron Corporation
		RPMF	Raj Pattern Makers and Founders Pvt. Ltd.
		Kitec	Kitec Industries (India) Pvt.
		TATA	TATA Steel Ltd
90	G I Pipes	Zenith	Zenith Birla (India) Ltd.
		HISSAR	HISSAR
		Jindal	Jindal Pipes Ltd.
		Zoloto	Zoloto Industries
91	G I Pipe fittings	Unik	Unik malleables
		HB	HB Industries
		ICS	Shree samarth Engineers
		Zoloto	Zoloto Industries
92	Water Valves supply	Leader	leader valves Ltd.
		ARCO	Arco valves Pvt. Ltd.
		Zoloto	Zoloto Industries

Sl. No	Material Description	Brand	Make
93	CPVC pipes and fittings	Supreme	Superme Industries Ltd
		Finolex	Finolex Industries Ltd.
		Astral	Astral polytechnik Ltd
		Prince	Prince Pipes and fittings Ltd
		Truflo	HIS Ltd.
		Birla Aerocon	HIL Ltd.
		Ashirwad	Ashirwad PVC Pipes
	Flowgard	Flow Guard	
94	PVC / HDPE water storage tanks	Sintex	Sintex plastic technology Ltd.
		Vectus	Vectus Industries Ltd
		Supreme	Superme Industries Ltd
95	DI Pipes	Electrosteel	Electrosteel
		Jindal	Jindal
		Tata Ductura	Tata Ductura
96	DI Fittings	Electrosteel	Electrosteel
		Jindal	Jindal
		Tata Ductura	Tata Ductura
97	Water supply fixtures like bibcock, Shower panels	Jaquar	Jaquar Group
		Parryware	Roca bath room products Pvt.
		Johnson	Prism Jhonson Ltd
		MARC	MARK Showers
		HINDWARE	HSIL Ltd
		Prayag	Prayag Polymers (P) Ltd
98	Air release valve	Kirloskar	Kirloskar brothers Ltd
		RBM	AFS Ltd.
		Kartar	Kartar valves private Ltd.
99	Centrifugally (Spun) Cast Iron	Electrosteel	Electrosteel castings Ltd.
		Lanco/Sripipes	Electrosteel castings Ltd.
		Jindal	Jindal saw Ltd.
		Kesoram	Kesoram Industries Ltd
100	Spun cast iron fittings	Neco	Jayaswal Neco Ltd
		Kartar	Kartar Valves Private Ltd.
		Electrosteel	Electrosteel castings Ltd.
		Kapilansh Centrifugal	Kapilansh Dhatu Udyog(P)Ltd.
		SKF brand	SINGHAL IRON FOUNDRY
101	CI double flange sluice valve	Kirloskar	Kirloskar brothers Ltd
		RBM	AFS Ltd.
		Kartar	Kartar valves private Ltd.
		IVS	Indian valves private Ltd.
		Zoloto	Zoloto Industries
		BURN	BURN
		Leader	Leader valves Ltd.
102	CI double flanged non return valve	Kirloskar	Kirloskar brothers Ltd
		Fluidtech	Fluidtech
		Zoloto	Zoloto Industries
103	Gun metal Valves	Zoloto	Zoloto Industries
		Leader	Leader valves Ltd.
		Sant	Sant valves Pvt Ltd
		Audco	L&T Valves

Sl. No	Material Description	Brand	Make
104	PTMT/PVC water supply sanitary fittings, bib cocks,	PEARL	Precision Products
		Prayag	Prayag Polymers (P) Ltd
		Supreme	Supreme Industries
105	RCC Pipes	Indian Hume Pipe	Indian Hume Pipe Ltd.
		Madurai spun pipe	Madurai spun pipe company
		Lakshmi Sood & Sood	Lakshmi Sood & Sood Pipe Co.
		Jain & Co	Jain spun pipes Co.
106	CI Manhole cover	Neco	Jayaswal Neco Ltd
		HEPCO	Binay Udyog Pvt. Ltd.
		BIC	Bengal iron corporation
107	SFRC Cover and grating	KK	KK Manhole and gratings Co Pvt Ltd.
		Advent	Advent concrete vision
		Kutty	Kutty Industries
		Nu-TEC	Nu-Tech concrete products (P) Ltd.
108	Plastic Encapsulated Foot Rest	KK India	KK Manhole and gratings Co Pvt Ltd.
		KGM	KGM Exports
		Accurate Buildcon	Accurate Buildcon company.
109	Spun cast iron covers & gratings	Neco	Jayaswal Neco Ltd
		Jagannath	Sri Jagannath Iron Foundry Pvt Ltd.
		Kapilansh Centrifugal	Kapilansh Dhatu Udyog(P)Ltd.
		SKF brand	SINGHAL IRON FOUNDRY Pvt. Ltd
110	Aluminium doors/windows sections	Hindalco	Hindalco Industries Ltd.
		Jindal	Jindal Aluminium Ltd.
		Padmavathi Extrusion	Padmavathi Extrusion Private Ltd.
		Hyd	Hydro Extrusion
		Omcalco Extrusion	Omcalco Extrusion Pvt. Ltd.
		Bhoruka	Bhoruka Aluminium Ltd.
		Indal	Indian Aluminium Ltd
111	Aluminium systems/Anodised aluminium fittings for doors/windows	Define	Define Overseas Pvt. Ltd.
		Schueco	Schueco India Pvt. Ltd.
		Bhoruka	Bhoruka Aluminium Ltd.
		Kawneer	Kawneer India
		Hardima	Hardima sales corporation
		Everite	Everite Agencies
112	Friction stay hinges	Earl Bihar	Earl Bihari Pvt. Ltd.
		KINLONG	Kinlong Industries
113	EPDM Gaskets	Anand	Anand NVH products (P) Ltd.
		Roop	Roop Polymers Ltd
		Bohra	Bohra rubber Pvt Ltd.
		Hanu	Hanu Industries
		Amee Rubber	Amee Rubber Industries Pvt Ltd.

Sl. No	Material Description	Brand	Make
		Bohra	Bohra rubber Pvt Ltd.
		Hanu	Hanu Industries
		Amees Rubber	Amees Rubber Industries Pvt Ltd.
114	Silicon Gaskets	Sree Gaurav	Sree Gaurav Rubber products
115	Masking Tapes	3M	3M
		Sun	Sun
		Wonder polymer	Wonder Tape Industries
		Roop	Roop Polymers Ltd
116	Water proofing compound	Fosroc	Fosroc India
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Sika	Sika India
		MYK Schomburg	MYK Arments Pvt. Ltd.
		Penetron	Penetron India Pvt Ltd
		Dr. Fixit	Pidilite Industries
		Accoproof	ACC Cements Ltd
		Ardex Endura	Ardex Endura (India) Ltd
		Alchemica	Alchemica Ltd.
117	Membrane Water proofing system	BASF	BASF India Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		STP Ltd	Shalimar Tar Products
		MYK Schomburg	MYK Arments range of products
		SmartCare Membranes	Asian paints
		Dr Fixit	Pidilite Industries
		Alchemica	Alchemica Ltd.
		Ardex Endura	Ardex Endura Ltd
118	Chemical water proofing system	Hydro tech	Hydro tech Ltd
		BASF	BASF India Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		MC-Bauchemie	MC-Bauchemie India Ltd
		Sika	Sika India
		Sunanda speciality coating	Sunanda speciality coating Pvt Ltd.
		Perma construction Aid	Perma construction Aid Pvt Ltd,
		Fosroc	Fosroc India
		Dr. Fixit	Pidilite Industries
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		SKK Brand	SKK Ltd
		Berger	Berger Paints India Ltd
		JSW	JSW
Essar	Essar group		

Sl. No	Material Description	Brand	Make
119	Water stops	Hydrotite	Sika India
		BASF	BASF India Ltd
		Dr. Fixit	Pidilite Industries
		Ardex Endura	Ardex Endura Ltd
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Hydroswell	Sika India
120	Aluminium composite panels	Alucobond	3A Composites India Pvt.Ltd.
		Eurobond	M/S Euro panel products Pvt. Ltd
		Aludecor	M/S Aludecor Lamination Pvt. Ltd
		Reynobond	Reynobond
		Alpolic	Alpolic
		Alstrong	Alstrong
121	Epoxy	Fosroc	Fosroc India
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Shalibons	Shalimar Tar Products
		Asian paints	Asian Paints
		Ardex	Ardex Endura India Pvt. Ltd.
122	PVC Door Frames & Shutters	Rajshri	Rajshri Productions Pvt. Ltd.
		Plastiwood	Plasiwood
		Sintex	Sintex plastic technology Ltd.
		Accucel	Accura Polytech Pvt.Ltd
123	PVC Flooring	LG Hausys	LG Hausys
		Gerflor	Gerflor flooring
		Armstrong	Armstrong World Industries
124	Grass Paver	Unistone	Unistone
		Ultra	Ultra Ltd.
125	FRP Door Frames & Shutter	Meena Fibre Glass.	Meena Fibre Glass
		Duroplast	Duroplast Extrusion Pvt Ltd
		Cactus	Cactus
		Polyline.	Polyline
126	Non Metallic Floor Surface Hardners	Ironite	Ironite
		Hardonite	Hardonite
		FOSROC	Fosroc India
		SIKA	SIKA India
		BASF	BASF India Ltd
		CICO	CICO Technologies Ltd.
		Pidilite	Pidilite Industries Ltd
127	PU Enamel Metallic Paints on MS Structure & Epoxy paints (Premium Quality)	SKK	SKK Ltd
		Akzonobel	Akzonobel
		Asian	Asian Paints
		Berger	Berger Paints India Ltd
		MRF	MRF Paints
128	Rockwool/Glasswool insulation	Twigafiber	Twigafiber glass Ltd
		Lloyd Insulation	Lloyd Insulation Ltd.
		Superme	Superme Industries Ltd
129	Actactic Polypropylene (APP) Modified Water proof Membrane	STP	Shalimar Tar Products
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Bitumat	Bitumat Co. Ltd
		Pidilite	Pidilite Industries Ltd
		Ardex Endura	Ardex Endura
		Hydrotech Ltd.	Hydro tech Ltd

Sl. No	Material Description	Brand	Make
130	Structural Glazing	Modi	Modi Guard
		Saint Gobain	Saint Gobain Glass India Ltd.
		Asahi	Asahi India glass Ltd.
		Glaverbel	Glaverbel India
131	Adhesive for AAC Block/Tiles	Ultratech	Ultra Tech Cement Ltd
		Ardex Endura/Gold Star	Ardex Endura
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
132	Aluminium Framework	MFE(MIVAN)	MIVAN
		S-Form	S-Form
		MFS	MFS
133	EPDM Water Proofing Membrane	Smart Care	Asian Paints
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Pidilite	Pidilite Industries
		STP	Shalimar Tar Products
134	PU Coating (UV Resistant Liquid Applied Coating)	Smart Care	Asian Paints
		Pidilite	Pidilite Industries
		BASF	BASF
		Fosroc	Fosroc India
		SIKA	SIKA India
135	High end Exterior Textures	Allura/Graniza Range	Asian Paints
		SKK Brand	SKK Ltd
		Berger	Berger Paints India Ltd
136	Acrylic Exterior Textures	Asian paints	Asian Paints
		Berger	Berger Paints India Ltd
		Akzonobel	Akzonobel
		Ebco	Ebco
		Nerolac	Nerolac Paints Ltd
137	Puff Insulations	Smart Care	Asian Paints
		Lloyd Insulation	Lloyd Insulation (India) Ltd
		Fosroc	Fosroc India
		BASF	BASF
		Pidilite	Pidilite Industries Ltd
		Supreme	Supreme Ltd
138	Galvolume sheet for roofing, cladding, Sandwich panel	Lloyd Metal Craft	Lloyd Insulations.
		Tata Blue Scope	Tata Bluescope
		Bhushan	Bhushan steel
		JSW	JSW
		Essar	Essar group
139	Aluminium composite panels	Hynadecor	Hynadecor
		Alstone	Alstone
		Eurobond	Eurobond Pvt.Ltd.
140	Mechanical Coupler for Reinforcement	Dextra	Dextra India Pvt. Ltd.
		Sanfield	Sanfield India Ltd.
		Usha Ismal	
		BBR	
		Moment	

TECHNICAL SPECIFICATION AND MAKE AND MODEL FOR ELECTRICAL PORTION

TECHNICAL SPECIFICATION FOR GS ITEMS

1. CIRCUIT POINT:

Wire of size 1.5 sq. mm, 1100 V grade FR PVC insulated, multistranded copper wire with relevant IS spec (IS 694 latest) in PVC concealed conduit and approved color with necessary junction boxes ceiling rose, angle holder etc. as required.

2. SWITCH 6A:

Flush type switch - 6 A to operate on AC single phase 240V, 50 Hz supply conforming to IS 3854/latest. Switches controlling fans and plug points shall have engraved letters 'F' and 'P' respectively as applicable/available for the category.

3. PLUG POINT 6A:

Wiring shall be with FR PVC insulated, multistranded copper of size 1.5 sq.mm with IS spec (IS 694 latest) with 5 A modular switch and modular sockets mounted on GI box concealed on wall. The earthing shall be 14SWG copper conductor.

4. PLUG POINT 16A:

The plug point shall be 5 pin, 16A rated. A modular switch of 16A (IS 1293) shall be provided with plug socket. This shall be fixed on GI box. The plug point shall be by means of 2 runs of 4 sq.mm FRLS PVC insulated, multi stranded copper wire, 1100 V grade relevant IS spec (IS 694 latest) and 1 run of 1.5 sq.mm FRLS PVC insulated, multi stranded copper wire, 1100 V grade relevant IS spec (IS 694 latest).

5. CEILING FAN POINT:

The ceiling fan point wiring will be done with FRLS PVC insulated, PVC sheathed multi stranded copper wire of size 1.5 sq. mm, 1100V grade with IS Spec (IS 694) with fan junction box. A modular switch of 6A capacity shall be provided on switch board.

6. CEILING ROSE:

Surface semi recessed types for pendent lighting and fan, wherever require, to be used in circuits with voltage not exceeding 240V, current 5A, conforming to IS 371/latest.

7. DB MAINS 6 SQ. MM & 10 SQ.MM :

Wiring which is not covered under point wiring such as connection from Main Distribution Board to other Sub distribution board will be measured and recorded as DB mains. The DB mains shall be by means of Four nos of 6 /10 sq.mm FRLS PVC insulated, multi stranded copper wire, 1100 V grade relevant IS spec (IS 694 latest) and 1 run of 2.5 sq.mm FRLS PVC insulated, multi stranded copper wire, 1100 V grade relevant IS spec (IS 694 latest) in respective colours. All the DB main shall run suitable separate PVC conduit with 8 SWG copper wire for earth connectivity.

8. BOXES FOR MODULAR WIRING ACCESSORIES:

Boxes for housing modular wiring accessories (switches, switched socket outlets, telephone/computer/TV outlets, bell pushes, electronic fan regulators etc.) shall be fabricated from minimum 1.6 mm thick MS sheets provided with rust inhibiting zinc phosphating treatment. The MS boxes shall be suitable for a grid plate fixed over it for mounting wiring accessories leaving ample space at the back and on the sides for accommodating wiring conductors, MS boxes shall be provided with a brass earth terminal. The MS boxes shall have knockout holes for conduit entry which shall be secured in position by check nuts and provided with bushes. No timber shall be used for any supports.

9. MOULDED COVER PLATES:

Switches, receptacles and telephone system outlet in wall shall be provided with moulded cover plates of shape, size and colour approved by the Engineer -in- charge made from high impact resistant, flame retarding and ultra-violet stabilized engineering plastic, and secured to the box with counter sunk round head chromium plated brass screws. Where two or more switches are installed together, they shall be provided with common switch cover plate as described above with notches to accommodate all switches either in one, two and three rows.

One and two gang switch cover plate, telephone outlet cover plate, 6/16A sockets with switch plates, shall have the same shape and size. Wherever five switches, seven switches, ten switches and eleven switches are to be fixed the next higher size of gang switch cover plate to be used and opening shall be provided with blank off covers at no extra cost.

10. PVC PIPE:

- 10.1 **TYPE & SIZE OF PVC PIPES:** All PVC pipes for wiring shall be conforming to IS 9537/P3/1983 with grey/ivory colour. No PVC pipe less than 20mm +/- 0.2mm in diameter with wall thickness of 2mm shall be used.

The number of insulated conductors that can be drawn into PVC pipes should be as per table III of IS:732/1963 and should be easy to pull at the time of rewiring. Conduit inspection type coupler at reasonable interval shall be provided. Scope includes supply of couplers, joint box, bends etc. at contractor's cost.

- 10.2 **FIXING / CONCEALING OF CONDUIT:** Conduits shall be laid inside roof slab or wall for concealed wiring. Replastering shall be done after laying the conduits in the wall / roof. Conduits shall be attached with existing PVC pipe if already laid in roof.

11. SYSTEM OF WIRING:

Concealed or surface wiring system shall be adopted for wiring as per site condition as instructed by Engr. In Charge. The rate of wiring to point shall include the cost of ceiling rose with two/three terminals (as applicable), round block/plate, earthing and all related accessories required for safe wiring.

The system of wiring shall be such that separate phase and neutral wires shall be taken from the switch control board to each and every light/ fan point. Suitable Bakelite connectors shall be used in the switch control board for termination of phase and neutral wires controlling the light points. No jointing or twisting of wires is permitted either inside the control boards or anywhere else outside. Necessary earth continuity connection to fan/ light / socket points shall be provided along with wiring cable. Connection to light/fan from 2 ceiling rose shall be with 3core 1.5 sq.mm flexible copper cables. The wiring shall be carried out in an approved manner satisfying the

relevant IS specification, code of practice available and additional specifications applicable if any for surface/ concealed wiring system.

The route of the wiring is to be decided in consultation with the authorised representative of Engineer-in charge. Chipping/ replastering of wall/ceiling as required for wiring shall be carried out by the contractor.

Before commissioning the installations, the following tests shall be conducted and the results shall conform to the values specified and shall be certified by the person whose competency certificate has been attached.

1. Insulation resistance test
2. Testing of polarity of non-linked single pole switches
3. Earth continuity path (Bell tester)
4. Earth resistance value
5. Any other test as desired by Engineer-in-charge on safety point of view.

Modular type switches/ sockets/ceiling roses/unbreakable boxes for switch boards etc shall be used for carrying out the wiring. Switch boards and MCB DBs shall fixed in concealed/surface manner as per instruction of Engr. in charge. Blanking plates shall be provided for modular switch boards wherever necessary and this is in contractors scope of work at their cost.

Modular unbreakable boxes of various sizes shall be used for switch board as required. White finish cover frames shall be generally used with white switches and other accessories. Acceptance shall be obtained for the switches/boards etc. including colour selection before using at site. Modular boxes shall be inclusive of cover frame and inner plate.

12. MINIATURE CIRCUIT BREAKER (MCB):

MCB DP/SPN/SP/FP of rating as specified in the schedule, 240 V/415V, 50 Hz. to automatically isolate the electrical circuit under sustained overloads or short circuits and comply to IS 8828/96 latest.

MCB DB shall be powder coated made of 16SWG CRCA sheet with all internal accessories. All MCBs shall be of 10 KA breaking capacity with 'C' curve characteristics.

13. RESIDUAL CURRENT CIRCUIT BREAKER RCCBS:

RCCB DP/TPN of rating as specified, 240/415V, 50Hz with IS:12640 part-1 with 10KA short circuit withstand capacity. The RCCB shall be fixed on the distribution board in suitable enclosure

14. 4 FEET 1x20W LED LIGHT BATTEN FITTING:

Fitting shall be of complete set with driver circuit, LED lamp etc. complying with CEE/SWR specification.

LED 20W fittings on the wall shall be mounted on suitable PVC round blocks - 2 Nos fixed as per standard wiring practice.

15. CEILING FAN:

Electric Ceiling Fans 1200 mm sweep / 1400 mm sweep capacitor type with double ball bearing complete with 300 mm down rod, canopies, shackles, blades with speed regulator resistance type suitable for operation on 230V, 50 Hz, Single phase AC supply conforming to 374/1979 with Amendment No.1.

16. AIR CIRCULATOR:

Air circulators oscillating/ non-oscillating with regulator for use on single phase as IS 2997/1964 or latest.

17. 30W LED STREET LIGHT FITTING:

Fitting shall be of complete set with driver circuit, LED lamp etc. 30W Fitting shall be similar to Bajaj make Model No. BCLST 30W LED.

When the fitting is mounted on pipe bracket, 25x6mm size GI clamps with fasteners shall be used for fixing the fitting on the building/ on pole. When fixing on building/ on the pole, wiring shall be extended from ceiling rose/from OH line with 1.5sqmm copper wires as part of fixing of fitting which included in fixing cost.

18. LED LIGHT FITTINGS AND STREET LIGHT FITTINGS

General requirements of LED Type (INDOOR/OUTDOOR) light fitting.

CEE/SWR specification No: SWR/LED LIGHT FITTING (Indoor/Outdoor) /001-2016

1	LED Make	NICHIA / OSRAM / SEQU/ PHILIPS LUMILEDS / CREE / LEDNIUM / AVAGO
2	Type of LED	High Power, SMD (Surface Mounting Device) LED
3	Lumen Output/Efficiency	> 100 Lumens / Watt
4	Lumen Output at fitting level/ Efficiency	> 75 Lumens / Watt
5	LED Life	> 50,000 burning hours
6	Depreciation	30% max, after 50,000 burning hours
7	Colour Rendering Index (CRI)	> 75
8	Nominal Voltage	220 V AC
9	Input Operating Voltage	105-295 V AC
10	Power Factor	> 0.9
11	Protections	
	i. Surge protection	1.5 KV for 50 micro seconds
	ii. Over voltage protection	300 V AC for 2 minutes
	iii. High voltage protection	1.72 KV AC for 1 minute
	iv. Insulation Resistance	Minimum 2 mega ohms with 500 V megger
12	Driver Type	Constant Current driver with short circuit protection
13	Driver Components	Industrial grade only
14	THD	< 20%
15	Efficiency of Driver Electronic	Efficiency of driver > 85%
16	Construction of Housing	Pressure die cast aluminium or CRCA or Extrudedaluminium
17	Finishing	Power coated / anodized
18	Lamp Cover	Toughened glass of min. 0.8 mm thickness of sufficient strength of high transmittance efficiency (min.90%) Acrylic diffuser as per need of fitting
19	Secondary optics	Polycarbonate reflector / polycarbonate lence

20	Mounting	Indoor: Suitable for Surface / Recessed / Hung Type Outdoor: Suitable for Existing pole etc.,
21	Ingress Protection	IP 20 – Indoor IP 65 – Outdoor.

NOTE

- Supplied LED Luminaires shall conform to BIS:16107 or IEC 62722 and LEDs to BIS:16103 or IEC: 62717
- LED Luminaires shall also conform to LM- 79 (For quoted fitting) and LM- 80 for LEDs used.
- Firms have to submit LM80& LM79 test certificate from National/International accredited Laboratory and OEM certificate for compliance of BIS/IEC along with offer.
- Firms have to submit warranty certificate for 5 (five) years along with supply
- Make of whole LED Luminaire shall be as per approved make enclosed as annexure

Following information's are to be mentioned by consignee in indent description.

- Type of luminaire: Like Street light, Flood light, focus light, retrofit (for retrofit type luminaire, this specification may be referred wherever applicable)
- Total wattage of LED luminaire
- Arrangement of LED: Single LED/ Multi LED
- Dimensions if required.
- Indoor/ Outdoor
- Mounting type: ie., Indoor: Suitable for Surface / Recessed /Hung Type
- Outdoor: Suitable for Existing Pole etc.

19. 1.5 TONNAGE AC UNIT (INVERTER TYPE):

The 1.5 TON ACs to be supplied should meet the following parameters

Sl.no	Particulars	Technical specifications
1	Make	As per approved list of items
2	Tonnage	1.5 Tonne
3	Refrigerant	R 32
4	Rated Voltage	230V
5	BEE Rating	4 star
6	Rated frequency	50 Hz
7	Phase	Single Phase
8	Compressor	Rotary
9	Condenser coil	Copper
10	Cooling Capacity	5000 Watts minimum
11	Air Flow (Hi/ Mi/ Lo) in (m ³ /h)	875 minimum

The Stabilizer suitable for 1.5 TON split AC to be supplied should meet the following parameters.

- Similar to V-Guard model No. VG 400
- Capacity-12A
- Working Voltage-170V – 270V
- Time Delay-ITDS 3 Min±20 sec

- Thermal overload protection
- High voltage cut-off

20. EXHAUST FANS:

The exhaust fan shall be minimum of 3-star energy rating issued by BEE and conforming IS:2312

Technical parameters for Exhaust fan

Sl.no	Particulars	Technical specification
1	Make	As per approved list of items
2	Sweep	150/300 mm
3	BEE rating	3 Star
4	Rated power	150 W
5	Operating Voltage	230V
6	Rated Frequency	50 Hz
7	Air Delivery	280 m3 /min
8	Guard	With Louver Shutters

21. 2KVA, SINGLE PHASE ONLINE UPS

FAULT TOLERANT UNINTERRUPTED POWER SUPPLY (UPS) SYSTEM FOR PRS, EDP CENTERS AND OTHER SIMILAR REQUIREMENTS OF ONLINE UPS SYSTEM

21.1 Codes and standards

21.1.1 The UPS shall comply with the requirements of latest issue of relevant Indian Standard/ IEC. Some of the applicable IS/IEC standards are listed below:

IEC:62040-13. Ed. 1.0 b	Specification for UPS- General and Safety requirements
IEC:62040-2	Specification for UPS-EMC requirement
IEC:62040-3	Method of specifying the performance and test requirements of UPS
IS: 9000	Environmental test
IEC: 61643	Surge Protection Devices

21.1.2 The equipment shall also conform to the provisions of Indian Electricity rules and other statutory regulations currently in force.

21.1.3 In case of any contradiction between the standards listed in Cl. 2.1 and this specification, the requirements laid down in this

21.2 GENERAL REQUIREMENTS

- 21.2.1 The UPS system shall be an integrated system comprising of input rectifier, charger, inverter, static bypass switch and manual bypass switch. The charger shall be designed such that it shall be able to charge the battery in constant voltage, constant current mode. Charging capacity shall be at the rate of 0.1C ('C' is the AH capacity of the Battery).
- 21.2.2 The UPS system shall be suitable to feed all loads connected to output which are primarily computers, printers, servers, scanners, modems, etc.
- 21.2.3 The UPS system shall be of true double conversion with an in-built isolation transformer (copper wound) and shall be based on latest generation technology having proven performance of satisfactory operation for similar applications. UPS of up to 5 kVA capacity shall be provided with inverter of type PWM MOSFET or PWM IGBT. In UPS of capacity higher than 5 kVA, inverter of type PWM IGBT (IGBT modules only) shall be provided. All components shall be of quality and reliability that satisfies the requirements of a secure AC power to vital equipment. Components shall be capable of withstanding the thermal and dynamic stresses resulting from internal and external short circuits and circuit switching operations, etc.
- 21.2.4 The UPS shall be single phase system with single-phase input and single-phase output.

21.3 TECHNICAL REQUIREMENTS

21.3.1 Input Power Supply

21.3.1.1 The UPS shall be suitable for the following input power supply:

i)	For category A	
	Voltage	160V -280V for single 1 phase*
	Frequency	50 Hz \pm 8%

Standard voltage range is 160V – 280V. Optionally, the purchaser can ask for voltage range of 140 V – 280V.

21.3.2 UPS design & performance requirements

- 21.3.2.1 Incoming AC supplies shall be converted to DC through input rectifier. The rectifier/charger shall operate according to the constant voltage current limiting principle and shall incorporate a “Soft Start” feature to gradually accept load on initial energizing.
- 21.3.2.2 The rectifier section/battery charger of the UPS system shall be capable of precise regulation to prevent damage to the battery. The output voltage of rectifier’s DC bus without the battery shall be stabilized to within 2% of set value during load variation between 0 to 100% of the rectifiers

and specified mains input supply voltage variation. Current ripple content shall be less than 3% in the battery with battery connected.

- 21.3.2.3 An R.F. filter shall be provided at the input and output of UPS to suppress the radio frequency interference.
- 21.3.2.4 Transient/surge protection shall be provided in the input circuit to rectifiers to protect the UPS from surges & voltage spikes. Class C type SPD of appropriate rating with indication should be used where chances of lightning strikes are more or at those places where the chances of indirect surges in power supply are high. Otherwise, conventional surge protection with MOVs is to be done.
- 21.3.2.5 UPS shall be designed to operate satisfactorily while deriving power from an emergency diesel generating set. Suitable protection shall be provided in the control circuits to guard against electrical oscillations which may be present in the input supply as caused by emergency DG sets.
- 21.3.2.6 The UPS shall be provided with automatic sequence and power walk/ soft start in circuit(s) with appropriate time delay such that the rectifiers and inverters can start operating automatically when incoming AC power is restored allowing the UPS to be loaded automatically.
- 21.3.2.7 Sealed Maintenance Free (SMF) lead acid Batteries, having testing reports of NABL approved laboratory of one of the following makes --- Amara Raja/ Exide/ Global/ Panasonic/ Hitachi/ Luminous/ Numeric shall be provided (2 Volt single cells or in the form of crate of 6V/12V preferable). With 30 to 45 mins backup.
- 21.3.2.8 For prescribing the battery VAH, the purchaser will consider the following:
 - a. Load Power Factor of 0.65 to unity
 - b. Minimum ambient temperature shall be taken as 27°C.
 - c. Battery Current = Inverter rated VA X Power factor/ (Inverter efficiency X End cell voltage X No. of cells).
 - d. Ageing factor of 0.8.
 - e. Minimum end cell voltage for lead acid battery 1.75V per cell. Battery low pre-alarm to be set at 1.8 volts per cell.
- 21.3.2.9 The rectifiers/ chargers shall be designed to completely re-charge the battery in a maximum time of 10 hours after complete discharge. The rectifier/charger shall be sized based on the maximum inverter input load when inverter is delivering its rated output at 0.8 pf lagging and recharge the battery to nominal rated capacity of the battery.
- 21.3.2.10 The rectifiers/charger shall sense the battery charging current and adjust the DC bus voltage to maintain the charging current to pre-set level. A separate current limit circuit shall also be provided for adjustment of battery current. Subsequent to a discharge cycle when battery is connected to rectifier/charger, the battery current shall be monitored, controlled and limited to set value automatically, irrespective of the inverter input current. The rectifier shall be protected against reverse battery connection at dc link voltage.

- 21.3.2.11 The UPS output voltage waveform shall be sinusoidal. The Total Harmonic Distortion (THD) of voltage waveform at inverter output shall not exceed 3% considering any linear load up to maximum rated output of UPS system at rated power factor and shall not exceed 15% under non-linear load.
- 21.3.2.12 The UPS system shall be able to operate satisfactorily on rated loads (in kVA) with power factors in the range of 0.65 lag to 1.0. Under the aforesaid load, load pf and input voltage, the minimum efficiency requirement shall be as follows: 75% for ≤ 3 kVA.
- 21.3.2.13 The UPS shall have capacity to deliver a minimum overload of 125% for 10 minutes and 150% for 60 sec. UPS shall be provided with current limit circuit to avoid excessive loading beyond its permissible overload withstand capability.
- 21.3.2.14 Unless otherwise specified, the voltage variation shall not exceed $\pm 5\%$ and complete recovery to normal steady state shall be within 40 ms.
- a. 100% step load and unload (for hot standby only)
 - b. 50% step load.
 - c. Momentary interruption in power supply.
 - d. Complete load transfer to other healthy UPS when one of the UPS develops a fault and automatic retransfer to the first UPS when it becomes healthy.
- For diode rectifier type load systems, a voltage variation of up to 100% for no more than 2 cycles is acceptable at load turn on.
- 21.3.2.15 The battery may be taken out of service for maintenance during which period it shall be possible for the UPS to continue operation by drawing power from the rectifier.
- 21.3.2.16 All the thyristors, diodes, IGBTs and other electronic devices of UPS shall be given adequate protection from short circuits.
- 21.3.2.17 All PCBs shall be provided with a transparent epoxy coating for environmental protection and topicalization. They shall be suitably located away from heat sources.
- 21.3.2.18 All electronic control and monitoring printed circuit cards shall be suitable for easy replacement. Monitoring points shall be provided with identification on each of the PCBs and the PCB shall be firmly clamped in position so that vibration or long usage does not result in loose contacts.
- 21.3.2.19 Fans, if any, shall be of good quality and high reliability. The failure of fan shall only cause thermal tripping at pre-set temperature, without causing any damage.
- 21.3.2.20 Maximum noise level from UPS system measured from a distance of 1 meter from UPS in all directions under rated load shall not exceed 55 dB
- 21.3.2.21 Maintenance bypass isolator – Provision shall be available for manually operated maintenance bypass isolator which shall be incorporated into the UPS cabinet to directly connect the critical load to the input AC power source bypassing the rectifier, inverter and static transfer switch.

21.3.2.22 The UPS shall have a data logging facility, with USB download capability. This will be an optional feature and is not to be provided, unless specifically called for in the indent / tender. The data logged shall be:

- a) 80 faults in a FIFO with date and time stamp (faults to be recorded include, but are not limited to those listed in section 4 (B))
- b) The LCD display shall enable interrogation of the fault data log by the operator

21.3.3 Construction

21.3.3.1 Rectifier/charger, inverter and static switch sections shall be suitably housed in sheet steel panels complete with all interconnections. The panels shall be fabricated with cold rolled sheet steel/ structural steel min. 1.2 mm thick. The panels shall be free standing, fitted with suitable louvers for ventilation and cooling fans as required. Hinged doors shall be provided at the front. The enclosure shall provide minimum IP-20 degree of protection.

21.3.3.2 UPS system shall be suitable for either floating output or earthed neutral, or earthing of star point, in case of single phase/three phase system respectively.

21.3.3.3 The power supply for fans shall be tapped from UPS output. However, the rating of UPS as specified in the data sheet shall be the net output of UPS after deducting power consumption for fans, etc.

21.3.3.4 A suitable sized earthing point shall be provided either at the bottom of the panels or at the back side of the panels.

21.3.3.5 Cables and terminal blocks (if any) for power or control cable connections should be of appropriate voltage, current and temperature rating.

21.3.3.6 All control wiring shall preferably be enclosed in plastic channel or otherwise neatly bunched together.

21.3.3.7 All metal surfaces shall be thoroughly cleaned and de-greased to remove mill scale, rust, grease and dirt. Fabricated structures shall be pickled and then rinsed to remove any trace of acid. The exterior of the panel shall be spray painted with two coats of epoxy-based panel paint or powder coated.

21.3.3.8 Battery Accessories: Batteries if provided outside the UPS system, shall be in a formation which is commensurate with the available space. The stand shall be made of standard L angle channel and duly spray painted with two coats of epoxy-based panel paint or powder coated.

21.3.4 PROTECTION/INDICATION/METERING ETC.

(A) Following protections shall be available:

- i) Overload.
- ii) Short circuit at output of UPS.
- iii) Over and under voltage at battery terminals.
- iv) Over temperature
- v) Input surge protection.

(B) Following indications shall be available:

1. Charger On/Main's presence.
2. Mains Normal / Abnormal.
3. Low Battery.
4. Load on bypass.
5. UPS On.
6. UPS Trip.
7. Audible alarm for mains failure, battery low pre-alarm, battery low trip and inverter trip.
8. Visual indication and audio alarm near working place of operators.
9. Indication for SPD failure.

(C) Monitoring by analogue Meter/LCD Display for the following:

- i) AC Input voltage
- ii) AC Output voltage
- iii) AC Output current
- iv) Battery voltage
- v) Battery charging & discharging current
- vi) Output frequency
- vii) Fault Data

21.4.1 Controls

- (a) Inverter ON/OFF switch (to initiate inverter operation).
- (b) Emergency shut down switches on the panel.

21.4.2 Reliability

All necessary care shall be taken in selection, design and manufacture, testing and commissioning of the equipment for ensuring high system reliability.

21.5 TESTS

Separate acceptance, routine and investigation tests for UPS shall be conducted.

21.6 GUARANTEE

- i. One Year for UPS.
- ii. Two Year for battery.

22. POWER CONTACTOR:

The power contactor to be supplied should meet the following parameters

Sl. No	Particulars	Technical Specifications
1	Number of Main Contacts (NO)	3
2	Number of Main Contacts (NC)	0
3	Number of Auxiliary Contacts (NO)	1
4	Number of Auxiliary Contacts (NO)	0
5	Rated Operational Voltage	Main Circuit 690 V
6	Rated Frequency	Main Circuit 50/60 Hz
7	Rated Operational Current	(690 V) 40°C 60A (220/240 V) 55°C 60A
8	Maximum Breaking Capacity	Cos Ø=0.45 (Cos Ø=0.35 for I _e > 100 A) at 440V 820A Cos Ø=0.45 (Cos Ø=0.35 for I _e > 100 A) at 690V 340A
9	Rated Impulse Withstand Voltage (U _{imp})	6 kv
10	Terminal Type	Screw Terminal

23. TIME RELAY:

Sl. No	Particulars	Technical Specifications
1	Time Relay Type	ON-Delay
2	Rated Control Supply Voltage	220-240 V AC
3	Rated Operational Current	(230 V) 4A
4	Output	1 c/o (SPDT) Contact
5	Terminal Type	Screw Terminal
6	Mounting	DIN Rail Mounting

24. DIGITAL TIME SWITCH:

Sl. No	Particulars	Technical Specifications
1	Rated Operational Voltage	230 V AC
2	Rated Impulse Withstand Voltage (U _{imp})	Maximum 4 kv
3	Maximum Switching Current	16 A
4	Rated Frequency	50 Hz
5	Contact type	Change-over (CO)
6	Battery Chemical Composition	Lithium
7	Battery Life	5 Years
8	Battery Type	Button Cell

25. METHODS OF LAYING OF LT CABLES:

When the cable is to be laid in trenches, two layers of sand coarse of 150mm and 150mm thickness respectively shall be provided on both bottom and top of the cable. When the cable is to be run on members of supporting structures /shelters/ wall, the same shall be clamped with MS clamps made out of 25mmx3mm

thickness flats, spaced not more than 1.0M apart and cost shall be borne by the contractor. The minimum internal dia of bends of multicore PVC insulated LT cables shall not be lesser than 15D where D is the diameter of the cable to be laid.

- **CABLE LEADING/PROTECTING PIPE:**

The cable protecting pipe shall be heavy duty rigid PVC pipe of dia given in the schedule. The pipe shall be secured with either walls or posts using clamps made out of MS flats of 25mm wide and 6mm thick, spaced not more than 1.0M apart. The clamps shall be applied with one coat of red oxide and two coats of aluminium paint. The top of the leading pipe shall be sealed with sealing compound to prevent entry of water. The PVC pipe shall conform to IS 4985-2000, latest and shall be capable of withstanding 6 kgf / sq.cm pressure.

Raising of cables on terminal structure: Cables shall be raised on terminal structures as well as in deep cuttings through PVC pipes of 40/50mm/75mm & 100mm inner dia 3.0 M long, of which 1 M is buried in the ground. The pipe shall be fixed to the terminal structure with clamps made out of flats of size 25mm width and 6mm thick with suitable bolts and nuts spaced not more than 1 metre apart. The diameter of bends in cable should not be lesser than 20 d for HT & 15d for LT where 'd' is the diameter of the cable. The top of the pipe shall be filled with sealing compound to prevent entry of water.

- **EXCAVATION OF CABLE TRENCH:**

a) Trench for cable on either side of track: The trench shall be of 0.3 M width and 1.0 M depth for LT cables. A bed of sand of 150mm is spread for entire width at the bottom of the trench. The excavated earth is filled up in the trench and the trench is made to the original ground level by watering and ramming processes.

b) Trench for cable underneath the track/road: HT/LT cables shall be drawn through HDPE pipe.

Trench to accommodate HDPE pipe shall be of suitable width and excavated at 1.5 M below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, wherever road has been dug for laying the cable the same should be filled, rammed and asphalted and brought to original condition.

Note:

1. Excavation means, earthwork for laying of cable, erection of structures, stay, strut etc., irrespective of soil condition.

2. If any tar road requires to be excavated, it will be classified under Item (b) above.

- **CABLE ROUTE INDICATOR:**

The description of cable route indicator (cable marker) is detailed in the schedule. Construction of cable marker and lettering shall be as specified by Engineer in Charge.

It shall be spaced not more than 25m apart. It should be placed at the following places also.

1. On either side of track/road exactly at points where HDPE pipe ends.

2. At points where there are changes in the route of cable laying.

26. ERECTION OF STAY SET:

The stay shall be erected in a pit of size 1.2m longx0.6M width and 1.3M depth in a mass concrete of 1:3:6 mix, coping of 0.3mx0.3mx0.3m, smoothly finished. The stay set should comprise of stay rod, base plate of size 300x300x10mm, stay wire, stay insulator and stay clamp of size not less than 50mmx10mm size. The stay wire shall be of 45T quality, 7/11 SWG size steel galvanised, complete with stay tightner. All metallic parts shall be applied with one coat of primer red oxide and two coats of aluminium paint.

27. SINGLE POLE STRUCTURE WITH CROSS ARM FOR THE 11KV HT LINE:

The S.P structure is made out of RCC poles of 9 Mtr. long 145 Kgs working load. The structure shall be erected in concrete foundation of mix 1:3:6 with coping of 0.3M x 0.3M x 0.3M size of 1:2:4 mix smoothly finished. Size of pit shall be 0.6M x 0.6M & depth shall be 1.65 Mtr. Painting shall be as in DP structure. Scope includes 11 KV cross arm, pin insulators, clamp with bolts (similar in LT) etc. and HT single top support.

28. DOUBLE POLE STRUCTURE FOR TRANSFORMER (3.3mtr width - Pole centre to centre)

DP structure is made out of RCC poles of 9 Mtr. long of width 3.3mtr (it shall be adjusted to get 3 Mtrs width from pole to pole). The flats used for the manufacture of clamps shall not be lesser than 50mm x 10mm size (However flat size equivalent available commercially is acceptable). The structure shall be erected in concrete foundation of 1:3:6 mix with coping of 0.3M x 0.3M x 0.3M size smoothly finished. One coat of red oxide paint and two coats of aluminium paint should be applied for the MS items. Signal red colour band painted to a height of 150mm should be applied just below the Anti-climbing device on each pole. Size of foundation pit shall be 0.8 x 0.8 m & depth shall be 1.75 Mtr. The assembly includes supply & erection of fasteners, 11 KV disc insulators -3Nos., Danger board- 2 Nos. and standard anti- climbing device-2 Nos etc. (Pin insulators are not in scope of supply of DP structure) Transformer shall be erected on the DP structure by means of 100x50mm channels- 2nos and with suitable guide rails (channels) for supporting the transformer.

Scope includes supply and fixing of additional 100x50mm channel -1no for fixing HT disc insulators, 75x40mm channels -2nos necessary for fixing LA/pin insulators and DOL and angle cross arms of 65x65x6mm for fixing pin insulators/ transformer top body support as applicable.

29. LIGHTNING ARRESTOR:

Lightning arrestors shall be nonlinear resistance distribution type suitable for 11 KV system of grade 9KV 5 KA type conforming to ISS 3070 Part-I latest.

30. GANG OPERATED SWITCH: (GOS)

It is a triple pole Air Break Gang Operated Switch, 200A cap. as in schedule for HT suitable for operation on AC, 3 phase, 50Hz, 11000 V outdoor type with 2 insulators per phase, horizontal mounting tilting type jaw control, self-aligning and having positive wiping action of copper alloy and lever action to prevent undue heating. Minimum size of moving contact shall not be less than 6 mm. The switch shall be supplied with all accessories such as operating pipe of 1.8M/2.5M long as applicable (for DP structure) and drop rod of 25mm dia 'A' class GI pipe of 5 M long or suitable length (without joint) and guide in the middle, arcing horn connectors and locking arrangements in "OFF" and "ON" position, conforming to ISS No.1818/72 (or) latest. Supporting frame/ hardware parts attached to the structure should be earthed by means of 25x3mm GI strip and the operating handle should be earthed with GI wire of 8 SWG. The GOS shall be mounted on base frame M S channel of size 75x40x6mm and fitted with supporting Angle of size 5x65x6mm.

31. DROP OUT FUSE:

Drop out fuse shall be out door expulsion type fuse cut out 11 KV 200 A capacity single phase with 2 Nos. of post type insulators mounted on M S Channel of size 75x40mm with clamp of size 50x10mm on DP structure. All hard ware parts shall be hot dip galvanised. The DOLO set of fuse unit will have three Nos. of single-phase fuses to cater for three phases.

32. INDUSTRIAL CABLE FOR SUBMERSIBLE PUMP:

Flat submersible Three Core PVC Insulated & PVC Sheathed Industrial Cable for Submersible Pump Motors for working voltage up to and including 1100 volts and conforming to IS694 shall be provided.

33. SINGLE CORE PVC INSULATED FLEXIBLE COPPER CONDUCTOR CABLES FOR VOLTAGE GRADE 650/1100 VOLTS

Single Core PVC insulated multi stranded flexible copper cable conforming to IS: 694-1990 or its latest editions with bright annealed based copper conductor as per IS: 8130 of 1976 or its latest editions, working voltage 650/1100 volts with ISI marked of following sizes: a) 1.5 sq.mm (22/0.3 mm) b) 2.5 Sq.mm (36/ 0.3 mm) c) 4.0 sq.mm (56/0.3 mm) d) 6.0 sq.mm (84/0.3 mm)

34. LOW TENSION PVC INSULATED UNDER GROUND CABLE:

1.1KV LTUG Cable having stranded aluminium conductor PVC insulated extruded Inner sheathed, galvanized, steel strip, confirming to IS 3975:1990 & Extruded PVC Outer sheathed armoured cable with specified IS-1554 Part-1:1988 & confirming to GTP (Guaranteed technical particular) with overall satisfactory performance for minimum period of 5 years.

35. HIGH TENSION UNDER GROUND CABLE:

HTUG cable to supply shall be high tension 11KV cable, Dry Curing & Dry Cooling with true triple extrusion, simultaneously through a single common head, 3 core underground XLPE(E) cable having stranded compact circular aluminium conductor, screened insulated, insulation screened with extruded semiconducting compound in combination with copper tape, core laid up extruded inner sheathed of GI flat strip armoured and overall PVC sheathed with specified IS 7098 with latest amendments & conforming to the (Guaranteed technical particular) GTP with overall satisfactory performance for minimum period of 5 years.

The cable should be suitable for AC 3 phase, 50 Hz., earthed system and shall conform to ISS: 7098/P1/88, P2/85, P3/93 (or) latest with up-to-date amendments in all respects and the "HT" cable armoured should be earthed by GI flat to the nearest GI flat main which is about 3-4 mtr. in length.

36. OUTDOOR CABLE JOINTING KIT FOR HT UG CABLES:

HT, 11 KV, Outdoor, cable jointing kit to suit 3 core, XLPE cable of size as indicated in the schedule with complete kit for termination on DP structure. This comprises of supply including fixing of cable jointing kits and jointing of cables to the OH lines. The jointing kit shall be tested as per IS:13573 (with latest amendment) also necessary test certificates shall be submitted with supply of this item. Jointing kit shall be heat shrinkable/ push on type as required by ESCOM authorities. In case of LT pot head fitting, it shall be of complete set with filling compound.

37. GALVANISED OCTAGONAL POLE 5.5mtr LONG (SINGLE ARM BRACKET)

The Octagonal pole shall be made of hot dip galvanised 3 mm thick steel sheet, Top 70mm A/F and Bottom 130 mm M/F with Base plate 250x250x12mm and inbuilt junction box with single arm bracket not less than 1 ¼" dia, B class GI pipe bracket of 350mm long for mounting of light fitting.

The Octagonal pole shall be erected by excavating a pit and concreting the foundation in all kinds of soil with plastering above ground level, with base plate 250x250x12mm, installed by means of foundation bolts/nuts/check nuts and provided with inbuilt junction box and suitable power strip connector and 16A cut out shall be provided inside the box. After hot dip galvanised the pole and mounting pipe shall be painted with double coat of aluminium paint.

RCC foundation in 1:3:6 mix of size 1m depth x 0.5m width x 0.5m breadth shall be provided for erecting the pole.

Steel reinforcement to the foundation shall be provided.

Excavation and clearing the balance soil shall be in contractors' scope of work. Foundation above ground level shall be adjusted as per the instruction of Engr. in charge as per site condition.

PVC pipe shall be provided for cable entry while casting the foundation.

38. FRP LOOP-IN-LOOP-OUT BOX OUTDOOR TYPE FOR LIGHTING POLES.

BOX: Made from Poly Carbonate ideal for outdoor application. Inclined roof for water run out. Single door with proper hinges, side opening and Ball Catch locking system.

Cable Entry: This is through 3 Holes with grommets at equal distances provided below the box suitable for 16sq mm cable, Provision should be made for Light fittings wires to run through the channel behind the box.

Fixing: 5mm Thick M.S. strip 2 Nos for pole mounting should be provided within the box with suitable holes to avoid rusting of MS strip.

Box size (Minimum): 330 (H) x 250 (W) x 130 (D) mm, Wall Thickness of box = 3mm.

Accessories:

- (1) Fuse cut out 16 Amps-1 No,
- (2) 32 Amps 6-way terminal block-1No,
- (3) 16 Amps neutral Link

All Mounted on Poly carbonate base of thickness not less than 4mm of FR Grade.

Properties of Box Material: Poly Carbonate

- Non-rusting/non-corrosive
- Shockproof/ non-reactive to weather changes.
- Non-sparking, /Resistant to propagation of fire.

39. DISTRIBUTION BOARD

Power Panel board shall be cubicle type made out of 16SWG CRCA sheet powder coated consisting of copper bus bar arrangements and MCCB/MCBs/meters as per schedule. Copper Bus bars shall be of 4 no's each of cross section size 1 ½"x 1/8" or equivalent size.

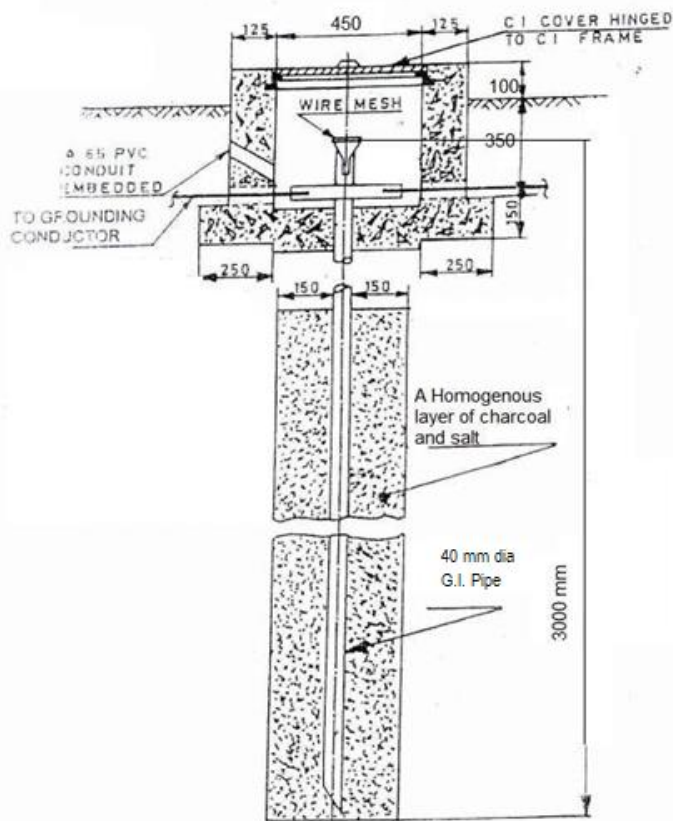
Electronic energy meter shall be as per ESCOM approved make. Panel shall be erected on suitable stand or on CC foundation 1:3:6 mix or on the wall as instructed by Engr. in charge in concealed /surface manner.

MCCBs shall be adjustable type with 25KA breaking capacity.

MCBs shall be with C curve characteristics of 10KA category. Energy meter shall be fixed on suitable Hylem Sheet or suitably insulated from the panel board. AutoCAD drawings shall be submitted for approval before supply of panel board.

40. EARTHING ARRANGEMENTS:

Perforated steel galvanised pipe of 'C' class of 50mm dia and 3000 mm long shall be erected in an earth pit as shown in drawing below. The earth wire used shall be of GI strip of size 25mm x 3mm for HT and 8 SWG GI wire for LT with suitable clamping of size not less than 25 x 3mm on to the terminal structure and embedded in concrete for raising to the top of terminal structure. Both ends of the GI strip/GI wire should be fixed with GI bolts, nuts and spring washer. An RCC slab of size 450 x 450 x 40mm thick is to be placed over RCC box/brick masonry work. Earth box shall be painted above the ground level to facilitate painting of earth values. The earth pit shall be filled with alternate layers of charcoal and salt each of thickness 150 mm and 200 mm surrounding the pipe. The earth value when measured individually and combined should be less than 10 ohms. 8 SWG GI earth wire shall be used for earthing single pole structure. In the ground GI wire shall be buried at a depth of 0.5m and connected to the earth terminal. Earth resistance value in ohms, earth pit No. and date of testing to be painted in the plinth by white paint. Supply of GI pipe and all accessories for earthing (excluding GI wire/ flat) is included in the scope of work for earthing arrangements.



41. GI EARTHING STRIPS

41.1 Scope:

This section of the specification covers the supply, erection, testing and commissioning of Galvanized Iron Earthing Strips for the Distribution Network equipment's.

41.2 Applicable Standards:

The galvanizing and testing of materials shall conform to the latest edition of the following standards except otherwise specified in the specification. Recommended practice for hot dip galvanized of Iron Earthing Strips	IS: 2629(1966)
Methods of testing weight, thickness & uniformity of coating on hot dip galvanized articles	IS: 2633(1972)
Specification for hot dip galvanized coating on fastness I	IS: 5358(1969)
Specification for Electroplating	IS:3203
Specification for hot dip Zinc coating on structural & other allied products	IS: 4759(1968)

41.3 General Technical Requirements:

MATERIAL

Supplier has to purchase raw materials (MS Flat) as per relevant IS at his own cost. The zinc required for galvanizing shall be quality Zn-98 & shall confirm to IS: 209- 1966 and its latest amendments. The Supplier shall make his own arrangement for procurement before the commissioning of work, sufficient quantity of electrolytic zinc of proper quality for galvanizing. The Supplier shall however, not link the delivery period with the supply of zinc. The KRIDE is at liberty to have sample of zinc used and to test in any laboratory at his own cost and reject the particular supply, is found below standard. All raw materials required for galvanizing etc. and for complete execution of work shall be stocked in adequate quantities by the Supplier to ensure that the progress of work is not hampered.

GALVANISING

Fully galvanized Iron strips shall be used. Galvanized Iron strips shall confirm to IS: 2629 (1966). The zinc deposition should not be less than 610 grams/meter square of the galvanized surface area of the MS Earthing strips. All galvanized materials shall withstand test as per IS: 2633 (1972). The weight of zinc coating shall determine as per the method stipulated in IS: 2633(1964). The standard length of Galvanized Iron Earthing Strip shall be minimum 7 Mtrs and not exceeding 10 Mtrs.

42. 11KV /0.433KV, CLASS DISTRIBUTION TRANSFORMERS OF RATING 25 KVA/63KVA/100KVA/250KVA AND 500KVA.

42.1 Scope:

The specification covers manufacture, testing at works and supply of 3 phase, 50Hz, core type oil immersed self-cooled Distribution Transformers conforming to IS: 1180 and IS: 2026 of 1977 as amended from time to time and REC specifications.

One set of drawings showing size, Shape of tank, Core and windings, Radiators etc., for all the capacity of Transformers and an internal clearance drawings are to be furnished by the Contractor.

The transformers shall be manufactured strictly as per specifications.

42.2 Standards:

The applicable standards for distribution transformers including various accessories are specified here below:

i.	Colours for Ready mixed paints & Enamels	IS: 5/1994
ii.	Ready mixed paint, brushing, Zinc chrome, priming	IS: 104/1979
iii.	New Insulating oils	IS:335/1993
iv.	Methods for testing of Steel Sheets for Magnetic Circuits of Electrical apparatus	IS: 649/1997
v.	Outdoor type three Phase distribution transformers Up to and including 100KVA, 11 KV class	IS: 1180 /1989 (Part I &.II)

vi.	Solid press Boards for Electrical purposes	IS: 1576/1992
vii.	Power Transformers	IS: 2026/1977 (Parts 1 to 5)
viii.	Bushings for alternating voltages above 1000 volts	IS: 2099/1986
ix.	Determination of water content by Karl Fischer Method-Test method	IS: 2362/1993
x.	Paper covered Aluminium conductors	IS: 6162/1971 (Part I & II)
xi.	Rectangular conductors for Electrical Machines	IS: 6160/1971
xii.	Dimensions for Porcelain Transformer Bushing Dimensions for use in normal and lightly polluted atmosphere	IS: 3347 (Part I - IV)
xiii.	Electric Power Connectors	IS: 5561/1970
xiv.	Method of test for specific resistance (Resistivity) of Electrical insulating liquids	IS: 6103/1971
xv.	Method of test for power factor and Dielectric Constant of electrical Insulating liquids	IS: 6262/1971
xvi.	Method for Determination of electric strength of insulating oils	IS:6792/1992
xvii.	Code of practice for selection Installation Maintenance of Transformers	IS: 10028/1985 (Part I to III)
xviii.	CBIP Manual	Section B & C
xix.	REC Specification	No.2
xx.	REC construction standards K.5 (Capitalization of losses)	K5 (R-1993)

42.3 System details:

The transformers shall be suitable for outdoor installation with 3 Phase, 50 Hz, 11 kV system in which the neutral is effectively earthed and the same shall be suitable for service under fluctuations in supply voltage up to 12% permissible under Indian Electricity Rules and the frequency variation of -5% and +2% (47.5Hz to 51.0Hz).

42.4 Climatic conditions:

The material used in the construction of the Distribution transformers shall be suitable for use under the following climatic conditions.

- a. Ambient Air Temperature - 5° C to 50°C:
- b. Relative Humidity - 0 to 100%
- c. Altitude - 0 to 100 Meters

42.5 Ratings:

- Primary Voltage - 11 KV - 3Phase
- Secondary Voltage - 433 Volts.

The winding of the transformers shall be connected in delta on the primary side and in star on the secondary side. The neutral of the LT windings shall be brought out to a separate terminal. The vector group shall be Dyn.11.

42.6 Technical parameters:

a. Percentage Impedance:

The Percentage Impedance shall be 4.5% for transformers up to 100KVA and 5% for transformers of 250KVA and 500KVA with tolerance as per IS: 2026.

b. Temperature rise:

The temperature rise for top oil over should be 45°C max (measured by thermometer as per IS: 2026) over the ambient temperature.

c. The temperature rise for windings shall not exceed 50°C Max. (Measured by resistance in accordance with IS: 2026) over the ambient temperature.

d. No Load Voltage Ratio:

The No Load Voltage ratio shall be 11000/433-240V, for all capacities of distribution transformers at normal tap.

42.7 Design & Construction

42.7.1 Core

a. The core shall be of high grade CRGO steel sheet of M4 grade or superior to that having low loss and non-ageing grain oriented, coated with hot oil proof insulation, bolted together to the frames firmly to prevent vibration or noise. All core clamping bolts shall be effectively insulated. The complete design of core must ensure permanency of the core losses with continuous working of the transformers. The value of the flux density shall not be more than 1.7 tesla at 50 HZ.

b. The transformers core shall not be saturated for any value of V/F ratio to the extent of 112.5% of the rated value of V/F ratio i.e., 11kV/50Hz. (Due to combined effect of voltage and frequency) up to 12.5% without injurious heating at full load conditions the core shall not be saturated.

The Bidder shall furnish necessary design data in support of this condition

c. The maximum thickness of core laminations shall not exceed 0.3mm. Further the lamination sheets used for top yoke, bottom yoke etc., shall be of single piece.

d. No load current, shall be measured by energizing the transformers at 433 volts 50 C/S on the secondary for distribution transformers. Increase of voltage by 10% shall not increase the no load current disproportionately high. Test for magnetic balance by connecting the LV phase by phase to rated phase voltage and measurement of an, bn, cn, voltage shall be carried out. The no load current shall not exceed 2% in respect of 250KVA and 500KVA Transformers and 4 to 5% in respect of 100KVA and below distribution transformers at rated voltage and frequency.

The minimum

- i. Effective core area
- ii. Number of core steps
- iii. Internal clearance

Shall be as per the specification and drawings as indicated in the drawings for each capacity. Minimum effective cross sectional area of the core to be provided are as follows:

- 1) 25KVA - 41.18 sq. cm.
- 2) 63KVA - 75.00 sq. cm.
- 3) 100KVA - 84.60 sq. cm.
- 4) 250KVA - 146.20 sq. cm.
- 5) 500KVA - 218.00 sq. cm.

Note: If the manufacturer uses the better quality CRGO steel for the core the manufacturer has to furnish the area of cross section of the core along with the design details.

- e. The unbalance current in the neutral shall not be more than 2% of the rated current.

42.7.2 Core Clamping:

1. M.S. Channel 125 x 65mm for 500KVA, 100x50mm for 250 KVA 75 x 40mm for 100 KVA and below transformers on top and bottom shall be used for clamping the core.
2. Nos. of 12mm high tensile vertical bolts in parallel in each side shall be provided. The size of the Bolts to be provided in parallel are as follows:
 - a. 25, 63, 100KVA - 2 Nos. of 12mm High Tensile Bolts
 - b. 250 KVA - 2 Nos. of 16mm High Tensile Bolts

42.7.3 Tie Bolts:

Four horizontal tie rods (or high tensile steel) of 12mm dia for transformers up to 100KVA, 16mm for 250KVA and 20mm for 500KVA to be used. Rods to be effectively insulated with kraft paper tube of thickness 1.5mm.

- i) All top and bottom Yoke nuts bolts and tie rods shall be painted with oil and corrosion resistant paint before use.
- ii) Channel - (top yoke) on LV side to be reinforced at equidistance if hole cutting is done to avoid bending of channel.
- iii) The flat provided at the core shall be as per the drawings enclosed and shall not be cut through the length.
- iv) Tie rods shall be effectively earthed.

42.7.4 Windings:

- a) **Material-** Double layer paper covered Aluminium conductor shall be used.
- b) The nominal HV winding cross section shall be as follows:

SL. No.	Rating	
1	25KVA	0.7854 Sq.mm.

2	63KVA	1.539 Sq.mm.
3	100KVA	2.270 Sq.mm.
4	250KVA	7.069 Sq.mm.
5	500KVA	12.050 Sq.mm.

c) The nominal LV winding cross section shall be as follows:

SL. No.	Rating	
1	25KVA	18.33 Sq.mm.
2	63KVA	49.39 Sq.mm.
3	100KVA	83.08 Sq.mm.
4	250KVA	286.44 Sq.mm.
5	500KVA	417.06 Sq.mm.

d) LV winding shall be in even layers

e) The neutral formation shall be at top

42.7.5 Losses & Impedance:

The losses and impedance for various ratings of transformers of 11KV class shall be within the permissible limits. These losses are the maximum permissible.

Rating (KVA)	No load loss watts (Max.)	Full load loss (watts) (Max.)	Impedance % (subject to tolerance as per IS:2026)
25	100	685	4.5
63	180	1235	4.5
100	260	1760	4.5
250	500	3000	5.0
500	850	5800	5.0

42.7.6 Insulation, Insulation Material & Clearances:

a) Press board blocks at top and bottom of each coil assembly shall be provided. There must be at least 4 blocks per phase/coil of each of thickness of 30mm. Core wrapper shall be of minimum of 1mm thick.

The channel at phase barrier board shall be of 2mm thick press board. The tie rod insulation kraft paper shall be of thickness 1mm. Between HV and LV windings addition press Board cylinder of at least 2mm in addition to spacers shall also be provided.

b) No. of vertical/axial wedges up to 100 KVA minimum 18 Nos. and for 250 KVA & 500KVA - 12 Nos. shall be provided depending upon the capacity of transformers between LV and HV windings and equispaced around LV. The wedge shall be minimum 6.5mm thick and 8-12mm wide.

c) The inter layer insulation shall be provided between HV windings layers depending on the design.

d) The Neutral connection of LT winding shall be formed using aluminium strip of same size as that of 'S' type link of size 25x3mm. Aluminium strip for 25/63/100 KVA and 40x5mm for 250KVA and 70x5 mm for 500KVA transformers.

- e) The delta formation of HV winding shall be made using copper jumper leads of size 1.6mm dia. for 25/63/100KVA, 2.65 mm for 250KVA and 3.75 mm for 500KVA transformers. The leads shall be enclosed in Kraft insulated paper tube.
- f) Double paper covering shall be used for winding insulation both for HV & LV windings. Either performed corrugated cylindrical boards or cylindrical compressed boards with spacers shall be provided between HV & LV windings. Press board of type - D IS: 1576 to be used for top and bottom yoke insulation.
- g) Radial clearance of LV coil to core (bare conductor) shall not be less than.
 - 1. for 25 KVA - 3.5MM
 - 2. for 63 KVA - 3.5MM
 - 3. for 100KVA - 4.0MM
 - 4. for 250KVA - 5.0MM
 - 5. for 500KVA - 5.0MM
- h) Radial clearance between HV and LV coils shall not be less than 10mm for all capacities.
- i) Phase to phase clearance between HV coils shall not be less than 15mm. A minimum of 2 Nos. of 1mm press board shall be used to cover the tie rods.
- j) The minimum electrical clearance between the winding and body of the tank (between inside surface of the tank and outside edge of the winding) shall not be less than 30mm.
- k) End insulation to earth shall not be less than 25mm.
- l) HV & LV coils single coil multi-layer winding shall be used for all capacities of transformers.
- m) Tap lead shall be insulated with 1.5 mm thick paper insulation. Inspection of windings prior to tanking's shall be done

42.7.7 Tank:

- a. The transformer tank shall be of robust construction and shall be built of electrically welded M.S. Plates (The side wall shall have only two joints). All joints of tank and fittings shall be oil tight and no bulging shall occur during service.

The tank design shall be such that the core and windings can be lifted freely. The tank plates shall be of such strength that the complete Transformer when filled with oil could be lifted bodily by means of the lifting lugs provided. The tank inside shall be painted by varnish. Top cover shall be slightly sloping towards HV bushings and cover the top with end walls. Shape of the tank shall be Rectangular/Octagonal only.

- a) Side wall thickness - 3.15 mm
- b) Top and bottom plate thickness - 5.00 mm(3.15mm for 25KVA)

- b. Suitable reinforcement by welded angle shall be provided on all the outside walls on the edge of the tank. The permanent deflection shall not be more than 5mm up to 750mm length and 6mm up to 1250mm length and 8mm up to 1750mm length when transformer tank without oil is subjected to Air pressure test as per IS:1180.

c. Lifting lugs:

2 Nos, for 25,63 and 100KVA and 4 Nos. for 250 and 500KVA transformers of welded heavy duty lifting lugs of M.S. Plate 8mm thick suitably reinforced by vertical supporting flat welded edgewise below the lug on the side wall shall be provided.

d. Pulling lugs:

4 Nos. of welded heavy duty pulling lugs of M.S plate 8 mm thick for 250 & 500KVA shall be provided to pull the transformer horizontally,

e. Top Cover Fixing Bolts:

- 6mm Neoprene bonded cork gaskets conforming to IS-4352 Part-II shall be placed between top cover plate and tank.
- GI bolts and nuts shall be size 12mm x 40mm with one plain and one spring washer suitably apart (100mm) to press the cover.

f. Tolerance on tank dimensions shall be limited to -5% to + 10%.

42.7.8 Heat Dissipation:

- a) Heat dissipation by tank walls excluding top and bottom should be 500 watts / Sq. mtr.
- b) Heat dissipation by radiator 1.25mm thick shall be considered for heat dissipation calculation.
- c) The guaranteed temperature rise of oil and winding shall be found by conducting temperature rise test.

42.7.9 Total Minimum Oil Volume:

Sl. No.	Rating	Oil in Litres. (inclusive for oil absorbed in core coil assembly)
1	25KVA	85
2	63KVA	115
3	100KVA	140
4	250KVA	340
5	500KVA	420

NOTE: If the absorption of oil in the core and winding assembly is more than permissible value first filling oil volume should be increased accordingly detailed calculation of absorption shall be submitted.

42.7.10 Conservator:

Conservators shall be provided on transformers of rating 63KVA, 100KVA, 250KVA and 500KVA

When a conservator is fitted, the oil gauge and the plain or dehydrating breathing device shall be fixed to the conservator which shall also be provided with a drain plug and a filling hole (1¼ nominal size thread) with cover. In addition, the cover of the main tank shall be provided with an air release plug to enable air trapped within to be released. Unless the conservator is so located as to eliminate the possibility of air being trapped within the main tank.

- a) Prismatic oil level indicator shall be provided on the side which will be fully covered detachable flange with single neoprene gasket and tightened with M.S. bolts and nuts.
- b) The inside diameter of the pipe connecting the conservator to the main tank shall be within 20 to 50 mm and it should project in to the conservator in such a way that its end is approximately 20 mm above the bottom of the conservator so as to create a sump for collection of Impurities. The minimum oil level (corresponding to - 5° C) should be above sump level.
- c) The pipe from conservator tank connecting to main tank shall be sloping so that the oil falling from the pipe shall not fall directly on the active parts and shall fall on the side walls only.
- d) The conservator shall be provided (except for 25KVA) with the drain plug and filling hole with cover. In addition, the cover of the main tank shall be provided with an air release plug (except for 25KVA).
- e) Conservator pipes fixing conservator to the top plate of the transformer should be on either side of metal pocket provided for mounting LT bushings with minimum electrical clearance of 110mm between phases and also earth.

42.7.11 Breathers:

Breather joints shall be of bolted type. It shall have die cast Aluminium body and inside container for Silica gel shall be of tin.

The volume of the breather shall be

- a. 250 grams of silica gel breather shall be provided for 25 KVA, 63 KVA and 100 KVA transformers.
- b. For 250 KVA and 500 KVA transformers 500Gms. breather shall be provided.

The breather shall have an inspection window to view the condition of the silica gel.

42.7.12 Terminals:

- a. Brass rods 12mm dia for HT and LT for 25KVA, 63KVA and 100KVA Transformers.
- b. Brass rods 12mm dia for HT, 20mm dia for LT for 250 KVA and 12mm dia for HT and 30mm dia for 500KVA transformers shall be provided.
- c. HT/LT Bimetallic connectors shall be provided to 25KVA, 63KVA and 100KVA transformers.
- d. Connecting lugs shall be provided confirming to IS: 3347 for LT terminals of 250 and 500KVA Transformers.
- e. The metallic connector shall be L type for LT bushing of distribution transformer of capacity of 100, 250 and 500KVA.

The L type clamp shall be suitable to take off two/four circuits of 240 Sq. mm aluminium wire (for 250, 500KVA transformers)

- f. The HV and LV windings conductor shall not be terminated to the bushing rod directly.

- g. The HV winding shall be linked through a terminal lug and copper jumper lead of size 1.6mm dia for 25/63/100KVA, 2.65mm for 250KVA and 3.75mm for 500KVA transformers. The leads shall be enclosed in kraft paper tube.
 - h. The LV winding shall be terminated using inverted 'S' type link of size 25x3mm Aluminium strip for 25/63/100KVA, 40x5mm for 250KVA and 70x5mm for 500KVA transformers.
- 1) All the leads / links shall be immersed in oil.
 - 2) All the leads/links shall be taken neatly strapped on an insulated pressBoard/wooden Bus Bar.

42.7.13 Bushings:

I. For 11KV, 12KV Bushings (confirming to IS: 2099/1986) with single gap arcing horns shall be used and for 433 volts, 1.1KV terminal Bushings confirming to IS: 7421/1974 shall be used. Bushings of the same voltage class shall be inter changeable. The dimensions of Bushings shall be as per IS-3347 and these Bushings shall be mounted on side of the tank or on the top cover. The bushings mounted on the side shall not have an inclination of more than 30 degrees from the vertical as per CBIP manual and IS-2099. Only sheet metal pocket shall be provided for mounting HV bushings alternately the same can be mounted on pipes. Creepage distance shall not be less than 25mm/KV as per IS: 2099-1986.

II. **Brazing of all internal connections** – All jumpers from windings to bushing shall have a cross section larger than tile winding conductor. For copper, silver brazing alloy to be used. For aluminium, L&T aluminium brazing rods shall be used.

III. The minimum phase to phase and phase to earth external clearances for HV & LV Bushings shall be as follows:

	Minimum clearances	
	Phase to phase (in mm).	Phase to earth
HV Bushings	255	140
LV Bushings	75	40

The above 140 mm. clearance does not apply to arcing horn gap.

42.7.14 Tank Base Channel:

- a) For 25, 63 & 100KVA Trans. ISMC 75 x 40mm. channel shall be used for base.
- b) For 250 KVA transformers 100 x 50mm channel shall be used
- c) For 500 KVA transformers 125 x 65mm channel shall be used

Stiffeners (flats) shall be provided to tank base channels, along the length of the tank for 250 and 500 KVA transformers.

42.7.15 A. Terminal Marking Plate And Rating Plates:

The transformer shall be provided with a brass plate showing the relative physical position of the terminal and their markings. The relative position of the Tapping's switches shall also be shown in the plate, corresponding to the different tapping voltages in case of 250 KVA, and 500KVA distribution transformers. This shall be in

accordance with IS: 2026. The transformers shall be provided with rating plate furnishing the information as specified in IS- 2026.

The month and year of delivery shall be indicated on the rating plate. The rating plate shall be embossed / engraved type but not painted. The serial No. of transformer shall follow the code Nos. as detailed below. These shall be punch marked on the transformer tank and also on the top cover.

Alpha	Numeric	Numeric	Numeric	Numeric
	1	2	3	4

Alpha represents code name of manufacturer.

Numeric 1. Represents capacity

- I.e. , code
- 01 for 25KVA
 - 02 for 63KVA
 - 03 for 100KVA
 - 04 for 250KVA
 - 05 for 500KVA

Numeric 2 - Represents year of manufacturer.

Numeric 3 - Represents month of manufacture.

Numeric 4 - Represents SL. No. of Transformers.

42.7.16 B. Fittings:

The fittings on the transformers shall be as under.

1)	Rating and Terminal marking plate	1 No
2)	Earthing terminals minimum M12 with nuts should be provided on the tank	2 Nos
3)	Lifting lugs	2 Nos. for 25, 63, 100 And 4 Nos. for 250/500 KVA.
4)	Cap for oil filling (on conservator)	1 No.
5)	Drain valve 20 mm. dia shall be provided with metallic cover by spot welded to tank for 250KVA and 500KVA transformers (No drain valve shall be provided for 25, 63, 100KVA ratings).	
6)	Conservator with drain plug	1 No. (except for 25KVA).
7)	Thermometer pocket	1 No. for 250KVA and 500KVA transformers only
8)	Air release plug on main tank (except for 25 KVA).	

9)	Plat form mounting channels	
10)	BREATHERS: Silica gel breather of 250 gms. Capacity	1 No. for 25, 63 and 100KVA Transformers
	Silica gel breather of 500gms capacity	1 No. for 250 and 500KVA Transformers.
11)	Oil level gauge shall be provided indicating 3 positions of oil marked as below: Minimum (-) - 5 degree C 30 degree C Maximum (+)- 98 degree C	
12)	Off circuit tap switch handle shall be provided with locking arrangement in case of 250and 500KVA Transformers.	
13)	HT & LT bushings - 3 Nos. of HT bushings and 4 Nos. of LT bushings shall be provided with terminal connectors. Each bushing of HV and LV shall be provided with 3 Nos. of brass nuts and 2 Nos. plain brass washers for connecting terminal. LT terminal connectors for 250KVA and 500KVA transformers shall be supplied in a separate packing.	
14)	RADIATORS: Elliptical/fin/tubular type radiator shall be provided as per design.	
15)	Arcing horns for HT bushings with adjustable type on the ground side.	
16)	Filter valve - 20mm dia shall provided for 250KVA and 500KVA transformers only, with metal cover box (tack welded).	

42.8 Transformer Oil:

The transformer shall be supplied complete with first filling of oil and tile same shall comply with IS: 335/1993 with latest revisions thereof and ageing characteristics specified.

a) New Oil:

SL. No.	Characteristics	Requirements
1	Appearance	Oil shall be clear and transparent and free from suspended matter and sediments.
2	Density (Max) at 29,5° C	0.89 g/cm ³
3	Kinematic viscosity (max)	27 Cst at 27°C

4	Interfacial tension at 27°C (Min)	0.04N/M
5	Flash point (Min)	140°C
6	Neutralization value a) Total acidity (Max) b) Inorganic acidity/Alkalinity	0.02mg KOH/gm.Nil
7	Pour point (max)	-6°C
8	Corrosive sulphur	Non-Corrosive
9	Electric strength(break down voltage(min) with 2.5mm gap) a) New Unfiltered oil as in receivedcondition. b) After filtration.	30KV (RMS) 60KV (RMS)
10	Dielectric dissipation factor (tan delta) at 90°C (Max)	0.002
11	SK Value (Max)	12%
12	Water content (Max)	50PPM
13	Specific Resistance (Min) (Resistivity) a) At 90°C (min) b) At 27°C (min)	35 x 10 ¹² Ohm – cm. 1500 x 10 ¹² Ohm – cm.
14	Oxidation Stability a) Neutralization value after oxidation (Max.) b) Total sludge after oxidation (Max.)	0.40 Mg/KOH/g. 0.1 % by weight
15	Ageing characteristics after accelerated ageing (Open breaker method with copper catalyst) a) Resistivity at 27°C b) Resistivity at 90°C c) Dielectric loss factor (tan delta) at 90°C d) Total acidity mg KOH/g e) Sludge Content (Max.)	2.5 x 10 ¹² Ohm - cm (min) 0.2 x 10 ¹² Ohm - cm (min) 0.2 (Max.) 0.05 (Max.) 0.05 by weight.
16	Presence of oxidation inhibitor (Percent by weight)	The oil shall not contain antioxidant additives

Remarks: Value of 0.05% (max) shall be treated as absence of oxidation inhibitor.

b). The important characteristics of the transformer oil after it is filled in the transformer (within 3 months of filling) shall be as follows.

SL. No.	Characteristics	Requirements
1	Electric Strength	50kV Min. With 2.5mm Gap

2	Dielectric dissipation factor (Tan delta) at 90°C	0.01 Max
3	Specific resistance (Resistivity) at 27°C	19 x 10 ¹² Ohm-cms.
4	Flash point P.M. (Closed)	140°C (Min)
5	Interfacial tension at 27°C	0.03 B+N+M or more
6	Neutralization value (total acidity)	0.5mg of KOH/g or less
7	Water content PPM	33 (Max)

All tests to verify the characteristics mentioned as above shall be carried out in accordance with IS: 335/1993.

42.9 Tests:

42.9.1 Type test

Type tests, routine tests and acceptance tests shall be conducted on transformers, of each capacity. All capacity of the transformers and its accessories shall be fully type tested as per the relevant standards.

42.9.2 Type Test

The following shall constitute the type tests as per IS-1180 (Part I) and IS: 2026/CBIP manual.

- a) Measurement of winding resistance.
- b) Measurement of voltage ratio and check of voltage vector relationship
- c) Measurement of impedance voltage/Short circuit impedance and load loss.
- d) Measurement of no-load loss and current
- e) Measurement of Insulation resistance.
- f) Induced over voltage withstand test.
- g) Separate source voltage withstand test.
- h) Impulse voltage withstand test.
- i) Temperatures rise test
- j) Short circuit test
- k) Air pressure test
- l) Permissible flux density and over fluxing.
- m) Un Balance current test: The value of unbalance current indicated by the Ammeter as shown in the test arrangement of CBIP manual shall not be more than 2% of the full load current.

42.9.3 Routine Test

All transformers manufactured shall be subjected to the following routine test, at the manufacturer's works - In accordance with IS:1180 (Part I & II) and IS:2026.

- 1) Measurement of winding resistance.
- 2) Measurement of voltage ratio and Check of voltage vector relationship
- 3) Measurement of impedance voltage/short circuit impedance and load loss.
- 4) Measurement of no load loss current and neutral current.
- 5) Measurement insulation resistance.
- 6) Induced over voltage withstand test.
- 7) Separate source voltage withstand test.

42.9.4 Type and Routine Test Certificates:

2. All the routine tests as stipulated in the relevant standards shall be carried out by the supplier in the presence of K-RIDE representative.
3. Immediately after finalization of tile programme of type/ acceptance/ routine testing, the supplier shall give fifteen days advance intimation to the to enable to depute its representative for witnessing the tests. The routine test certificate shall be submitted along with tile inspection offer.

42.10 Finishing:

The exterior of the transformer tank and other ferrous fittings shall be thoroughly cleaned, scrapped/sand blasted and given a priming coat and two finishing coats of durable oil the weather resistance paints or enamel. The colour of finishing coats for transformers shall be as follows, as per IS: 5.

- | | | |
|----------------|---|-----------------------------------|
| b) For 25 KVA | - | Sky Blue shade No. 101 |
| c) For 63 KVA | - | Silver Grey shade No. 628 |
| d) For 100 KVA | - | Brilliant green shade No. 221 |
| e) For 250 KVA | - | } Dark admiralty Grey Shade No.63 |
| f) For 500 KVA | - | |

42.11 DOCUMENTARY EVIDENCE:

The successful bidder shall have to furnish the routine test certificates at the time of routine testing of the fully assembled transformer.

42.12 TESTING FACILITY:

The supplier shall have adequate testing facility to conduct the routine tests.

42.13 Inspection and Testing of Transformer Oil:

To ascertain the quality of the transformer oil, the original manufacturer's test report should be submitted at the time of inspection. Also arrangements shall be made for testing of Transformer oil, after taking out the sample from the manufactured transformer and tested in the presence of KRIDE's representative or in any independent laboratory viz., B.D.V. test should be conducted in presence of KRIDE's representatives.

42.14 PUNCH MARKING OF TRANSFORMER SERIAL NO.

The serial No. of the Transformer shall be punch marked on the transformers tank and also on the top cover in addition to that indicated on the name plate as per relevant clause.

The bidder shall furnish "Cost Analysis" for each Transformer in the proforma enclosed.

43. SPECIFICATION FOR HDPE PIPE

The HDPE pipe material should be confirming to standard IS 4984-1995 or latest and should be of PE-80 material designation which has MRS (Minimum Required Strength) of 8.0MPa and maximum allowable hydrostatic design stress of 6.3 MPa (@20 °C) with pressure rating of PN-6(6kg/cm²), heavy gauge has to be provided. The cable has to be laid through HDPE pipe with all necessary accessories for jointing, clamping, bends etc as per site condition has to be provided.

44. LED SIGNAGE BOARD

44.1 Specification For LED Based Name Boards:

NOTE:

- a) The contractor has to make his own arrangements for transportation of men & material at site. Contractor is advised to visit the sites to have information about the scope of the work to be executed before submitting the offer.
- b) The exact name & spelling in all languages is tentative and successful tenderer should take approval for spelling in all 3 languages and design before starting the work.
- c) The LED luminaries should confirm with the enclosed specifications at Annexure-A.
- d) Design LED name board to be submitted before starting of the work & written approval should be obtained before supply of material.

- e) The LED name board should be provided for fixed type name and not for scrolling type.
- f) The letters along with LED will be fixed on 4mm thick aluminium composite panel sheet of 9-10 feet height (minimum) and entire frame shall be supported on MS angle frame from the back side to withstand wind pressure. The successful tenderer shall submit a detailed drawing of the structure and boards for approval of JGM/K-RIDE before manufacturing.

44.2 SPECIFICATION:

Sl. No	Parameter	Description
1	No. of LED's	As per requirements
2	Frame type	Heavy quality aluminium rectangle tubes of 25mm x 50mm with minimum 1mm thickness and front cover of 4m thick ACP sheet.
3	Physical dimensions for acrylic sheet	As per the letter requirement
4	Thickness of acrylic sheet	3.00 mm with 0.40 grade
5	Language	Kannada, Hindi, English
6	Wattage per letter	15-22 watts (approx.), each LED wattage =3 Smd 1.8 Watt (minimum), white LED and the spacing between adjacent LED modules must not be more than 20-25 mm.
7	LED control	Current Regulator
8	Viewing angle	120 Deg (Minimum)
9	Nominal Voltage	220 V AC
10	Operating Voltage	105 V to 295 V AC, 50 Hz
11	Protection	As per CEE/SWR Specification attached with Annexure-A
12	Height of letter	2 feet
13	Letters Colour	Kannada – Saffron, Hindi – White & English -Green
14	Approved sources of LED	As per CEE/SWR specification No. SWR/spec/LED dated.12.06.2015.
15	Warranty	5 years total fitting

44.3 DETAILS:

- a) Each letter box should be made of aluminium, Acrylic and PVC trim cap.
- b) Back and sides of letter box should be of 65mm (minimum) raising (height) and made with 18-gauge 0.80 microns grade aluminium sheet with MRF or similar powder coating on the Aluminium sheet.

- c) 2mm (minimum) thick PVC trim cap on top of Aluminium raising sheet.
- d) Front face should be with Marga cipta or similar make 3mm thick 0.40 grade acrylic sheet in Saffron, white & green colour for each language.
- e) Aluminium box back side should be with machine slotted and riveted.
- f) The ACP Sheet of 4mm thick (0.5 mm Front & back aluminium) with approved colour with heavy quality rectangular aluminium tubes of 25mm x 50mm x 1mm frame on the MS angle structure for fixing ACP sheet.
- g) The structure to be built with proper support to with stand wind pressure and to hold 9-10 feet height (minimum) ACP sheet with frame as per requirement to fix the letters with MS structure with Red oxide initial coat & BLACK Paint with suitable channels as per site condition. (Structure drawing to be approved before starting the work).

Tenderers are requested to visit site to get further information regarding requirement of structure.

- h) Led should be water proof 3 Nos SMD white colour LED as per CEE/SWR specification at Annexure-I.
- i) The number of power supplies should be based on total wattage of name board and each driver should drive only 90% of its capacity maximum.
- j) Separate timer along with the proper capacity contactor to be provided inside LED driver box for automatic switching ON & OFF of name board.
- k) The cost is inclusive of power supply drivers as per requirement and timer with contactor.

44.4 Operating Conditions:

The equipment shall be sturdy and suitable for the following service conditions to be normally met in service:

The dust content in air may be as high as 1.6mg/m³. During dry weather, the atmosphere is likely to be full of dirt and dust. The equipment shall be designed to work in corrosive atmosphere.

In industrial areas, there may be airborne contaminants like smoke and chemical vapours and conducting particles.

44.5 Specification of LED for fitted with fire resistance silicon base board:

- a) White SMD LED Module of uniform intensity and luminosity shall be used for excellent visibility. The intensity of the illumination shall be such that it should be possible to read the letters clearly from a distance of 200 meters or more.
- b) All system units should be modular, such that any module (i.e., LED modules, connector, cable, power supply unit etc.) can be easily removed when defective and a fresh module can be fixed to make the system functional again.

44.6 Power Supply Unit:

- a) All power supply units supplied shall be switch mode power supply (SMPS) type operated from AC source in the voltage range 105-295 V AC, 50 HZ AC (minimum) and single phase.
- b) Over voltage and short circuit protection is incorporated within the power supply.

Summary details of each power supply:

Power supply Switched Mode Power Supply

Rated Working Voltage 220V AC, 50Hz

Working voltage range 105V – 295 V AC

Output 400W (Minimum)

Power Factor > 0.95

44.7 General Requirements:

- a) The unit shall be suitable for mounting/hanging and shall be specially designed for protection against dust specification.
- b) The unit should be compact and robust.
- c) The unit should have protected against open circuit & short circuit for the cables and circuits used. The design shall be modular, so that only the defective part need be replaced.

Probable Makes:

SI.NO	Description of item	Tentative approved makes
1	PVC copper wire	Polycab, Finolex, Havells, KEI, V-Guard, Anchor, Sbee, Universal, Indo Asian

ANNEXURE-A**TECHNICAL SPECIFICATION FOR LED TYPE (INDOOR/OUTDOOR) LIGHT FITTINGS**

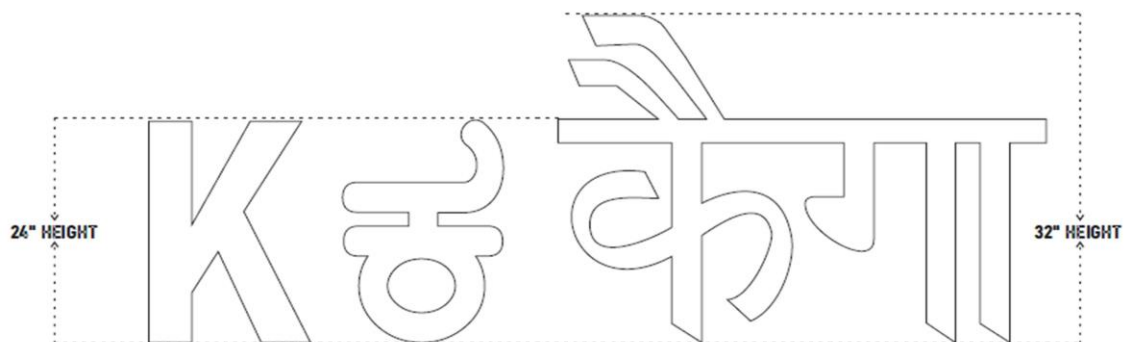
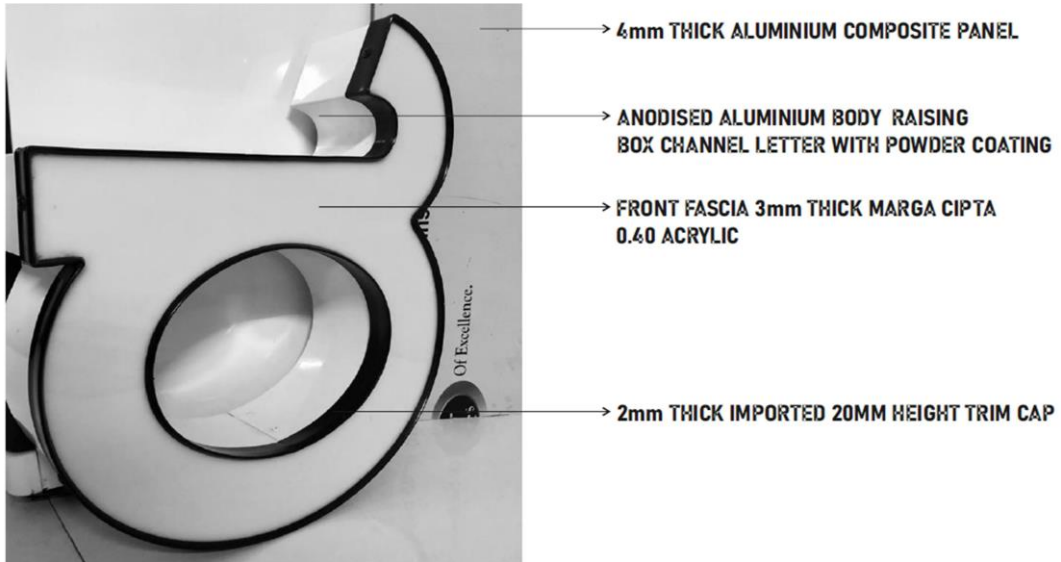
1. General requirements of LED type (INDOOR/OUTDOOR) light fittings

1	LED make	NICHIA/OSRAM/SEOUL/PHILIPS LUMILEDS/CREE/LEDNIUM/AVAGO
2	Type of LED	High power, SMD (Surface Mounting Device) LED
3	Lumen output /Efficiency	> 130 lumens/Watt
4	LED life	> 50,000 burning hours
5	Depreciation	30 %max. after 50,000 burning hours
6	Colour Rendering Index (CRI)	> 75
7	Nominal voltage	220 V AC
8	Input operating voltage	105-295 V AC
9	Power factor	> 0.9
10	Protections	
	i. Surge protection	1.5 kV for 50 Micro seconds
	ii. Over voltage protection	300 V AC for 2 minutes
	iii. High Voltage protection	1.72 kV AC for 1 minute
	iv. Insulation resistance	Minimum 2 mega ohms with 500 V megger
11	Driver type	Constant current driver with short circuit protection
12	Driver components	Industrial grade only
13	THD	< 20 %
14	Efficiency of driver Electronic	Efficiency of driver > 85 %
15	Construction of Housing	Pressure die cast aluminium or CRCA
16	Finishing	Powder coated/anodized
17	Ingress protection	IP 65 – Outdoor

NOTE

1. LED luminaries shall also conform to LM-80 for LEDs used.
2. Firms have to submit warranty certificate for 5 (five) years along with supply.
- 3.

SIGNAGE SPECIFICATIONS FOR ALUMINIUM LED LIT LETTER



45. SUBMERSIBLE PUMP:

5HP (3.7KW) Submersible Pump, working on 3 Phase, 415V AC, 25 Stage having discharge rate of 15 to 90 Litres per minute, head range of 25 to 183 Meter with water filled cooling type. The level of protection shall be IP-68, Pump housing shall be made of stainless steel, pump shaft shall be made of stainless steel, motor housing shall be made of stainless steel, motor shaft shall be made of made of stainless steel, thrust bearing shall be made of carbon + stainless steel, impeller & diffuser shall be made of high-quality abrasion resistant noryl. The winding of the motor shall be copper wound. The make of pump shall be similar to KS40-5025 of Kirloskar.

46. STARTERS:

Each motor shall be provided with a starter of suitable rating. contractor shall select suitable rating and type of starter for the motors as per directions and approval from relevant authorities. Starters shall be in accordance with relevant IS Codes.

The following capacity contactors and overload relays shall be provided for different capacity motors or as per Type 2 Coordination chart published by manufacturer whichever is suitable as per selected make.

Motor Rating	Type of Starter	Contactora Current	Overload Relay Capacity Range
5 HP	DOL	16 Amps	6-10 Amps
7.5 HP	DOL	16 Amps	9-15 Amps
10 HP	DOL	25 Amps	9-15 Amps
12.5 HP	DOL	25 Amps	9-15 Amps
15 HP	Star Delta	25 Amps	9-15 Amps
20 HP	Star Delta	32 Amps	14-23 Amps
25 HP	Star Delta	32 Amps	14-23 Amps

47. CABLE TRAYS:

Cable trays, of sizes as per schedule of quantities and drawings shall be of perforated doubled bend channel or of ladder design as specified in BOQ. Cable trays shall be fabricated from sheet steel of thickness as per BOQ and shall be complete with tees, elbows, risers, and all necessary hardware

Trays shall be hot dip galvanized and all the accessories shall be factory fabricated, site fabricated accessories are not permitted Cable trays shall be erected in perfect level and plumb and shall comply with the following:

Trays shall have suitable strength and rigidity to provide proper support for all the contained cables. Trays shall not have sharp edges, burrs or projections injurious to cable insulation. Trays shall include fittings such as bends, risers etc. for changes in direction and elevation. Each run of cable tray shall be completed before laying of cables, Cable trays shall be erected so as to be exposed and accessible.

Cable trays shall be mounted on support structure adequately at interval of 1-meter (Min) distance by means of painted galvanized (as specified) MS structural members secured to the structure by welding. Spacing of the support structure shall be such that the cable trays shall remain perfectly horizontal without buckling when fully loaded with cable runs.

The length of vertical supporting members for horizontal tray runs shall be to suit the number of tray tiers required. Cable trays shall be bolted to the support structure. Minimum clearance between the top most tray tier and the ceiling shall be 300 mm. Trays shall be erected properly to present a neat and clean appearance.

This support should be capable of withstanding the entire weight of cable trays and cable contained in the trays. Additional supports are to be provided at both ends of the cable trays and at all bends. The entire cable tray system shall be rigid.

Support structure shall be fabricated from suitable size L Angles/Square Tubes of 6mm thick (Min).

Cables shall be fixed to the tray by clamps fabricated from minimum 3 mm thick GI sheets the cables shall be dressed properly so as to provide minimum one cable diameter clearance between adjacent cables and from tray ends.

Cable trays shall be earthed by 2 runs of 25 mm x 3 mm GI strips throughout their lengths.

48. CONCRETE:

The detailed cement concrete specification gives information about quality and the quantity of the materials, proportion of mortar, workmanship, method of preparation and execution of work etc. The cement concrete specification is properly prepared which makes it easy on site for execution of cement concrete work.

Coarse Aggregates:

Coarse aggregate shall be of broken stones of granite or similar stones. They shall be free from dust, dirt and other foreign matters. Size of the stones should be 20 mm and down all should be retained on 5 mm square mesh and well graded such that it should not have voids more than 42 %.

Fine Aggregates:

Fine aggregates shall be of coarse sand and should have hard, sharp and angular grains. The grains should pass the screen of 5 mm square mesh. The sand should be of standard specification and should be free from dust, silt and it should not be obtained from sea. Cement used for the construction should be fresh and it should not be too old. It should be of good quality and should meet all the standard specifications. The minimum compressive strength of cement should be 175 kg/ m².

Water:

Water should be clean and free from alkaline and other acidic matter. It should be suitable for drinking purpose.

Proportion:

M7.5:

The proportion of the cement concrete should be 1:4:8 or as prescribed. For the proportion of 1:4:8 the quantity of materials goes as one part of cement, four parts of sand and eight parts of aggregates.

M10:

The proportion of the cement concrete should be 1:3:6 or as prescribed. For the proportion of 1:3:6 the quantity of materials goes as one part of cement, three parts of sand and six parts of aggregates.

M15:

The proportion of the cement concrete should be 1:2:4 or as prescribed. For the proportion of 1:2:4 the quantity of materials goes as one part of cement, two parts of sand and four parts of aggregates.

M20:

The proportion of the cement concrete should be 1:1.5:3 or as prescribed. For the proportion of 1:1.5:3 the quantity of materials goes as one part of cement, one and half parts of sand and three parts of aggregates.

Grade of Concrete	Mix of (Cement: Sand: Aggregate)	Size of Coarse Aggregates
M20	1:1.5:3	20 mm
M15	1:2:4	12.5 mm, 40 mm, 60 mm
M10	1:3:6	20 mm, 40 mm, 60 mm
M7.5	1:4:8	40 mm, 63 mm
M5	1:5:10	40 mm, 63 mm
Low Grade	1:6:12	40 mm, 63 mm

Mixing:

Hand Mixing:

Hand mixing is done on masonry platform or iron sheet tray. For the proportion of 1:2:4 first of all 2 boxes of sand and one bag of cement shall be properly and thoroughly mixed. Then 4 boxes of aggregates are added into the mix and then it is again properly mixed. The mixture should be dry mixed till all the materials are mixed together. Water is then added gradually along with turnings of the mixture. Generally, 25-30 litres of water per bag of cement is used to obtain plastic mix of required workability and water cement ratio.

Machine Mixing:

In machine mixing for the proportion of 1:2:4 first of all 2 boxes of sand are dumped into the cement concrete mixer then one bag of cement and four boxes of aggregates are gradually added and rotated for dry mix to obtain required colour and then required quantity of water is added by water can. While being mixed, generally 25-30 lit of water per bag of cement is used to obtain required workability and water cement ratio.

Curing:

When the concrete gets hardened (generally after 3-5 hours of laying) wet gunny bags are placed on the concrete surface to keep the surface damp till 24 hours. The next day onward the concrete surface is flooded with water for 15 days for proper curing.

49. HIGH MAST

The scope of this work covers Design, manufacture, transport, installation, testing and commissioning of the complete lighting system, using Raising and Lowering type of High mast Towers including the Civil Foundation Works and arrangements with contactor and timer for operation of flood light fittings during all night & part night. All items required for the safe and efficient operation and maintenance of the lighting system, including the high mast, whether explicitly stated or not shall be made by The Contractor.

49.1 Applicable standards:

The following shall be the Reference Standards for the loading of the High mast:

Code No.	Title
a. L.S. 875 (Part III)1987	Code and practice for design loads for structures
b. BSEN 10025	Grades of MS Plates
c. BS.ISO 1461	Galvanizing
d. TR No.7 2000 of IL.E. UK.	Specification for mast and foundation

49.2 Design of mast structure:

The mast shall be capable of withstanding the wind pressure existing in Bangalore division/ area under worst condition.

Design shall be based on dynamic condition resulting from the maximum wind pressure.

Dynamic Loading for the Mast:

The mast structure shall be suitable to sustain an assumed maximum reaction arising from a wind speed as per IS 875 (three second gust), and shall be measured at a height of 10 meters above ground level. The design life of the mast shall be 25 years

Construction of mast:

The mast shall preferably be manufactured from mild steel / BSEN 10025/ DIN 17100 / FE to form a multifaceted continuously tapered profile and shall be delivered in multiple sections of effective length 10metres. The mast shall be 16 Meters high and of polygonal construction presenting a good

visual appearance Thus a 16 M mast in 2 sections to site. Weight of Mass shall be not less than 910Kg. Weight of Lantern Carriage shall not be less than 200 Kgs.

Each section shall be fabricated out of single plate duly folded and welded. There shall be only one longitudinal seam weld per section. Sections with more than one weld, circumferential or longitudinal, shall not be accepted. At site the sections shall be joined together by slip-stressed-fit method and joining shall be done with stressing equipment, thus conforming a sleeve joint. No site welding or bolted joint shall be done on the minimum top diameter shall be 150mm. The overlap distance shall have full penetration of longitudinal welds.

Bottom diameter and plate thickness shall be as per the structural requirements.

The mast shall be hot dip galvanised both internally and externally having a uniform thickness of not less than 60 microns and two coat of aluminium marine paint. The life of the mast shall not be less than 25 years.

The procedural weld geometry and the workmanship shall be exhaustively tested by Radiography on the completed welds and certificates submitted.

The dimensions of the mast shall be decided based on proper design and design calculations shall be submitted for verification.

The offered mast shall be rigorously tested under "Wind tunnel testing" to ensure safety of the structure. The testing method, factors taken and norms applied shall be furnished along with the offer.

49.3 Base flange of mast:

The mast shall be provided with fully penetrated base flange which shall be free from any lamination or incursion. The welded connection of the base flange shall be fully developed to the strength of the entire section.

The base flange shall be provided with supplementary environmental protection of the mast, the entire fabricated mast shall be hot dip galvanised, internally and externally, having a uniform average thickness of 85 microns for plates with more than 5mm thickness and 70 microns for 5mm or less. Galvanising shall be done in single dipping method for better adhesion and life. Minimum Base Dimension shall be 450 mm.

49.4 Base compartments:

Door Opening:

An adequate door opening shall be provided at the base of the mast and the opening shall be such that it permits clear access to equipment like winches, cables, plug and socket etc. and also facilitate easy removal of the winch. The door opening shall be complete with a close fitting, vandal resistant, weatherproof door, provided with a heavy-duty double internal lock with special paddle key.

The door opening shall be carefully designed and reinforced with welded steel section, so that the mast section at the base shall be unaffected and undue buckling of the cut portion is prevented.

Size of door opening shall not be more than 1200 x 250 mm to avoid buckling of the mast section under heavy wind conditions.

49.5 Head Frame:

The Head Frame which is to be designed as a capping unit of the mast, shall be of welded steel construction, galvanised both internally and externally after assembly. The top pulley shall be of appropriate diameter, large enough to accommodate the stainless-steel wire ropes and the multi-core electric cable. The pulley block shall be made of non-corrodable material, and shall be of die cast Aluminium Alloy (LM-6). Pulley made of synthetic materials such as Plastic or PVC are not acceptable. Self-lubricating bearings and stainless-steel shaft shall be provided to facilitate smooth and maintenance free operation for a long period. The pulley assembly shall be fully protected by a canopy galvanised internally and externally.

Close fitting guides and sleeves shall be provided to ensure that the ropes and cables do not dislodge from their respective positions in the grooves. The head frame shall be provided with guides and stops with PVC buffer for docking the lantern carriage.

49.6 Lantern Carriage:

The fabricated Lantern Carriage shall be provided for holding the flood light fittings and control gear boxes.

Lantern Carriage shall be of special design and of durable steel tube construction to act as conduits with cable holes fully protected by grommets.

It shall be designed to hold required Nos. of flood light fittings and the control gear boxes and lanterns and also have a perfect self-balance

It shall be provided with cast Aluminium junction box and mounting plates.

It shall be fabricated in two halves and joined by bolted flanges with stainless steel bolts and nyloc/stainless steel nuts to enable easy installation / removal from the erected mast during maintenance.

The inner lining of the carriage shall be provided with the raising and lowering operation of the carriage

This assembly shall not touch the lower surface of the mast.

It shall be so installed that it does not cause any damage to the surface of the mast and is provided with protection buffer arrangement.

It shall be hot dip galvanised after fabrication.

Raising and Lowering mechanism:

For the installation and maintenance of the luminaires and lamps, it will be necessary to lower and raise the Lantern Carriage Assembly. To enable this, a suitable Winch arrangement shall be

provided, with the winch fixed at the base of the mast and the specially designed head frame assembly at the top.

49.7 Winch arrangements:

For easy raising and lowering of lantern carriage assembly a suitable Winch Arrangement shall be provided in the base of the mast complete with top pulley, Winch, Stainless steel wire ropes and Winch driving power tool.

The winch shall be of completely self-sustaining type without the need for brakes, springs or clutches so as to eliminate any requirement of adjustment or possibility of being affected by moisture or lubrication. Each driving spindle of the winch shall be positively locked when not in use, gravity activated PAWLS, operating speed, safe working load, recommended lubrication and serial number of the winch shall be clearly marked on each winch.

The gear ratio of the winch shall be 53: :1. However, the minimum working load shall be not less than 750 Kg. The driving spindle of the winch shall be positively locked when not in use by gravity activated pawls.

The winch shall be self-lubricating type by means of an oil bath and the oil shall be of recommended quality.

It shall be designed to be installed or removed from the door opening at the base of the mast.

It shall be grooved to ensure mechanically strong, stable and tidy rope lay with no chances of rope slippage.

The winch shall be located in the base compartment and shall be driven by two worm reduction gear boxes preferably made of cast iron / cast steel / phosphor bronze with lubricant filled in the factory and shall give a reduction ratio of 50: 1 and be operated both by manual or power drive.

The two steel drums shall be driven by individual gear boxes.

The control arrangement shall allow the sets of gears and their drums to be rotated simultaneously from single driven shaft for normal raising and lowering of the carriage.

The double drum winch shall have an arrangement with two independent ropes, each rope shall have one end attached to the lantern carriage and the other end clamped to the winch drum.

The rope termination in the winch shall be such a way that distortion or twisting is not involved during operation.

The rope termination in the winch shall be such that distortion or twisting is eliminated and at least 5 to 6 turns of rope remains on the drum even when the lantern carriage is fully lowered and rested on the rest pads

The winch shall be provided with two completely separate suspension systems which shall be laid one on top of the other so that the lantern carriage can be balanced and also individual drum can be adjusted without intervening the stainless wire ropes.

The winch shall be provided with water proof canopy.

The capacity, operating speed and the dimensions of the drum length and the recommended lubrication etc. shall be clearly marked on the winch.

It shall be capable to operate the winch by hand or by an integral power tool. Integral power tool with worm type gear is not acceptable.

A test certificates shall be furnished along with the winch for maximum load operated and for safety operation at full load.

The winch shall be certified for its capacity to handle a maximum load of required Nos. of flood light fittings as per the Schedule.

49.8 Top pulley assembly:

The pulley assembly shall be complete with Self-lubricating bearings and stainless-steel spindle

Suitable arrangements shall be made in pulleys such that the electric cables and the stainless-steel ropes are separated before passing over their respective pulleys.

The sleeve pulley arrangement shall be provided with axially and adjustable guides and stops shall be provided for docking the lantern carriage.

The pulley assembly shall be protected by a Aluminium painted canopy.

An external divider shall be provided on the pulley to separate stainless wire ropes and cables so that chances of wrapping together of the ropes and the cables in wound condition or when the lantern are in lowered position can be prevented.

49.9 Stainless Steel Wire Ropes:

The suspension system shall essentially be without any intermediate joint and shall consist of only non-corrdable stainless steel of AISI 316 grade of suitable size with factor of safety of 1:10. The load bearing capacity and factor of safety adapted has to be indicated.

The stainless-steel wire ropes shall be of 7/19 construction, the central core being of the same material. The overall diameter of the rope shall not be less than 6mm. The breaking load of each rope shall not be less than 2350Kg. Giving a factor of safety of over 5 for the system at full load as per the TR-7 referred to in the beginning of this specification. The end constructions of ropes to the winch drum shall be fitted with talurit. The thimbles shall be secured on ropes by compression splices. Two continuous lengths of stainless-steel wire ropes shall be used in the system and no intermediate joints are acceptable in view of the required safety. No intermediate joints/terminations, either bolted or else, shall be provided on the wire ropes between winch and lantern carriage.

49.10 Cable Connections:

The cable connections shall be made by suitable flexible power cables of appropriate size and rating.

The base compartment of the high mast shall have a terminal box for terminating the incoming cable.

Provision shall be made for electric supply at the base compartment to enable operation of power tool for raising and lowering of the lantern carriage assembly.

The trailing cables of the lantern carriage rings shall be terminated by means of metal cased plug and socket provided in the base compartment to enable flexibility.

Also, suitable provision shall be made at the base compartment of the mast to facilitate the operation of internally mounted, electrically operated power tool for raising and lowering of the lantern carriage assembly. The trailing cables of the lantern carriage rings shall be in the base compartment to enable easy disconnection when required.

49.11 Power drive:

Power Tool for the Winch:

A suitable high-powered, electrically driven internally mounted power tool, with manual over ride shall be supplied for the rising and lowering of the lantern carriage for maintenance purpose. The speed of the power tool shall be to suit the system. The power tool shall be single speed, provided with a motor of the required rating. The power tool shall be supplied complete with suitable control. The capacity and lifting of the electric motor used in the power tool shall be suitable for the lifting of the design load installed on the lantern carriage.

The power tool mounting shall be so designed that it will be not only self-supporting but also aligns the power tool perfectly with respect to the winch spindle during the operations. Also, a handle for the manual operation of the winches in case of problems with the electrically operated tool, shall be provided and shall incorporate a torque limiting device. The power tool operation shall always be through a separate torque-limiting device to protect the wire ropes from over stretching. It shall be mechanical with suitable load adjusting device. The torque limiter shall trip the load when it exceeds the adjusted limits. There shall be suitable provision for warning the operator once the load is tripped off. The torque limiter is a requirement as per the relevant standards in view of the overall safety of the system. Each mast shall have its own power tool motor.

The single speed electric power drive shall be provided with reversible motor suitable for 400/230V operation.

The power drive shall be connected to the winch via matching coupler. To protect the hoist rope system against over load the coupler shall incorporate a torque limiting clutch preset at the factory.

49.12 Winch winding and adjustable handle

For manual operation of the winch drum and for minor adjustment of the lantern carriage suitable handles shall be supplied.

49.13 Lightning finial

One number heavy duty hot dip galvanised lighting finial shall be provided for each mast. The lightning finial shall be minimum 1.2M in length and shall be provided at the centre of the head

frame. It shall be bolted solidly to the head frame to get a direct conducting path to the earth through the mast. The lighting finial shall not be provided on the lantern carriage under any circumstances in view of safety of the system.

49.14 Aviation obstruction lights:

Suitable Aviation Obstruction Lights of reliable design and reputed manufacturer shall be provided on the top of each mast.

49.15 Luminaires

Luminaires shall be specially designed with cast aluminium housing suitable for housing the lamp and control gears for the lamps. The luminaires shall be tested as per Indian standards and test reports shall be submitted along with the materials. The luminaires shall be suitable for installation on high masts.

49.16 Timer db

Supply and installation of Digital Timer DB 32A with suitable incoming and outgoing MCBs, timer switch, contactor for automatic ON/OFF of the above light fittings at a preset time, housed in water proof cabinet including cost of all materials, labour charges complete including all accessories as per specification

Note:

Work shall be carried out under close supervision of Engineer of KRIDE, Bengaluru.
2 sets of sample wiring materials shall be submitted to JGM/K-RIDE for approval before fabrication/commencement of work

Person (Contractor or his representative) who possesses a competency certificate from the EI shall supervise the work.

All the materials wherever applicable shall be of ISI marked.

No joint in the wiring is permitted. If any jointing is found subsequently, a penalty of Rs. 500/- for each joint will be deducted from the bills and also the contractor has to redo the portion.

The light fitting points have to be provided according to site condition and as per instructions of Engineer-in-charge.

HIGH MAST SYSTEM	
Height of mast	16 Meter
No. of sections	Two
Material construction	IS 2062 grade E350 / BS EN 10025 or Equivalent having minimum yield strength of 350 N/Sq. mm
Base dia. and top diameter (A/F)	Top: 150 mm, Bottom: 410 mm
Plate thickness	Top: 3 mm, Bottom: 3 mm

Cross section of Mast	20 side polygon.
Standard for of galvanisation	As per BS EN ISO 1461
Size of opening and door at base	1200 x 250 mm
Diameter of base plate	570 mm
Thickness of base plate	25 mm
Lightning protection finial	G.I single spike
Max.wind speed	39m/s as per IS: 875 (Part - III)
Number of foundation bolts	8 nos.
PCD of foundation bolts	490 mm
Type / diameter / length of foundation bolts	TS 600 / 30 mm dia / 850 mm long
LUMINAIRES CARRIAGE	
Material of construction	50 NB ERW Class B - M. S. Pipe
Diameter of carriage ring (mm)	535 mm (ID)
Construction	9 Arm, Welded, 2 sections
Load carrying capacity	4-5 Luminaire Asymmetrical 300W
TRAILING CABLE	
Conductor	Copper, 5 core, 2.5 sq. mm
Insulation	EPR insulated, PCP sheathed
No. of circuits per mast	One no. cable per mast
WINCH / POWER TOOL	
Type / SWL of winch	Double drum, SWL 750 Kg
Method of operation	Integral Motor
Motor capacity	1 HP
No of speeds	6 Pole, Single speed
Torque limiter	With mechanical tripping facility
STAINLESS STEEL WIRE ROPE	
Grade / construction	AISI 316, 7/19 construction
Number of ropes	Two continuous

50. L.T.DISTRIBUTION BOX FOR 63/100 KVA 11/0.44 KV TRANSFORMER (3 PHASE, 200A)

50.1 **DESCRIPTION OF MATERIALS:** - The L.T. Distribution Cabinets shall be installed on D.P. Structure for Plinth Mounted 11/4 KV Substation of the ratings indicated above. These Distribution Cabinets are to be outdoor type and to be fabricated out of 2 mm GI sheet steel. The body of the boxes shall have sufficient re- enforcement with suitable size of channels keeping a provision for fixing these boxes either on DP structure or plinths.

50.2 The Box shall have double door with self-locking (When the main MCCB is in close position the inner door cannot be opened and after closing of the inner door only the main MCCB can be closed) arrangement and a door handle conforming to general quality conditions. Any compromise on quality of the door handle used shall be liable for rejection. The roof of the

box shall be slightly slanting both sides with an overhang of 50 mm to the front and back side. Locking arrangement shall be Godrej Type, 3 Position Locking System for better Security. However, a separate provision for manual locking arrangement shall also be provided as stand by.

- 50.3 The nuts, bolts, washers used in the box shall be galvanized to avoid rusting. The door hinges shall not be visible from outside. The box shall have two nos of solid Earthing points on either side with an arrangement for sufficient ventilation.
- 50.4 The boxes should confirm to IP-55 degree of protection. Preference shall be given to those who have successfully conducted type test as mentioned above.
- 50.5 The box shall have provision of bus bars of copper mounted on epoxy resin cast bus insulators fixed on suitable fixing arrangement. The bus bars shall be conveniently placed so as to provide adequate clearance from the body of the box conforming to I.E. Rules applicable for L.T. supply with provision for one Bus Bar arrangement with 4 pole MCCB for all capacities of LTDBs & 1 number of outgoing feeder arrangement with 2sets of three pole MCCBs in each feeder for 100KVA LTDB. The Bus-Bar arrangement may be suitably made to house one outgoing feeders with sufficient clearance between phases inside the LT Distribution Boxes. There should be Heat Shrinkable bus bar insulation tubing of Red Yellow-Blue &Black. Alternatively phase colored insulated paint (not less than 3.0kv) should be applied on the Bus-Bars.
- 50.6 The arrangement and dimensions shall be as per the drawing enclosed.
- 50.7 The provision of Earthing is to be made up with Copper Flat of Size 25x4mm. Suitable cable glands of heavy duty, double compression type made up of Brass shall be provided at the bottom of the Box. One for incoming cable and one outgoing cable. Detachable plates shall be provided for fixing of cable glands.
- 50.8 The Drawings shown below are indicative. Prior to manufacturing the bidder shall submit detail drawing with arrangement of Bus bar, MCCB phase indicator lamps etc for approval by the purchaser.
- 50.9 MCCB: -MCCB shall be of reputed make preferably of L&T, Siemens, Havells, MDS, ABB.

The purchaser reserves the right to choose any one out of 4/3 Pole M.C.C.B.

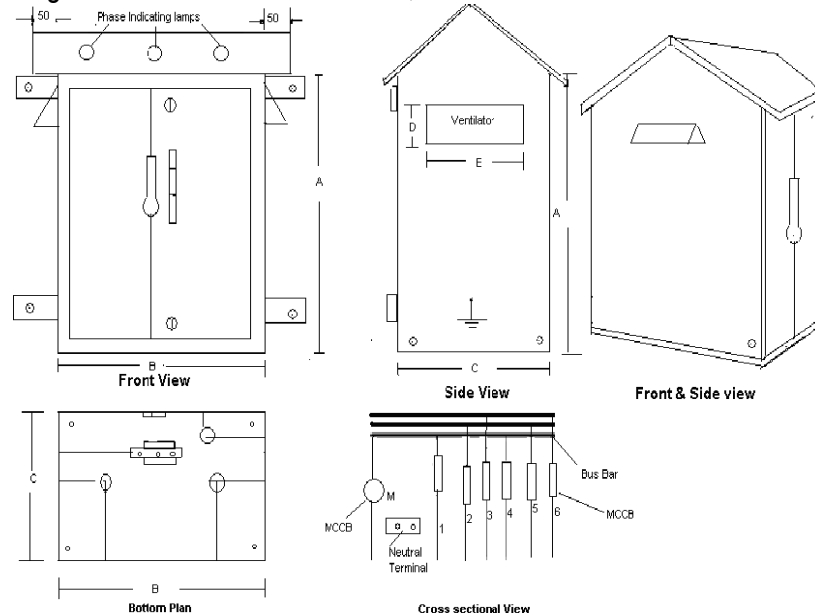
i)	Standard	IS-13947 (Part-2)/1993 & IEC Pub-947-2 (1989)
ii)	Rated Voltage	415V AC
iii)	No of Poles	4 Pole for Incomer & 3 Pole for outgoing feeders protection
iv)	Rated Current	200A
v)	Type fo Protection	Overload & short circuit protection is a must with static/electromagnetic/thermo magnetic trip release with manual resetting for neutral un-balance current protection

The percentage of rated service short circuit breaking capacity to rated ultimate short circuit breaking capacity shall be mentioned as per the Table - I, Page -13 of IS - 13947 (Part - 2).

All other features of the MCCB shall conform to the ISS : 13947 (Pt. - 2) / 1993 & IEC Pub - 947 (Pt. 2) /1989.

Preferably the rated ultimate Short Circuit Breaking Capacity is as follows, The Percentage (%age) of Rated Service short Circuit breaking capacity(Ics) to Rated Ultimate Short circuit Breaking Capacity(Icu) shall be mentioned as per Table-1 ,Page-13 of IS:13947(part-2)/1 989.

Drawing for LT Distribution Box 63 KVA, 100 KVA to 200 KVA Transformers



Note:
Separate Terminal bar to be provided for neutral connection.

Sl.no	Dimension Description	63 KVA	100 KVA	200 KVA
1	A	700	1000	1000
2	B	600	800	800
3	C	400	500	500
4	D	80	170	170
5	E	90	250	250
6	Incomer 4 Pole MCCB	100 A, with Over Current	200 A, with Over current setting 80% to 100%	400 A, with Over current setting 80% to 100%
7	Cable Size for Incomer	3.5 Core 50 sq.mm Cable	3.5 Core 95 sq.mm Cable	3.5 Core 185 sq.mm Cable
8	3 Pole MCCB for Outgoing Feeder	50 A, with over current setting 80% to 100%	100 A, with over current setting 80% to 100%	200 A, with over current setting 80% to 100%
9	Bus bar for incoming & Outgoing Feeders	25x6 mm	40x6 mm	50x8 mm
10	Bus bar Terminal	Electrolytic Aluminium	Electrolytic Aluminium	Electrolytic Aluminium
11	A Neutral Bus bar Similar to Phase Bus bar is to be provided			

Note:

1. 4 Pole MCCB for Incomer & 3 pole MCCB for outgoing feeder for individual tripping of each phase due to faults in the respective phases in the outgoing feeder, of reputed make to be specified in the tender along with test report from CPRI / Govt. testing lab. It shall conform to IS – 13947 (pt – 2) / 1993 with latest amendment. The bidder should also furnish the purchase order of MCCBs with serial number for verification of genuineness of the MCCBs.
2. The in-coming cable should be connected to the terminals of the M.C.C.B. with Bi-metallic lugs preferably of Usha Martin make duly crimped with Die-less crimping tools. There should be a metallic/heat resistant insulating barrier between the individual M.C.C. Bs so that the heat generated during any fault inside the Box should not pass to the other M.C.C.Bs.

50.10 General Technical Particulars for LT Distribution Boxes:

- 50.10.1 The L.T. Distribution Boxes should be of the dimensions as per the drawing & details in the table furnished.
- 50.10.2 The distribution boxes shall be duly wired with suitable size of PVC insulated single core copper cable or equivalent section copper / aluminium flat.
- 50.10.3 Terminal connectors for the earth connections to be provided in the box.
- 50.10.4 The distribution cabinet should be preferably of IP-55 protective category, with provision for lighting inside the cabinet. Sl. No., P.O no., Manufacturing year Punching Marks should be given on any one of the sidewalls of each box as an identification of Purchaser's property, besides furnishing a non-detachable Nameplate, which should exhibit the details of L.T. Distribution Cabinet.
- 50.10.5 TESTS: - The 4 pole & 3 pole MCCBs to be mounted with Distribution Boxes shall have been fully type tested as per the relevant standard at CPRI/ Govt. approved laboratory/NABL accredited laboratory. Purchaser reserves the right to demand repetition of the tests without any extra cost.

50.10.6 Inspection:

The successful tenderer shall grant free access to the Purchaser's representative at a reasonable time when the work is in progress. Inspection and acceptance of any equipment under this specification by the Purchaser shall not relieve the supplier of his obligation of furnishing equipment in accordance with the specification and shall not prevent subsequent rejection if the equipment is found to be defective.

The supplier shall keep the Purchaser informed in advance about the manufacturing programme so that arrangement can be made for inspection

The purchaser reserves the right to insist for witnessing the acceptance / routine testing of the bought-out items.

Acceptance and Routine Test:

All acceptance and routine tests as stipulated in the relevant standards shall be carried out by the supplier in presence of owner's representative.

50.10.7 Documentation:

The bidder shall furnish the following drawings along with the offer

1	Cross Sectional View
2	Arrangement of terminals & details of connection studs provided
3	Name Plate
4	Schematic drawing
5	Type Test Reports, in case MCCB has already been type tested
6	Test reports, literature of the bought-out items and raw materials
7	Testing facilities available at the works
8	List of customers with detailed address / purchase reference, quantity and year of supply with user certificate for such items.

50.10.8 Completeness of Equipment:

Any fittings accessories or apparatus which may not have been specifically mentioned in this specification but which are usually necessary in equipment of similar plant shall be deemed to be included in the specification and shall be supplied by the Tenderer without extra charge. All plant and equipment shall be complete in all details whether such details are mentioned in the specification or not.

50.10.9 Inspection & Testing:

The equipment shall successfully pass all the acceptance tests and routine tests referred to and those listed in the most recent edition of the standards given in this specification.

The Purchaser reserves the right to reject an item of equipment if the test results do not comply with the values specified or with the data given in the technical data schedule.

Type tests shall have been / shall be carried out at CPRI / National Govt. approved Laboratory and be witnessed by a representative of such laboratory. Routine tests shall be carried out by the Supplier at no extra charge at their works.

All costs in connection with the testing, including any necessary re-testing, shall be borne by the Supplier who shall provide the Purchaser with all the test facilities which the letter may require, free of charge. Measuring apparatus for routine tests shall be calibrated at the expense of the Supplier at an approved laboratory and shall be approved by the Purchaser.

The Supplier shall be responsible for the proper testing of the plant or materials supplied by sub-suppliers to the same extent as if the work, plant or materials were completed or supplied by the Supplier.

Any cost, incurred by the Purchaser in connection with inspection and re-testing as a result of failure of the equipment under test or damage during transport or offloading shall be to the account of the Supplier.

The supplier shall submit to the Purchaser five signed copies of the test certificates, giving the results of the tests as required.

The test certificates must show the actual values obtained from the tests, in the units used in this specification, and not merely confirm that the requirements have been met.

The Purchaser at his discretion may re-confirm the Test Results in his own laboratory or laboratory of his choice.

No inspection or lack of inspection or passing by the Purchaser's Representative of equipment or materials whether supplied by the Supplier or sub-supplier, shall relieve the Supplier from his liability to complete the contract works in accordance with the contract or exonerate him from any of his guarantees.

LIST of Materials/ Approved Brands

The make of materials shall be any one of the following approved make or any make having ISI approval / ISI marked or any make / manufacturer having ISO approval.

Sl.no	Description	Make intended to be supplied by the contractor.
1	MCCB / MCB / DB/ RCCB, COS etc	Legrand, L&T, ABB, Schneider, Siemens, C&S, Crompton Greaves Limited, Havells, Anchor, Indo Asian.
2	LT PVC insulated Single & Multicore Wire for Internal Wiring	Polycab, Finolex, Havells, KEI, V-Guard, Anchor, Sbee, Universal, Indo Asian,
3	Cable-Lugs & accessories for electrical general services.	Multi, 3M, Dowells
4	Light fittings/Lamp	Philips, Bajaj, Crompton Greaves, Havells, Syska, C&S, Wipro
5	LED make	Nichia, Osram, Seoul, Philips Lumileds, Cree, Lednium, Avago
6	PVC Rigid Conduit Pipes	Universal, VIP, Sudhakar
7	Modular Switches, Switch box, Covering plate, Sockets, Holders	Anchor Roma, Havells, Crabtree, Legrand, GM, C&S, Schneider, ABB, Cona, Siemens.
8	Industrial Sockets/ Ray Roll plug and Socket	Legrand, Indo Asian, Schneider, Siemens, Standard, Havells, Indo Asian
9	Switch fuse unit Single and Three Phase, Change over Switch	Abb, Cgl, Siemens, Indo Asian, Standard, Bch, C&S Schneider, Legrand, Havells, Indo Asian
10	LT Switch gear and control gears contactors and motor starters	Abb, L&T, Cgl, Siemens, Legrand, Schneider, Havells, Indo Asian.
11	FRP Meter Box	Sintex Or Hensel
12	LTUG/ HTUG XLPE cable	Sbee, Unistar, Finolex, Havells, Gloster, KEI, Universal,
13	Jointing Kit-HT/LT	Venus, Denson, Raychem
14	BLDC Fan	Usha, Atomberg, Orient, Crompton, Havells, Bajaj, Khaitan.
15	Exhaust Fan/Wall Mounting fan	Crompton, Havells, Khaitan, Bajaj, Usha, Orient,
16	HDPE Pipe	Jindal Pex, Supreme, Finolex, Mangalam
17	LILO Box/ Meter Box	Schneider, Sintex, Hensel, ABB, Hensel
18	Multi data Meter	Schneider, ABB, L&T, Elmeasure, Hpl
19	Submersible Pump	KSB, Kirloskar, Crompton, L&T, Jyothi, Cgl, Suguna
20	Pump Starter	L&T, Siemens, Crompton, KSB, Kirloskar, C&S
21	Digital Water Level Controller	L&T, Schneider, Siemens, Legrand, ABB
22	Microcontroller Timer Control Unit	Bajaj, Philips, Crompton, Siemens, Legrand
23	Solar Hybrid Emergency Lighting System	Tata or Equivalent
24	Air conditioner	Blue Star, Hitachi, LG, Samsung, Carrier, Voltas, Daikin, Toshiba
25	Water Cooler	Voltas, Bluestar, Usha

26	Geyser	Racold, Usha, Bajaj, Crompton, Havells, V-Guard,
27	Metering Cubicle	Any ESCOM Approved Make with Latest Approval
28	Transformer	Any ESCOM Approved with Latest Star Rating as Per ESCOM Requirement
29	CSS	Abb, L&T, Schneider, Siemens
30	RMU	Any ESCOM Approved Make
31	High Mast	Bajaj, Philips, Crompton Greaves
32	Insulators	Any ESCOM Approved Make with Latest Approval
33	HT DOLO FUSE	Any ESCOM Approved Make with Latest Approval
34	Lightening Arrestor	Any ESCOM Approved Make with Latest Approval
35	GOS	Any ESCOM Approved Make with Latest Approval
36	Octagonal Pole/Swaged Pole	Philips, Bajaj, Crompton, Utkarsh Tubes, Jindal
37	MS/GI Tubular Poles	Jindal, Tata
38	GI Pipe Class B	Jindal, Tata
39	Indoor outdoor Potheads for HT cable	Any ESCOM Approved Make
40	VRLA 12/120AH Battery Unit	AMARAJA, Exide, Bosch, AMCO, Hitachi

NOTE:

1. Products Certified by the Bureau of Indian Standards and Provided with ISI Mark are only acceptable. The Contractor must obtain a specific approval of engineer in charge in writing prior to using of any substitute make not mentioned in the list above or in case make without ISI or BIS standard are to be supplied.
2. Raw materials of fabricated products like Steel poles should be tested at approved test laboratory and certificate should be furnished by the contractor. Materials, welding, galvanizing etc., shall conform to IS specifications latest. DP test should be carried out on all the seam as per IS: 3658:1999 or latest.
3. Successful tenderer should obtain relevant approved ESCOM specification for Transformers (if supply of Tr. is involved) with endorsement of acceptance for Execution of work at respective location.
4. Before supply of the materials without approval of makes/models no supply shall be accepted
5. LED light fittings to be provided shall confirm to CEE/SWR specification No. SWR/LED Light fittings (Indoor/ Outdoor)/001-2016 or latest and should be with five year warranty.
6. Approval shall be obtained from **JGM/K-RIDE**

ELECTRICAL GENERAL SERVICES / EXPLANATORY NOTES

EXPLANATORY NOTES FOR ELECTRIFICATION OF BELLANDUR RAILWAY STATION:

1. The item price includes cost of designing, labour & all materials required to electrify the gate men lodge in all respect complete with supply and fixing of ceiling fans, luminaries with lamps and other items indicated in the scale of fittings for gate man lodge. It also includes the cost of wiring cables (sizes indicated for point wiring, circuit wiring and sub main wiring), suitable PVC conduits (from meter board to switch board and suitable size conduits required for complete wiring in each gate man lodge) with accessories, junction boxes, 1-way modular switches, sockets, metal boxes, lamp holders, ceiling roses, modular plates, pre-wired sub distribution boards and meter boards with meters, MCBs, earth electrodes etc.

2. Sizes of single core (copper conductor) cable for point wiring, circuit wiring and sub main wiring, circuits, distribution board/s, etc. for station building is explained as follows:

a. Light point/Circuit point: Wire of size 1.5 sq. mm, 1100 V grade PVC insulated, multistranded copper wire with relevant IS spec (IS 694 latest) in PVC concealed conduit and approved color with necessary junction boxes ceiling rose, angle holder etc. as required.

b. Plug point (6Amps): Wiring shall be with FR PVC insulated, multistranded copper of size 1.5 sq.mm with IS spec (IS 694 latest) with 5 A modular switch and modular sockets mounted on GI box concealed on wall.

c. Plug point (16Amps): Wiring shall be with FR PVC insulated, multistranded copper of size 1.5 sq.mm with IS spec (IS 694 latest) with 5 A modular switch and modular sockets mounted on GI box concealed on wall.

d. Ceiling fan point: The ceiling fan point wiring shall be done with PVC insulated, PVC sheathed multi stranded copper wire of size 1.5 sq. mm, 1100V grade, FELS with IS Spec (IS 694) with fan junction box, ceiling rose mounted on wall. The modular switch of 6A capacity shall be provided on switch board. The earthing connection shall be with 14 SWG copper wire.

e. Sub main 2.5 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as sub main. The submain shall be by means of two numbers of FRLS, PVC insulated, 2.5 sq.mm and 1 Number of 1.5 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest).

f. Sub main 4 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as sub main. The submain shall be by means of two numbers of 4 sq.mm FRLS, PVC insulated, multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest) and 2.5 sq.mm FRLS, PVC insulated, multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest).

g. Power circuit 6 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as per running meter. The power circuit shall be by means of four (RYB-N) numbers of FRLS, PVC insulated, 6 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest).

latest) and one number 2.5 sq.mm multi stranded copper wire.

h. Power circuit 10 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as per running meter. The power circuit shall be by means of four numbers of (RYB-N) FRLS, PVC insulated, 10 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest) and one number of 2.5 sq.mm multistranded copper wire.

i. PVC Conduit and its installation: The scope of work also involves supply and drawing of inside roof slab or wall for concealed wiring. All PVC pipes for wiring shall be conforming to IS 9537/P3/1983. No PVC pipe less than 20mm +/- 0.2mm in diameter with wall thickness of 2mm shall be used. The number of insulated conductors that can be drawn into PVC pipes should be as per table III of IS:732/1963 and should be easy to pull at the time of rewiring. Conduit inspection type coupler at reasonable interval shall be provided. Scope includes supply of couplers, joint box, bends etc. at contractor's cost. The specification and details of fixing / concealing of PVC conduit is given in technical specification.

j. Modular switches and modular plates : Supply and fixing of modular switch of 5/6Amps on the existing modular plate and switch box including connections as required (the cost includes erection charges). The modular switch shall meet specification of IS:3854. The detailed specification of switches is given in Technical specification enclosed as annexure-I.

k. Modular sockets: Supply and fixing of modular 3 pin 5/6/16/32Amps, Socket outlet on the existing switch box including connections but excluding modular plate etc., as required (the cost includes erection charges). The modular socket shall meet specification of IS. The detailed specification of sockets is given in Technical specification enclosed as annexure-I.

l. GI box for fixing modular switches and sockets along with Modular base and cover plate for modular switches in recess etc., as required (The cost includes erection charges). The modular box shall be hot dip galvanized factory fabricated, suitable in size for surface/recess mounting and suitable in size for accommodating the required number of switches and accessories were required to be used for applications other than modular switches/sockets.

2. Surface/wall mounted LED batten type light fitting 20/10W watt: The scope of work involves supply and fixing of LED batten type 10/20W lights. The item includes cost of LED surface/wall mounted light fitting with power LED lamp of required wattage complete with all accessories of approved make etc. The item price also includes labour & cost of all materials including cost of FR PVC insulated multistranded single core copper conductor cable, earthing connection etc. The price also covers Supply and erection of suitable clamps/brackets etc to fix light fittings under COP/FOB/Poles/roofs/walls/ sheds etc. The detailed specification of LED light is given in Technical specification enclosed as annexure-I.

3. Supply and erection of 1200mm ceiling fan: The scope of work involves supply and fixing of Energy Efficient, 1200 mm sweep with double ball bearing, 300 mm down rod, canopies, shackles, 3 Nos. of blades, suitable for operation on 230V AC 50Hz, Single phase supply, of the following specification.

- i. The fan blade thickness should be minimum 1.1. mm
- ii. The fan should conforming to IS 374/1979 (latest)

- iii. The minimum Air delivery should be 220 m³/min
- iv. The fan should conform to IS 616/2010 for safety requirement of Electronic equipment

The price shall also cover assembling of ceiling fan complete besides fixing to the hook and undertaking connection from ceiling rose. The price covers fixing phenolic laminated sheet cover on the fan box, FRLS PVC insulated multistranded single/three core copper conductor cable wiring and connecting with earthing system, etc.. The detailed specification of fan is given in Technical specification as discussed in enclosed annexure-I.

4. Earthing with 3 meter long, 50 mm dia G.I. Pipe class 'B' earthing electrode.

The scope of work involves construction of 2 Nos. of earthing for station building. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area. The detailed specification of earthing is given in Technical specification as discussed in under specification.

5. Supply and fixing of Prewired DBs: The scope of work includes supply and fixing of pre-wired DBs. The pre wired DB shall have following features:

- i. Recess/ Surface type with integral loose wire box.
- ii. Phase/ neutral/ earth terminal blocks for termination of incoming & outgoing wires.
- iii. Din Channel for mounting MCBs.
- iv. Arrangement for mounting incomer MCB/ RCCB/ RCBO/ MCCB as required.
- v. Copper Bus bar.
- vi. Earthing terminals.
- vii. Wiring from MCBs to phase terminal block.
- viii. Interconnection between terminal block/ incoming switch/ bus bar/ neutral terminal block/ earth terminal connector with specified size of FRLS pre-insulated copper conductor cable duly fitted with copper lugs/ thimbles.
- ix. Terminal blocks should be suitable for termination of conductor/ cable of required size but minimum rated cross section of the terminal blocks should be 6 sq. mm.
- x. Terminal block shall be made of flame retardant polyamide material.
- xi. Colour terminal blocks and FRLS wires for easy identification of RYB Phases, Neutral and Earth.
- xii. Prewired DB shall be provided with a detachable cassette for safe removal of MCBs, RCCBs. Terminal connectors from the DB without loosening the internal cable connections of phase and neutral circuits. (This is an optional feature.)
- xiii. The prewired DB shall have peelable poly layer on the cover for protection from cement, plaster, paints etc. during the construction period.
- xiv. Detachable plate with Knock out holes shall be provided at the top/ bottom of board. Complete board shall be factory fabricated and pre-wired in factory ready for installation at site. The box and cover shall be fabricated from 1.6mm sheet steel, properly pre-treated, phosphatized with powder coated finish.
- xv. Where specified it shall be of double door construction provided with hinged cover in the front.
- xvi. Prewired DB shall be factory manufactured by reputed manufacturer of MCB DBs.

The detailed specification of Earthing is given in specification enclosed as annexure-I.

6. Supply and fixing of MCB, RCCB, Timer and Contactors: The scope of work also includes supply and fixing of different capacity of MCBs and RCCBs as per the capacity of the MCB & RCCBs

mentioned in the above list. The scope of work also includes supply and fixing of on delay Timer 24A AC/DC, 220-240AC similar for ABB product ID 1SVR550107R5100 or any other approved make and supply and fixing of three pole power contactor with auxiliary contact as required similar to ABB Product ID 1SBL321074R8010. The item price also includes labour & cost of items required interconnection cables, screws etc. The timer and contactor is required to be provided in SDB as instructed by site Engineer. The detailed specification of MCB, RCCB, Timer and contactor is given in Technical specification enclosed as annexure-I.

7. Supply, erection, testing and commissioning of online UPS 2 kVA with isolation transformer suitable for single phase AC input and single phase AC output, floor mounted type indicative backup time 30 min. The cost of work includes supply and fixing VRLA battery set, battery stand cable connectors, nut bolts etc required for satisfactory commissioning of above work. The detailed specification of UPS has been discussed under specification chapter enclosed as annexure-I.

8. Supply, erection, testing and commissioning of LT feeder pillar of 125A comprising of items: i) incoming MCCB of 125A, 4 pole, 35kA (ics=100%Icu)-1 No. ii) outgoing MCCB of 63A, 4 pole, 25kA (ics=100%Icu)-4 Nos. iii) outgoing MCB 40A, 4pole, 10kA-4 Nos., iv) outgoing MCB 32A, DP, 10 kA-4 Nos. v) outgoing MCB single pole 32kA, 10 kA 4- Nos vi) Modular digital time switch and 3 phase contactor-2 set vii) sleeved / epoxy coated copper bus bar 250A in bus bar chamber viii) indication lights.

9. The scope and cost of work item includes cost of all materials including cost of LT feeder pillar. LT feeder pillar shall be weather proof (degree of protection not less than IP54), fabricated with 2mm thick CRCA sheet, conforming to IS:8623 (latest version), powder coated, suitable for operation on 3-phase, 4 wire 415V AC supply system, copper bus bars of 250A, LED type indication lights, earthing studs etc. Before the supply of feeder pillar approval of drawing shall be obtained from KRIDE. The detailed specification of feeder pillar has been discussed under technical specification enclosed as annexure-I.

10. Supply and fixing of 30W LED weather proof (IP-65) street light fitting suitable driver as per the specification enclosed as annexure-I. The scope of work involves provision of 1 mtr long 25 mm dia B class GI pipe bracket with fixing accessories. The item price also includes labour & cost of all materials including cost of FR PVC insulated multistranded single core copper conductor cable, earthing connection, supply and erection of suitable clamps/brackets/screws etc to fix light fittings under COP/FOB/Poles/roofs/walls/ sheds etc.

11. Supply and erection of 1.5 ton split AC unit, 4 star rating inverter type working on single phase supply with features of cooling complete with LCD display, cordless remote (for control of functions, on/off, timer, selecting fan speed (three speeds) and setting up of temperature), along with fabrication and supply and fixing of MS brackets for mounting outdoor units with wall mounted stabilizer conforming to relevant IS (latest version), suitable for operation on single phase 180 to 260 volts, 50 Hz incoming AC supply and output 200 to 230 volts A.C supply, with time delay relay, voltmeter, instant start provision with push button switch and installation and commissioning of AC plant, provision of rubber pads below the outdoor unit, heavy duty PVC flexible pipe (ISI marked) for drain, interconnecting cable and refrigerant copper pipes with thermal insulation. The scope of work also includes supply and fixing of dual channel

digital time switch with battery back-up 24 Hr operation similar to ABB product ID 2CSM222521R1000 or any other approved make. The item price also includes labour & cost of items required interconnection cables, screws etc. The timer is required to be provided in relay room for switching ON/OFF of two Nos. of AC units.

12. Supply and fixing of modular type single phase starter switch suitable for AC unit operation similar to ABB product ID 1SYK100001A1556 or any other approved make. The item price also includes labour & cost of items required interconnection cables, screws etc. This starter is required to be provided for switching ON/OFF of AC units.

13. Supply and fixing of three pole power contactor with auxiliary contact as required similar to ABB product ID 1SBL321074R8010 or any other approved make. The item price also includes labour & cost of items required for interconnection of cables, screws etc.

14. Supply and fixing of 50W, energy saving, environment friendly and robust open type vertical highbay/medium bay lighting with high power COB LED lights as source. The light fitting shall be similar to Havells Endura Highbrite or similar of any approved make.

15. Design, supply, erection, testing and commissioning of BELLANDUR name board of LED type glow sign in trilingual i.e Kannada, Hindi and English with combination of LED driver unit, angle iron supporting structure with foundation accessories. The contractor has to make his own arrangements for transportation of men and material at site. The exact name and spelling in all languages is tentative and successful tenderer should take approval for spelling in all 3 languages and design before supply and starting the work. The detailed specification of above sign board has been discussed under specification chapter enclosed as annexure-I.

16. The item price includes cost for Co-ordination/Liaoning /chasing with State Electricity Board authorities for various activities involved for availing new power connections, augmentation of loads, including collection of estimates for New connections, additional load, arranging payment from KRIDE, depositing payment to SEB's authority, release of load & other connected works etc.as required.

EXPLANATORY NOTES FOR POWER SUPPLY ARRANGEMENT TO BELLANDUR RAILWAY STATIONS:

1. Supply, fabrication, assembling, digging suitable pit and erection of Assembling, fabrication and supply of RCC DP (3.3 mtr width), 9 mtr. Long with accessories including fabrication. Scope also includes supply of 3 Nos. disc insulator of 45 kN with hardware, 2 Nos. of danger boards, 2 Nos. of anticlimbing device with suitable side rails and MS channels to mount the transformer, supply and fixing of metal oxide lightning arrestors which shall be of gapless type as per IEC60099-44 and IS3070 part (iii) of 11 kV rating for RYB phases with earth connection by suitable GI flat of sizes 25*3 mm, supply and fixing of 200A of GOS with suitable drop out fuses, clamps, connection with ACSR conductors, supply and fixing of alkathin tube for RYB phase, supply and fixing of guy set with strain insulators with suitable concreting materials. The scope also involves earth excavation for DP pole structure, base concreting with CC1:4:8 of dimensions (650x650x150mm), Pole concreting with CC 1:2:4 of dimensions (650x650x1700), coping with CC 1:2:4 (as per actuals), guy concreting with boulders, mud and sand, Installation of anticlimbing device, Caution/Danger boards etc., complete. The cost of work involves for satisfactory completion of supply and erection of above work. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed specification of poles, lightning arrestor, insulators, GOS is given under technical specification enclosed as annexure-I.

2. Manufacture, supply and fixing of galvanised wire net fencing chain made of 10 SWG MS frame of 40*40*5mm angle including erection. Fabrication of galvenised wire net fencing shall be made in rectangular formation as required with MS angle iron of 40*40*5mm spaced at about 2 meters and 10 SWG GI wire mesh shall be cut according to size and welded with angle frame. MS strip not less than 15*3mm size shall be provided and welded above GI wire along the angle frame to hold GI wire mesh. Height of enclosure shall be 2 meter above ground level. The portion of MS angle to be grouted in foundation shall be 500 mm. The fencing panels shall be erected on foundation constructed of size 200mm*200mm*500mm deep with cement concrete of M-10.

The iron gate shall be fabricated with 40mm*40mm*5mm MS angle iron frame with iron grill etc. as approved. The size of the gate shall be 2 mtr (height) * 3.5 mtr (height) *3.5 mtr. Width and fabricated in two parts of 1.75 mtr each. Gate shall be provided with sliding lockable bolt with pad lock. Gate shall be fixed on channels of size not less than 100*50mm, weighing 7.9 kg per meter with bolts and nuts and welded. Channels shall be erected on foundation constructed of size 300mm*300mm*500mm deep with cement concrete of M-10 grade.

Complete enclosure including gate and angles (except galvenised portion) shall be paited with approved shade of enamel paint over two coats of red oxide primer. Prior to construction approval of drawing shall be obtained from KRIDE.

3. Supply, Testing & laying of 11 kV, 3 Core, HTUG Cable, for insulations High quality clean XLPE compound shall be used (Free from micro voids, Moisture content, ambers and contaminations) with pressure extruded, inner sheath round wire armored as per IS-7098 (Part-2) Armoring wires dia in average $\pm 2.5\%$ and Resistivity 14 Ohms/KM (Max) as per IS-3975. As per the scope of work the size of the cable shall be 3x95 sq.mm sq.mm cables shall be supplied and laid. The detailed specification of cable has been discussed under technical specification enclosed as annexure-I. The scope of work also includes manual digging of cable trench or by drilling 5'6"/8" bore by HDD method and laying of

cable along 50/42/40/33 mm HDPE/PLB pipe as per site requirement, supply and laying of 2000mm length, 150 mm Dia RCC pipe, RCC collar, supply of cable route and cable joint indicating stones, drawing of cable in the trench, reconsolidation of trench and making good the road up to the satisfaction of BBMP, if any. In case of normal cable trench is required to be Dugged, excavation of cable trench of 450mm wide and 1000mm deep in all kinds of soil and refilling the cable trench with 150mm beddings of river sand above and below the cable including protection by laying country bricks across the trench, excavated soil free from unwanted materials, ramming, consolidating and bringing to its original finish.

In case trench is excavated on either side of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. depth with river sand cushioning for laying of cable throughout the length of trench. Stock Bricks should be laid breadthwise without any gap on the top of the cable in the trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of cable in the trench, the filled-up soil has to be rammed and the trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends. The scope also includes making loose coil pit for keeping extra cable near transformer centre and re-consolidation of the same.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of HT UG cable laying work.

The cable laying method shall comply with IS:1255 (1983). The cost of work also includes the associated works involved in satisfactory completion of cable supply and laying.

4. Supply, laying, testing and commissioning of LT UG cable of size 4C*120 sq.mm. The detailed specification of of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back

to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC pipe. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work.

5. Supply, installation, testing and commissioning of 11 kV/440V, outdoor type, Delta/star connected, copper wound, DYn11, ONAN cooled, power distribution transformer conforming to IS:1180/2014 or latest (energy efficiency shall not be less than-II) complete with all accessories and first oil filling oil as required. The detailed specification of transformer is given under technical specification enclosed as annexure-I. The scope also includes supply and fixing LT distribution kit suitable for above transformer. The specification of LT distribution kit has been discussed under specification chapter. The item cost includes supply and fixing required for satisfactory commissioning of LT distribution transformer kit.

6. Supply and making cable end termination by Heat Shrinkable Indoor & Outdoor type cable termination kit for 11 kV XLPE cables. The size of cable end termination shall be 3x95 Sq.mm. The specification of end termination kit has been discussed in section 8-B under technical specification. The cable laying method shall comply with IS:1255 (1983). The cost of work also includes cost cable lugs and other associated works etc. for satisfactory completion of cable end termination.

7. Earthing arrangement as discussed in specification chapter. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. The scope also includes fixing of GI earth strip from earth chamber to other equipments of transformer centre.

Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area.

EXPLANATORY NOTES FOR PROVISION OF SUBMERSIBLE PUMP BELLANDUR RAILWAY STATION:

1. The scope of work involves supply erection, testing and commissioning of electrically operated water lubricated water cooled submersible pump set 5 HP capacity, 25 stages suitable to operate 3 phase 415V AC, with outdoor type DOL starter consisting of suitable size board, contactor relay, three phase preventer, volt meter, ammeter, pilot lamps and on/off button, supply and laying of submersible flat copper cable of size 2.5 sq.mm., borewell clamp, cap and GI bend for the above, supply & fixing of gun metal/non-return valve etc. including cost of all materials, labour charges with allied works etc.

2. Supply, laying, testing and commissioning of LT UG cable of size 4C*16 sq.mm. The detailed specification of of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work. The scope also includes supply, laying and connection of GI wire with suitable connector to electrical equipment to earthing.

3. Earthing arrangement as discussed in specification chapter enclosed as annexure-I. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. The scope also includes fixing of GI earth strip from earth chamber to other equipments of transformer centre.

Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area.

EXPLANATORY NOTES FOR PROVISION OF PF LIGHTING FOR BELLANDUR RAILWAY STATION:

1. The item price includes fabrication, assembling, supply, erection, testing and commissioning of hot dip galvanized octogonal pole of 5.5 mtr. long made up of 3 mm thick sheet, top 70mm A/F and bottom 130mm M/F with single arm bracket 350mm long to fix street light luminaire with foundation bolt, base plate 250*250*12mm and built in junction box with strip connector, cut out and all accessories with street light pole/platform pole. The item price involves making cement concrete foundation 1:3:6 and erection of octogonal pole, supply and fixing of 75 mm dia PVC pipe in cement concrete for cable raising and curing of foundation. The detailed specification of pole has been discussed under Technical Specification chapter enclosed as annexure-I.

2. Supply of 30W LED WP (IP-65) street light fitting with driver circuit complete set as per CEE/SWR specification. Fixing, testing and commissioning of LED street light fitting along with supply and provision of 1mtr long 25mm dia B class GI pipe bracket with fixing accessories. The scope of work also involves supply and connecting 3 core 1.5 sq.mm multistranded PVC cable. The detailed specification of light fitting has been discussed under Technical Specification chapter enclosed as annexure-I.

3. Supply, laying, testing and commissioning of LT UG cable of size 4C*16 sq.mm. The detailed specification of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the

associated works involved in satisfactory completion of LT UG cable laying work. The scope also includes supply, laying and connection of GI wire with suitable connector to electrical equipment to earthing. The scope of work also involves supply and fixing of crimped terminal lugs to suit 4C*16 sq.mm LT UG cable and supply and fixing of cable gland to suit 4C*16 sq.mm LT UG cable. Fixing/running of 8 SWG GI earth wire.

4. Earthing arrangement as discussed in specification chapter, enclosed as annexure-I. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. The scope also includes fixing of GI earth strip from earth chamber to other equipments of transformer centre.

Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area.

5. The scope also includes releasing of existing lighting poles from the platform, handing over to concerned SSE/SWR, obtaining acknowledgement and furnishing the same to KRIDE for records.

EXPLANATORY NOTES FOR PROVISION OF APPROACH ROAD LIGHTING FOR BELLANDUR RAILWAY STATION:

1. The item price includes fabrication, assembling, supply, erection, testing and commissioning of hot dip galvanized octagonal pole of 5.5 mtr. long made up of 3 mm thick sheet, top 70mm A/F and bottom 130mm M/F with single arm bracket 350mm long to fix street light luminaire with foundation bolt, base plate 250*250*12mm and built in junction box with strip connector, cut out and all accessories with street light pole/platform pole. The item price involves making cement concrete foundation 1:3:6 and erection of octagonal pole, supply and fixing of 75 mm dia PVC pipe in cement concrete for cable raising and curing of foundation. The detailed specification of GI octagonal pole has been discussed under specification chapter enclosed as annexure-I.

2. Supply of 30W LED WP (IP-65) street light fitting with driver circuit complete set as per CEE/SWR specification. Fixing, testing and commissioning of LED street light fitting along with supply and provision of 1mtr long 25mm dia B class GI pipe bracket with fixing accessories. The scope of work also involves supply and connecting 3 core 1.5 sq.mm multistranded PVC cable. The detailed specification of LED light fitting has been discussed under specification chapter enclosed as annexure-I.

3. Supply, laying, testing and commissioning of LT UG cable of size 4C*16 sq.mm. The detailed specification of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to its original finish.

In case trench is excavated on either side of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work. The scope also

includes supply, laying and connection of GI wire with suitable connector to electrical equipment to earthing. The scope of work also involves supply and fixing of crimped terminal lugs to suit 4C*16 sq.mm LT UG cable and supply and fixing of cable gland to suit 4C*16 sq.mm LT UG cable. Fixing/running of 8 SWG GI earth wire.

4. Earthing arrangement as discussed in specification chapter. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. The scope also includes fixing of GI earth strip from earth chamber to other equipments of transformer centre.

Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area.

EXPLANATORY NOTES FOR PROVISION OF CIRCULATING AREA LIGHTING FOR BELLANDUR RAILWAY STATION:

1. Supply, erection, testing and commissioning of 16 mtr. high mast system, totally Hot dip galvanized high mast system and accessories including head frame, steel wire rope 6mm/8mm diameter, double drum with galvanized pattern carriage arrangements and control gear boxes, lighting with all lead and lift. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed technical specification of high mast system is given under technical specification chapter enclosed as annexure-I.

2. Supply and erection of foundation bolts manufactured from special steel suitable for above high mast system and erection of the same in M-20 cement concrete. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges.

3. Design and casting of suitable shallow foundation with M-20 concrete for 20 mtr. high mast system considering the site as 10T/sq.mtr at 2 mtr depth with all material and labour. The successful tender shall obtain the design and drawing approval prior to commencing of the work. The earth work and foundation work shall be carried out as per the approved drawing. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed technical specification of M-20 cement concrete is given under technical specification under section-8.

4. Supply and fixing of 150W outdoor type LED flood light fitting with driver circuit having sufficient illumination output for high mast application. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed technical specification of LED flood light fitting is given under technical specification under section-8.

5. Supply and laying of 4C*70 & 16 sq.mm, LT XLPE UG cable. The scope work includes laying of cable by manual earth work, providing cable gland, LT cable termination by using suitable lugs, crimping and connecting the cable ends wherever required with suitable GI nut and bolts. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed technical specification of LT cables is given under technical specification under section-8.

6. Supply and installation of timer DB with suitable incoming and outgoing MCBs, timer switch, contactor for automatic on/off of the above high mast lighting system at pre-set time, high mast lantern's down / rise motor control switch housed in water proof cabinet. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed technical specification of LT cables is given under technical specification.

7. Earthing of High mast system and its control DB. The scope of work includes cost of all material, construction of earth chamber, supply and fixing DI earth strip, suitable nut bolts for connecting control DB, high-mast, earth pipe, measuring earth value and inscribing the same on earth chamber, loading and unloading charges, labour charges and other incidental charges. The detailed technical specification of earthing is given under technical specification enclosed as annexure-I.

EXPLANATORY NOTES FOR PROVISION OF LIGHTING ARRANGEMENT IN COVERED PF AT BELLANDUR RAILWAY STATION:

1. Fabrication, supply of fixing 6/5/4 way bracket of flat size 50*6mm, 500mm long with reel insulator for stringing of multi strand single core cable in covered PF. Fixing of bracket to structure of covered platform shelter shall be either welded or bolt, nuts type as per instruction of site Engineer.

2. Supply, fixing to 6/5/4 way MS bracket and stringing of multi strand 10 sq.mm copper wire RED, YELLOW, BLUE, BLACK, GREEN wire. The stringing shall be done very neatly without affecting aesthetic look of covered PF.

3. Supply of HDPE pipe of size 50mm PE 80 PN-4

4. Supply, fixing, testing and commissioning of 1*20W LED light batten fitting with LED lamp 4 feet long with driver circuit as per CEE/SWR specification No.SWR/LED light fitting (indoor/out door)/011-2016 dtd 18.04.2016. Fixing of tubelights shall be done with 3C*1.5 sq.mm copper wire and it shall be tapped from nearest cable. The 30% and 70% circuit connection shall be ensured while connecting to the cable. The scope of work involves supply and fixing of suitable clamps for fixing of above lights in covered PF. The detailed specification of 20W LED has been discussed under Technical specification chapter enclosed as annexure-I.

5. Supply and fixing of energy efficient 1200mm sweep energy smart AC ceiling fan, with suitable down rod, 3 nos of blades, electronic regulator 5 star rating and accessories required like 3 core PVC multistrand cable from nearest cable. The cost of work involves cost of nut, bolts, safety pins. Fixing clamps etc. required for satisfactory completion of work. The 30% and 70% circuit connection shall be ensured while connecting to the cable. The specification of ceiling fan has been discussed under specification chapter enclosed as annexure.

6. Supply, laying, testing and commissioning of LT UG cable of size 4C*16 sq.mm. The detailed specification of of LT cable as discussed under specification chapter enclosed as annexure-I. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level.

Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work. The scope also includes supply, laying and connection of GI wire with suitable connector to electrical equipment to earthing. The scope of work also involves supply and fixing of crimped terminal lugs to suit 4C*16 sq.mm LT UG cable and supply and fixing of cable gland to suit 4C*16 sq.mm LT UG cable. Fixing/running of 8 SWG GI earth wire. The scope of work also involves supply and fixing of sintex box of size 333*233*120mm model No.GSJB-3020 hinged door with 32 A strip, terminating the end of the cable in covered PF.

EXPLANATORY NOTES FOR PROVISION OF 5 Nos. OF SUBMERSIBLE PUMPS AT 5 Nos. of GOOMTIES.

1. The scope of work involves supply erection, testing and commissioning of electrically operated water lubricated water cooled submersible pump set 5 HP capacity, 25 stages suitable to operate 3 phase 415V AC, with outdoor type DOL starter consisting of suitable size board, contactor relay, three phase preventer, volt meter, ammeter, pilot lamps and on/off button, supply and laying of submersible flat copper cable of size 2.5 sq.mm., borewell clamp, cap and GI bend for the above, supply & fixing of gun metal/non-return valve, supply and fixing of GI pipe in trenches, in borewell, galvanised mild steel tubes (medium grade) 20mm nominal bore with all fittings including cost of all materials, labour charges with allied works etc. The detailed specification of submersible pump shall be as per specification chapter enclosed as annexure-I.

2. Supply, laying, testing and commissioning of LT UG cable of size 4C*16 sq.mm. The detailed specification of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work. The scope also includes supply, laying and connection of GI wire with suitable connector to electrical equipment to earthing.

3. Earthing arrangement as discussed in specification chapter. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle,

charcoal/coke and salt, etc. The scope also includes fixing of GI earth strip from earth chamber to other equipments of transformer centre.

Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area. The detailed specification of earthing has been discussed under specification chapter enclosed as annexure-I.

EXPLANATORY NOTES FOR PROVISION OF PF LIGHTING FOR CARMELARAM RAILWAY STATION:

1. The item price includes fabrication, assembling, supply, erection, testing and commissioning of hot dip galvanized octagonal pole of 5.5 mtr. long made up of 3 mm thick sheet, top 70mm A/F and bottom 130mm M/F with single arm bracket 350mm long to fix street light luminaire with foundation bolt, base plate 250*250*12mm and built in junction box with strip connector, cut out and all accessories with street light pole/platform pole. The item price involves making cement concrete foundation 1:3:6 and erection of octagonal pole, supply and fixing of 75 mm dia PVC pipe in cement concrete for cable raising and curing of foundation. The specification of GI octagonal pole has been discussed under specification chapter enclosed as annexure-I.

2. Supply of 30W LED WP (IP-65) street light fitting with driver circuit complete set as per CEE/SWR specification. Fixing, testing and commissioning of LED street light fitting along with supply and provision of 1mtr long 25mm dia B class GI pipe bracket with fixing accessories. The scope of work also involves supply and connecting 3 core 1.5 sq.mm multistranded PVC cable. The specification of LED light fitting has been discussed under specification chapter enclosed as annexure-I.

3. Supply, laying, testing and commissioning of LT UG cable of size 4C*16 sq.mm. The detailed specification of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work. The scope also includes supply, laying and connection of GI wire with suitable connector to electrical equipment to

earthing. The scope of work also involves supply and fixing of crimped terminal lugs to suit 4C*16 sq.mm LT UG cable and supply and fixing of cable gland to suit 4C*16 sq.mm LT UG cable. Fixing/running of 8 SWG GI earth wire.

4. Earthing arrangement as discussed in specification chapter enclosed as annexure-I. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. The scope also includes fixing of GI earth strip from earth chamber to other equipments of transformer centre.

Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area.

Explanatory notes for Electrification of Huskur Railway Station building.

1. The item price includes cost of designing, labour & all materials required to electrify the gate men lodge in all respect complete with supply and fixing of ceiling fans, luminaries with lamps and other items indicated in the scale of fittings for gate man lodge. It also includes the cost of wiring cables (sizes indicated for point wiring, circuit wiring and sub main wiring), suitable PVC conduits (from meter board to switch board and suitable size conduits required for complete wiring in each gate man lodge) with accessories, junction boxes, 1-way modular switches, sockets, metal boxes, lamp holders, ceiling roses, modular plates, pre-wired sub distribution boards and meter boards with meters, MCBs, earth electrodes etc.

Sizes of single core (copper conductor) cable for point wiring, circuit wiring and sub main wiring, circuits, distribution board/s, etc. for station building is explained as follows:

a. Light point/Circuit point: Wire of size 1.5 sq. mm, 1100 V grade PVC insulated, multistranded copper wire with relevant IS spec (IS 694 latest) in PVC concealed conduit and approved color with necessary junction boxes ceiling rose, angle holder etc. as required.

b. Plug point (6Amps): Wiring shall be with FR PVC insulated, multistranded copper of size 1.5 sq.mm with IS spec (IS 694 latest) with 5 A modular switch and modular sockets mounted on GI box concealed on wall.

c. Plug point (16Amps): Wiring shall be with FR PVC insulated, multistranded copper of size 1.5 sq.mm with IS spec (IS 694 latest) with 5 A modular switch and modular sockets mounted on GI box concealed on wall.

d. Ceiling fan point: The ceiling fan point wiring shall be done with PVC insulated, PVC sheathed multi stranded copper wire of size 1.5 sq. mm, 1100V grade, FELS with IS Spec (IS 694) with fan junction box, ceiling rose mounted on wall. The modular switch of 6A capacity shall be provided on switch board. The earthing connection shall be with 14 SWG copper wire.

e. Sub main 2.5 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as sub main. The submain shall be by means of two numbers of FRLS, PVC insulated, 2.5 sq.mm and 1 Number of 1.5 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest).

f. Sub main 4 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as sub main. The submain shall be by means of two numbers of 4 sq.mm FRLS, PVC insulated, multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest) and 2.5 sq.mm FRLS, PVC insulated, multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest).

g. Power circuit 6 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as per running meter. The power circuit shall be by means of four (RYB-N) numbers of FRLS, PVC insulated, 6 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest) and one number 2.5 sq.mm multi stranded copper wire.

h. Power circuit 10 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as per running meter. The power circuit shall be by means of four numbers of (RYB-N) FRLS, PVC insulated, 10 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest) and one number of 2.5 sq.mm multistranded copper wire.

i. PVC Conduit and its installation: The scope of work also involves supply and drawing of inside roof slab or wall for concealed wiring. All PVC pipes for wiring shall be conforming to IS 9537/P3/1983. No PVC pipe less than 20mm +/- 0.2mm in diameter with wall thickness of 2mm shall be used. The number of insulated conductors that can be drawn into PVC pipes should be as per table III of IS:732/1963 and should be easy to pull at the time of rewiring. Conduit inspection type coupler at reasonable interval shall be provided. Scope includes supply of couplers, joint box, bends etc. at contractor's cost. The specification and details of fixing / concealing of PVC conduit is given in technical specification.

j. Modular switches and modular plates : Supply and fixing of modular switch of 5/6Amps on the existing modular plate and switch box including connections as required (the cost includes erection charges). The modular switch shall meet specification of IS:3854. The detailed specification of switches is given in Technical specification enclosed as annexure-I.

k. Modular sockets: Supply and fixing of modular 3 pin 5/6/16/32Amps, Socket outlet on the existing switch box including connections but excluding modular plate etc., as required (the cost includes erection charges). The modular socket shall meet specification of IS. The detailed specification of sockets is given in Technical specification enclosed as annexure-I.

l. GI box for fixing modular switches and sockets along with Modular base and cover plate for modular switches in recess etc., as required (The cost includes erection charges). The modular box shall be hot dip galvanized factory fabricated, suitable in size for surface/recess mounting and suitable in size for accommodating the required number of switches and accessories were required to be used for applications other than modular switches/sockets.

2. Surface/wall mounted LED batten type light fitting 20/10W watt: The scope of work involves supply and fixing of 6 Nos. LED batten type 10/20W lights. The item includes cost of LED surface/wall mounted light fitting with power LED lamp of required wattage complete with all accessories of approved make etc. The item price also includes labour & cost of all materials including cost of FR PVC insulated multistranded single core copper conductor cable, earthing connection etc. The price also covers Supply and erection of suitable clamps/brackets etc to fix light fittings under COP/FOB/Poles/roofs/walls/ sheds etc. The detailed specification of LED light is given in Technical specification enclosed as annexure-I.

3. Supply and erection of 1200mm ceiling fan: The scope of work involves supply and fixing of Energy Efficient, 1200 mm sweep with double ball bearing, 300 mm down rod, canopies, shackles, 3 Nos. of blades, suitable for operation on 230V AC 50Hz, Single phase supply, of the following specification.

- i. The fan blade thickness should be minimum 1.1. mm
- ii. The fan should conforming to IS 374/1979 (latest)
- iii. The minimum Air delivery should be 220 m³/min
- iv. The fan should confirm to IS 616/2010 for safety requirement of Electronic equipment

The price shall also cover assembling of ceiling fan complete besides fixing to the hook and undertaking connection from ceiling rose. The price covers fixing phenolic laminated sheet cover on the fan box, FRLS PVC insulated multistranded single/three core copper conductor cable wiring and connecting with earthing system, etc.. The detailed specification of fan is given in Technical specification enclosed as annexure-I.

4. Earthing with 3 meter long, 50 mm dia G.I. Pipe class 'B' earthing electrode.

The scope of work involves construction of 2 Nos. of earthing for station building. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area. The detailed specification of earthing is given in Technical specification as discussed in under specification.

5. Supply and fixing of Prewired DBs: The scope of work includes supply and fixing of pre-wired DBs. The pre wired DB shall have following features:

- i. Recess/ Surface type with integral loose wire box.
- ii. Phase/ neutral/ earth terminal blocks for termination of incoming & outgoing wires.
- iii. Din Channel for mounting MCBs.
- iv. Arrangement for mounting incomer MCB/ RCCB/ RCBO/ MCCB as required.
- v. Copper Bus bar.
- vi. Earthing terminals.
- vii. Wiring from MCBs to phase terminal block.
- viii. Interconnection between terminal block/ incoming switch/ bus bar/ neutral terminal block/ earth terminal connector with specified size of FRLS pre-insulated copper conductor cable duly fitted with copper lugs/ thimbles.
- ix. Terminal blocks should be suitable for termination of conductor/ cable of required size but minimum rated cross section of the terminal blocks should be 6 sq. mm.
- x. Terminal block shall be made of flame retardant polyamide material.
- xi. Colour terminal blocks and FRLS wires for easy identification of RYB Phases, Neutral and Earth.
- xii. Prewired DB shall be provided with a detachable cassette for safe removal of MCBs, RCCBs. Terminal connectors from the DB without loosening the internal cable connections of phase and neutral circuits. (This is an optional feature.)
- xiii. The prewired DB shall have peelable poly layer on the cover for protection from cement, plaster, paints etc. during the construction period.
- xiv. Detachable plate with Knock out holes shall be provided at the top/ bottom of board. Complete board shall be factory fabricated and pre-wired in factory ready for installation at site. The box and cover shall be fabricated from 1.6mm sheet steel, properly pre-treated, phosphatized with powder coated finish.
- xv. Where specified it shall be of double door construction provided with hinged cover in the front.
- xvi. Prewired DB shall be factory manufactured by reputed manufacturer of MCB DBs.

The detailed specification of Earthing is given in Technical specification enclosed as annexure-I.

6. Supply and fixing of MCB, RCCB, Timer and Contactors: The scope of work also includes supply and fixing of different capacity of MCBs and RCCBs as per the capacity of the MCB & RCCBs mentioned in the above list. The scope of work also includes supply and fixing of on delay Timer 24A AC/DC, 220-240AC similar for ABB product ID 1SVR550107R5100 or any other approved make and supply and fixing of three pole power contactor with auxiliary contact as required similar to ABB

Product ID 1SBL321074R8010. The item price also includes labour & cost of items required interconnection cables, screws etc. The timer and contactor is required to be provided in SDB as instructed by site Engineer. The detailed specification of MCB, RCCB, Timer and contactor is given in Technical specification as discussed in section-8 of Technical specification.

7. Supply, erection, testing and commissioning of LT feeder pillar of 125A comprising of items: i) incoming MCCB of 125A, 4 pole, 35kA (ics=100%Icu)-1 No. ii) outgoing MCCB of 63A, 4 pole, 25kA (ics=100%Icu)-4 Nos. iii) outgoing MCB 40A, 4pole, 10kA-4 Nos., iv) outgoing MCB 32A, DP, 10 kA-4 Nos. v) outgoing MCB single pole 32kA, 10 kA 4- Nos vi) Modular digital time switch and 3 phase contactor-2 set vii) sleeved / epoxy coated copper bus bar 250A in bus bar chamber viii) indication lights.

The scope and cost of work item includes cost of all materials including cost of LT feeder pillar. LT feeder pillar shall be weather proof (degree of protection not less than IP54), fabricated with 2mm thick CRCA sheet, conforming to IS:8623 (latest version), powder coated, suitable for operation on 3-phase, 4 wire 415V AC supply system, copper bus bars of 250A, LED type indication lights, earthing studs etc. Before the supply of feeder pillar approval of drawing shall be obtained from KRIDE. The detailed specification of feeder pillar has been discussed under technical specification.

8. Supply and fixing of 30W LED weather proof (IP-65) street light fitting suitable driver as per the specification enclosed. The scope of work involves provision of 1 mtr long 25 mm dia B class GI pipe bracket with fixing accessories. The item price also includes labour & cost of all materials including cost of FR PVC insulated multistranded single core copper conductor cable, earthing connection, supply and erection of suitable clamps/brackets/screws etc to fix light fittings under COP/FOB/Poles/roofs/walls/ sheds etc.

9. Supply and erection of 1.5 ton split AC unit, 4 star rating inverter type working on single phase supply with features of cooling complete with LCD display, cordless remote (for control of functions, on/off, timer, selecting fan speed (three speeds) and setting up of temperature), along with fabrication and supply and fixing of MS brackets for mounting outdoor units with wall mounted stabilizer conforming to relevant IS (latest version), suitable for operation on single phase 180 to 260 volts, 50 Hz incoming AC supply and output 200 to 230 volts A.C supply, with time delay relay, voltmeter, instant start provision with push button switch and installation and commissioning of AC plant, provision of rubber pads below the outdoor unit, heavy duty PVC flexible pipe (ISI marked) for drain, interconnecting cable and refrigerant copper pipes with thermal insulation. The scope of work also includes supply and fixing of dual channel digital time switch with battery back-up 24 Hr operation similar to ABB product ID 2CSM222521R1000 or any other approved make. The item price also includes labour & cost of items required interconnection cables, screws etc. The timer is required to be provided in relay room for switching ON/OFF of two Nos. of AC units.

10. Supply and fixing of modular type single phase starter switch suitable for AC unit operation similar to ABB product ID 1SYK100001A1556 or any other approved make. The item price also includes labour & cost of items required interconnection cables, screws etc. This starter is required to be provided for switching ON/OFF of AC units.

11. Supply and fixing of three pole power contactor with auxiliary contact as required similar to ABB

product ID 1SBL321074R8010 or any other approved make. The item price also includes labour & cost of items required for interconnection of cables, screws etc.

12. The item price includes cost for Co-ordination/Liaoning /chasing with State Electricity Board authorities for various activities involved for availing new power connections, augmentation of loads, including collection of estimates for New connections, additional load, arranging payment from KRIDE, depositing payment to SEB's authority, release of load & other connected works etc.as required.

POWER SUPPLY ARRANGEMENT TO HUSKUR RAILWAY STATION:

1. Supply, fabrication, assembling of RCC/PSCC pole of 9 mtr/9.10 mtr. Long. Scope also includes 2 way cross arm with single top support with 11 kV pin insulator, shackle insulator, disc insulator. The scope also involves earth excavation for single pole structure, base concreting with CC1:4:8 of dimensions (650x650x150mm), Pole concreting with CC 1:2:4 of dimensions (650x650x1700), coping with CC 1:2:4 (as per actuals), Installation of anticlimbing device, Caution/Danger boards etc., complete. Further, the scope also includes supply and stringing of ACSR Rabbit conductor of size 7/3/35 and stringing of the same. The cost of work involves for satisfactory completion of supply and erection of above work. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed specification of poles, insulators are given under technical specification enclosed as annexure-I.

2. Supply, fabrication, assembling, digging suitable pit and erection of Assembling, fabrication and supply of RCC DP (3.3 mtr width), 9 mtr. Long with accessories including fabrication. Scope also includes supply of 3 Nos. disc insulator of 45 kN with hardware, 2 Nos. of danger boards, 2 Nos. of anticlimbing device with suitable side rails and MS channels to mount the transformer, supply and fixing of metal oxide lightning arrestors which shall be of gapless type as per IEC60099-44 and IS3070 part (iii) of 11 kV rating for RYB phases with earth connection by suitable GI flat of sizes 25*3 mm, supply and fixing of 200A of GOS with suitable drop out fuses, clamps, connection with ACSR conductors, supply and fixing of alkathin tube for RYB phase, supply and fixing of guy set with strain insulators with suitable concreting materials. The scope also involves earth excavation for DP pole structure, base concreting with CC1:4:8 of dimensions (650x650x150mm), Pole concreting with CC 1:2:4 of dimensions (650x650x1700), coping with CC 1:2:4 (as per actuals), guy concerting with boulders, mud and sand, Installation of anticlimbing device, Caution/Danger boards etc., complete. The cost of work involves for satisfactory completion of supply and erection of above work. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed specification of poles, lightning arrestor, insulators, GOS is given under technical specification enclosed as annexure-I.

3. Manufacture, supply and fixing of galvanised wire net fencing chain made of 10 SWG MS frame of 40*40*5mm angle including erection. Fabrication of galvenised wire net fencing shall be made in rectangular formation as required with MS angle iron of 40*40*5mm spaced at about 2 meters and 10 SWG GI wire mesh shall be cut according to size and welded with angle frame. MS strip not less than 15*3mm size shall be provided and welded above GI wire along the angle frame to hold GI wire mesh. Height of enclosure shall be 2 meter above ground level. The portion of MS angle to be grouted in foundation shall be 500 mm. The fencing panels shall be erected on foundation constructed of size 200mm*200mm*500mm deep with cement concrete of M-10.

The iron gate shall be fabricated with 50mm*50mm*8mm MS angle iron frame with iron grill etc. as approved. The size of the gate shall be 2 mtr (height) * 3.5 mtr (height) *3.5 mtr. Width and fabricated in two parts of 1.75 mtr each. Gate shall be provided with sliding lockable bolt with pad lock. Gate shall be fixed on channels of size not less than 100*50mm, weighing 7.9 kg per meter with bolts and nuts and welded. Channels shall be erected on foundation constructed of size 300mm*300mm*500mm deep with cement concrete of M-10 grade.

Complete enclosure including gate and angles (except galvenised portion) shall be painted with approved shade of enamel paint over two coats of red oxide primer. Prior to construction approval of drawing shall be obtained from KRIDE.

4. Supply, laying, testing and commissioning of LT UG cable of size 4C*35 sq.mm. The detailed specification of of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work.

5. Supply, installation, testing and commissioning of 11 kV/440V, outdoor type, Delta/star connected, copper wound, DYn11, ONAN cooled, power distribution transformer conforming to IS:1180/2014 or latest (energy efficiency shall not be less than-II) complete with all accessories and first oil filling oil as required. The detailed specification of transformer is given under technical specification. The scope also includes supply and fixing LT distribution kit suitable for above transformer. The specification of LT distribution kit has been discussed under specification chapter. The item cost includes supply and fixing

required for satisfactory commissioning of LT distribution transformer kit.

6. Earthing arrangement as discussed in specification chapter enclosed as annexure-I. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. The scope also includes fixing of GI earth strip from earth chamber to other equipments of transformer centre.

Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area.

Explanatory notes for Electrification of S&T Goomty buildings.

1. The item price includes cost of designing, labour & all materials required to electrify the gate men lodge in all respect complete with supply and fixing of ceiling fans, luminaries with lamps and other items indicated in the scale of fittings for gate man lodge. It also includes the cost of wiring cables (sizes indicated for point wiring, circuit wiring and sub main wiring), suitable PVC conduits (from meter board to switch board and suitable size conduits required for complete wiring in each gate man lodge) with accessories, junction boxes, 1-way modular switches, sockets, metal boxes, lamp holders, ceiling roses, modular plates, pre-wired sub distribution boards and meter boards with meters, MCBs, earth electrodes etc.

ii. Sizes of single core (copper conductor) cable for point wiring, circuit wiring and sub main wiring, circuits, distribution board/s, etc. for station building is explained as follows:

a. Light point/Circuit point: Wire of size 1.5 sq. mm, 1100 V grade PVC insulated, multistranded copper wire with relevant IS spec (IS 694 latest) in PVC concealed conduit and approved color with necessary junction boxes ceiling rose, angle holder etc. as required.

b. Plug point (6Amps): Wiring shall be with FR PVC insulated, multistranded copper of size 1.5 sq.mm with IS spec (IS 694 latest) with 5 A modular switch and modular sockets mounted on GI box concealed on wall.

c. Plug point (16Amps): Wiring shall be with FR PVC insulated, multistranded copper of size 1.5 sq.mm with IS spec (IS 694 latest) with 5 A modular switch and modular sockets mounted on GI box concealed on wall.

d. Ceiling fan point: The ceiling fan point wiring shall be done with PVC insulated, PVC sheathed multi stranded copper wire of size 1.5 sq. mm, 1100V grade, FELS with IS Spec (IS 694) with fan junction box, ceiling rose mounted on wall. The modular switch of 6A capacity shall be provided on switch board. The earthing connection shall be with 14 SWG copper wire.

e. Sub main 2.5 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as sub main. The submain shall be by means of two numbers of FRLS, PVC insulated, 2.5 sq.mm and 1 Number of 1.5 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest).

f. Sub main 4 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as sub main. The submain shall be by means of two numbers of 4 sq.mm FRLS, PVC insulated, multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest) and 2.5 sq.mm FRLS, PVC insulated, multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest).

g. Power circuit 6 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as per running meter. The power circuit shall be by means of four (RYB-N) numbers of FRLS, PVC insulated, 6 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest) and one number 2.5 sq.mm multi stranded copper wire.

h. Power circuit 10 sq. mm: Wiring which is not covered under point wiring such as connection from main board to other distribution board or from one room to other room board will be measured and recorded as per running meter. The power circuit shall be by means of four numbers of (RYB-N) FRLS, PVC insulated, 10 sq.mm multistranded copper wire, 1100V grade relevant IS spec (IS 694 latest) and one number of 2.5 sq.mm multistranded copper wire.

i. PVC Conduit and its installation: The scope of work also involves supply and drawing of inside roof slab or wall for concealed wiring. All PVC pipes for wiring shall be conforming to IS 9537/P3/1983. No PVC pipe less than 20mm +/- 0.2mm in diameter with wall thickness of 2mm shall be used. The number of insulated conductors that can be drawn into PVC pipes should be as per table III of IS:732/1963 and should be easy to pull at the time of rewiring. Conduit inspection type coupler at reasonable interval shall be provided. Scope includes supply of couplers, joint box, bends etc. at contractor's cost. The specification and details of fixing / concealing of PVC conduit is given in technical specification.

j. Modular switches and modular plates : Supply and fixing of modular switch of 5/6Amps on the existing modular plate and switch box including connections as required (the cost includes erection charges). The modular switch shall meet specification of IS:3854. The detailed specification of switches is given in Technical specification enclosed as annexure-I.

k. Modular sockets: Supply and fixing of modular 3 pin 5/6/16/32Amps, Socket outlet on the existing switch box including connections but excluding modular plate etc., as required (the cost includes erection charges). The modular socket shall meet specification of IS. The detailed specification of sockets is given in Technical specification enclosed as annexure-I.

l. GI box for fixing modular switches and sockets along with Modular base and cover plate for modular switches in recess etc., as required (The cost includes erection charges). The modular box shall be hot dip galvanized factory fabricated, suitable in size for surface/recess mounting and suitable in size for accommodating the required number of switches and accessories were required to be used for applications other than modular switches/sockets.

2. Surface/wall mounted LED batten type light fitting 20/10W watt: The scope of work involves supply and fixing of 6 Nos. LED batten type 10/20W lights. The item includes cost of LED surface/wall mounted light fitting with power LED lamp of required wattage complete with all accessories of approved make etc. The item price also includes labour & cost of all materials including cost of FR PVC insulated multistranded single core copper conductor cable, earthing connection etc. The price also covers Supply and erection of suitable clamps/brackets etc to fix light fittings under COP/FOB/Poles/roofs/walls/ sheds etc. The detailed specification of LED light is given in Technical specification enclosed as annexure-I.

3. Supply and erection of 1200mm ceiling fan: The scope of work involves supply and fixing of Energy Efficient, 1200 mm sweep with double ball bearing, 300 mm down rod, canopies, shackles, 3 Nos. of blades, suitable for operation on 230V AC 50Hz, Single phase supply, of the following specification.

- i. The fan blade thickness should be minimum 1.1. mm
- ii. The fan should conforming to IS 374/1979 (latest)
- iii. The minimum Air delivery should be 220 m³/min
- iv. The fan should confirm to IS 616/2010 for safety requirement of Electronic equipment

The price shall also cover assembling of ceiling fan complete besides fixing to the hook and undertaking connection from ceiling rose. The price covers fixing phenolic laminated sheet cover on the fan box, FRLS PVC insulated multistranded single/three core copper conductor cable wiring and connecting with earthing system, etc.. The detailed specification of fan is given in Technical specification as discussed in section-8 of Technical specification.

4. Earthing with 3 meter long, 50 mm dia G.I. Pipe class 'B' earthing electrode.

The scope of work involves construction of 2 Nos. of earthing for station building. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area. The detailed specification of earthing is given in Technical specification enclosed as annexure-I.

5. Supply and fixing of Prewired DBs: The scope of work includes supply and fixing of pre-wired DBs. The pre wired DB shall have following features:

- i. Recess/ Surface type with integral loose wire box.
- ii. Phase/ neutral/ earth terminal blocks for termination of incoming & outgoing wires.
- iii. Din Channel for mounting MCBs.
- iv. Arrangement for mounting incomer MCB/ RCCB/ RCBO/ MCCB as required.
- v. Copper Bus bar.
- vi. Earthing terminals.
- vii. Wiring from MCBs to phase terminal block.
- viii. Interconnection between terminal block/ incoming switch/ bus bar/ neutral terminal block/ earth terminal connector with specified size of FRLS pre-insulated copper conductor cable duly fitted with copper lugs/ thimbles.
- ix. Terminal blocks should be suitable for termination of conductor/ cable of required size but minimum rated cross section of the terminal blocks should be 6 sq. mm.
- x. Terminal block shall be made of flame retardant polyamide material.
- xi. Colour terminal blocks and FRLS wires for easy identification of RYB Phases, Neutral and Earth.
- xii. Prewired DB shall be provided with a detachable cassette for safe removal of MCBs, RCCBs. Terminal connectors from the DB without loosening the internal cable connections of phase and neutral circuits. (This is an optional feature.)
- xiii. The prewired DB shall have peelable poly layer on the cover for protection from cement, plaster, paints etc. during the construction period.
- xiv. Detachable plate with Knock out holes shall be provided at the top/ bottom of board. Complete board shall be factory fabricated and pre-wired in factory ready for installation at site. The box and cover shall be fabricated from 1.6mm sheet steel, properly pre-treated, phosphatized with powder coated finish.
- xv. Where specified it shall be of double door construction provided with hinged cover in the front.
- xvi. Prewired DB shall be factory manufactured by reputed manufacturer of MCB DBs.

The detailed specification of Earthing is given in Technical specification enclosed as annexure-I.

6. Supply and fixing of MCB, RCCB: The scope of work also includes supply and fixing of different capacity of MCBs and RCCBs as per the capacity of the MCB & RCCBs mentioned in the above list. The item price also includes labour & cost of items required interconnection cables, screws etc. The detailed specification of MCB, RCCB, Timer and contactor is given in Technical specification enclosed as annexure-I.

7. Supply and fixing of 30W LED weather proof (IP-65) street light fitting suitable driver as per the specification enclosed. The scope of work involves provision of 1 mtr long 25 mm dia B class GI pipe bracket with fixing accessories. The item price also includes labour & cost of all materials including cost of FR PVC insulated multistranded single core copper conductor cable, earthing connection, supply and erection of suitable clamps/brackets/screws etc to fix light fittings under COP/FOB/Poles/roofs/walls/ sheds etc.

8. Fabrication, assembling, supply, erection, testing and commissioning of hot dip galvanized octagonal pole of 5.5 mtr. long made up of 3 mm thick sheet, top 70mm A/F and bottom 130mm M/F with single arm bracket 350mm long to fix street light luminaire with foundation bolt, base plate 250*250*12mm and built in junction box with strip connector, cut out and all accessories with street light pole/platform pole. The item price involves making cement concrete foundation 1:3:6 and erection of octagonal pole, supply and fixing of 75 mm dia PVC pipe in cement concrete for cable raising and curing of foundation. The detailed specification of GI octagonal pole has been discussed under specification chapter enclosed as annexure-I.

9. Supply of 30W LED WP (IP-65) street light fitting with driver circuit complete set as per CEE/SWR specification. Fixing, testing and commissioning of LED street light fitting along with supply and provision of 1mtr long 25mm dia B class GI pipe bracket with fixing accessories. The scope of work also involves supply and connecting 3 core 1.5 sq.mm multistranded PVC cable. The detailed specification of LED light fitting has been discussed under specification chapter enclosed as annexure-I.

10. Supply, laying, testing and commissioning of LT UG cable of size 4C*16 sq.mm. The detailed specification of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation,

dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work. The scope also includes supply, laying and connection of GI wire with suitable connector to electrical equipment to earthing. The scope of work also involves supply and fixing of crimped terminal lugs to suit 4C*16 sq.mm LT UG cable and supply and fixing of cable gland to suit 4C*16 sq.mm LT UG cable. Fixing/running of 8 SWG GI earth wire.

11. Earthing arrangement as discussed in specification chapter enclosed as annexure-I. The item price includes labour & cost of all materials including cost of GI pipe, concrete enclosure, MS cover plate with lifting handle, charcoal/coke and salt, etc. The scope also includes fixing of GI earth strip from earth chamber to other equipments of transformer centre.

Earthing shall be in conformity to IS 3043/1987 (Latest Version) and as per approved drawing. Excavation shall be done complying with Code of Safety as per IS 3764/1992(Latest Version). Earth resistance shall not be greater than 5 ohm in normal soil and 8 ohm in rocky area.

12. The item price includes cost for Co-ordination/Liaoning /chasing with State Electricity Board authorities for various activities involved for availing new power connections, augmentation of loads, including collection of estimates for New connections, additional load, arranging payment from KRIDE, depositing payment to SEB's authority, release of load & other connected works etc.as required.

POWER SUPPLY ARRANGEMENT FOR 5 Nos. OF GOOMTIES & 3 Nos. OF PORTABLE CABINS.

1. Supply, fabrication, assembling of RCC/PSCC pole of 9 mtr/9.10 mtr. Long. Scope also includes 2 way cross arm with single top support with 11 kV pin insulator, shackle insulator, disc insulator. The scope also involves earth excavation for single pole structure, base concreting with CC1:4:8 of dimensions (650x650x150mm), Pole concreting with CC 1:2:4 of dimensions (650x650x1700), coping with CC 1:2:4 (as per actuals), Installation of anticlimbing device, Caution/Danger boards etc., complete. Further, the scope also includes supply and stringing of ACSR Rabbit conductor of size 7/3/35 and stringing of the same. The scope of work involves, supply and fixing of outdoor type LT termination kit / pot head upto 4C*35 sqmm LT UG cable on pole. The cost of work involves for satisfactory completion of supply and erection of above work. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges. The detailed specification of poles, insulators are given under technical specification enclosed as annexure-I.

2. Supply, laying, testing and commissioning of LT UG cable of size 4C*16 sq.mm. The detailed specification of of LT cable as discussed under specification chapter. The scope of work also includes manual digging of cable trench of size 0.3 m width * 1 mtr depth and laying of the cable in open trench, on wall/ pole etc. as per site requirement and refilling the cable trench with 150mm bedding of river sand above and below the cable including including protection by laying country bricks across the trench. Excavated soil free from unwanted materials, ramming, consolidating and bringing to to its original finish.

In case trench is excavated on either sides of track, the LT UG cable has to be laid in all kinds of soil in a trench of 1.0 mtr. Depth with river sand cushioning for laying of cable throughout length of trench. Stock bricks should be laid breadthwise without any gap on the top of the cable in trench to ensure protection. The excavated soil to be filled back. All other items are to be borne by the contractor. After laying of the cable in the trench, the filled up soil has to be rammed and trench has to be brought back to shape in conjunction with the surroundings.

In case cable is to be laid underneath the track/road, the cables shall be drawn through HDPE/RCC hume/GI pipes. Trench to accommodate pipe shall be of suitable width and excavated at 1.0 mtr. below the formation level. No sand cushioning and spreading of bricks are required. But once the pipes are laid in the trench, it should be made to its original formation level by filling it up with excavated earth by watering and ramming process and resetting the ballast of track to its original level. Similarly, when road has been dug for laying of the cable the same should be re-filled, rammed and asphalted and brought to original condition. The cable rising above ground shall be taken through GI pipe neatly clamped and open end of GI pipe has to be sealed with bitumen compound. The cable has to be laid along the route as per instruction of Engineer. The laying of cables includes uncoiling of cable from cable drum, laying of the cable in the trench free from twists, bends, peeling of insulation, dressing at terminal ends, provision of cable glands, crimping with suitable shoe, connection at both ends & earthing of armour at both ends.

The cost of work includes depositing earth on bank up to a lead of 50 mtr., supplying and fixing of necessary danger boards/cable route indicators at every 100 mtrs. Etc. The cost of work includes the associated works involved in satisfactory completion of LT UG cable laying work. The scope also includes supply, laying and connection of GI wire with suitable connector to electrical equipment to earthing. The scope of work also involves supply and fixing of crimped terminal lugs to suit 4C*16

sq.mm LT UG cable and supply and fixing of cable gland to suit 4C*16 sq.mm LT UG cable. Fixing/running of 8 SWG GI earth wire.

3. Fabrication, assembly and supply of double door box of 16 SWG CRCA sheet powder coated box of size 400*600*250mm with supply of 3 Phase, 4 wire energy meter 0-40A-1 No., fuse cut out 63A- 3 Nos., Neutral link, wiring and supply and fixing of 32A, four pole MCB of 2 Nos. mounted on 6mm thick hylum sheet including aluminium bus bar 25*5mm -500mm long 4 Nos. with locking arrangements and all accessories (Contractor should collect Energy meter from ESCOM). The scope also includes termination of LT cable in meter box. The scope of work includes cost of all material, loading and unloading charges, labour charges and other incidental charges for the satisfactory completion of work.

SECTION – 9
BILL OF QUANTITIES

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SL NO	SCHEDULE	DESCRIPTION OF SCHEDULE	AMOUNT
1	Sch "A"	Item of works covered under USSOR (SWR) - 2021	493,299.39
2	Sch "A1"	Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement	108,596,460.79
3	Sch "A2"	Item of works covered under CPWD,Delhi Schedule of Rates - 2018: Structral Steel	22,280,000.00
4	Sch "A3"	Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : Horticulture	585,010.50
5	Sch "B"	Item of works covered under USSOR (SWR) - 2021 : Foramation, Earthwork in Cutting / Filling with Railways earth	1,451,402.80
6	Sch "C"	Item of works covered under USSOR (SWR) - 2021 : Supply of Cement	2,739,429.00
7	Sch "E"	Item of works covered CPWD, Delhi Schedule of Rates - 2018 :Supply of TMT Steel	37,366,250.00
8	Sch "F"	Item of works covered under USSOR (SWR) 2021 - Contractor's own Earth (CoE)	1,757,600.00
9	Sch "G"	Item of works covered under USSOR (SWR) - 2021:Structral Steel & allied works for FOB	6,796,238.45
10	Sch "J"	Miscellaneous Item of works	19,523,761.80
11	Sch "E1"	Electrical works.	6,739,201.91
12	Sch "E2"	Electrical works.	2,069,968.37
GRAND TOTAL			210,398,623

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE- "A" : Item Of works covered under USSOR (S.W.Railway) - 2021						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	021011	Exploratory drilling of Boreholes down to required depth, drilling of 150mm diameter boreholes in all type of soils except hard rock and large boulders (boulder core more than 30 cm), including refilling and reinstating surface, and disposing off surplus : 0m to 10m	Meter	832.42	80.00	66593.60
2	021030	Extra for 150mm dia bore in hard Rock/ large Boulder at all levels	Meter	4415.00	55.00	242825.00
3	021110	Taking out 100mm dia & 450mm long undisturbed samples of soil from bore holes, including provision of air tight containers for packing and, labelling incl. transporting the samples to laboratory. Piston sampler shall be used for extracting undisturbed samples. Where necessary, Samples shall be collected as per IS:2720	Each	163.90	62.00	10161.80
4	021130	Conducting standard penetration test as per IS 2131 at approximate 1.5 m intervals in bore holes, as directed by the Engineer in charge	Each	971.34	9.00	8742.06
5	021151	Moisture contents/ Dry density	Each	341.17	9.00	3070.53
6	021152	Conducting labouratary tests on collected soil samples Atterberg limit	Each	622.14	9.00	5599.26
7	021153	Conducting labouratary tests on collected soil samples: specific gravity	Each	627.64	9.00	5648.76
8	021154	Conducting labouratary tests on collected soil samples: Grain size analysis	Each	876.35	9.00	7887.15
9	021155	Conducting labouratary tests on collected soil samples: Direct shear test	Each	2341.39	9.00	21072.51
10	021156	Conducting labouratary tests on collected soil samples: Natural density	Each	686.80	9.00	6181.20
11	021157	Conducting labouratary tests on collected soil samples: consolidation test	Each	7960.73	9.00	71646.57
12	021158	Conducting labouratary tests on collected soil samples): Unconfined compression test	Each	2466.26	9.00	22196.34
13	021159	Conducting labouratary tests on collected soil samples): Tri axial test	Each	2408.29	9.00	21674.61
No. of Items Thirteen only		SCHEDULE "A" Departmental Value				493299

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge : All kinds of soil	cum	181.85	7080.00	1287498
2	2.9.1	Excavation work by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50 m : Ordinary rock	cum	448.15	350.00	156852.5
3	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	cum	219.65	1595.00	350341.75
4	2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials : All kinds of soil	cum	90.40	3056.00	276262.4
5	2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	cum	1953.05	200.00	390610
6	2.36	Extra for levelling & neatly dressing of disposed soil completely as directed by Engineer-in-charge.	cum	66.35	7146.00	474137.1
7	4.1.3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	cum	6788.60	105.00	712803
8	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :1:3:6 (1 Cement : 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size)	cum	6126.25	1975.00	12099343.75
9	4.2	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing: 1:1½:3 (1 cement : 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	8976.45	100.68	903748.986
10	4.3.2	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, buttresses, plinth and string courses fillets, kerbs and steps etc.	sqm	609.30	255.00	155371.5
11	4.6.1	Providing and fixing at or near ground level precast cement concrete in kerbs, edgings etc. as per approved pattern and setting in position with cement mortar 1:3 (1 Cement : 3 coarse sand), including the cost of required centering, shuttering complete : 1:1½:3 (1 Cement: 1½ coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	7533.85	170.00	1280754.5

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
12	5.33.1	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge : (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/recoverable separately). : All works upto plinth level	cum	7997.30	2070.00	16554411
13	5.33.2	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge : (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/recoverable separately). : All works above plinth level upto floor V level	cum	9400.85	545.00	5123463.25
14	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete	sqm	284.85	1230.00	350365.5
15	5.9.2	Walls (any thickness) including attached pilasters, butresses, plinth and string courses etc.	sqm	609.30	4800.00	2924640
16	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for :Suspended floors, roofs, landings, balconies and access platform	sqm	693.05	2150.00	1490057.5
17	5.9.6	Centering and shuttering including strutting, propping etc. and removal of form for : Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	733.70	1350.00	990495
18	5.9.20	Centering and shuttering including strutting, propping etc. and removal of form for : Suspended floors, roofs, landings, balconies and access platform with water proof ply 12 mm thick	sqm	779.30	200.00	155860
19	5.9.21	Centering and shuttering including strutting, propping etc. and removal of form for :Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick	sqm	641.60	500.00	320800
20	5.11.1	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured). Suspended floors, roofs, landing, beams and balconies (Plan area to be measured)	sqm	287.50	1500.00	431250
21	5.23	Smooth finishing of the exposed surface of R.C.C. work with 6 mm thick cement mortar 1:3 (1 Cement : 3 fine sand).	sqm	227.35	810.00	184153.5
22	5.24	Extra for rendering smooth the top of suspended floors, landings and staircases (treads and risers) with cement mortar 1:2 (1 cement : 2 coarse sand), including a floating coat of neat cement and protecting the surface with a layer of 7.5 cm of earth laid over 15 mm of fine sand in case of suspended floor and bricks laid in mud mortar in case of landings and steps, including subsequent removal and cleaning of the same.	sqm	125.10	1000.00	125100
23	5.34.2	Extra for providing richer mixes at all floor levels - Note:- Excess/less cement over the specified cement content used is payable /recoverable separately Providing M-35 grade concrete instead of M-25 grade BMC/ RMC. (Note : Cement content considered in M-35 is @ 350 kg/ cum)	cum	139.45	2110.00	294239.5

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
24	6.47	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	cum	6636.95	510.00	3384844.5
25	7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with :Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	6120.80	350.00	2142280
26	8.2.2.2	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels - Granite of any colour and shade : Area of slab over 0.50 sqm	sqm	4007.65	440.00	1763366
27	8.6	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	sqm	368.00	16.00	5888
28	8.32	Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building , for all heights and all levels etc. including: (a) Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design. (b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF / Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc. (c) The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanised with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing The item includes cost of all material & labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation. Base frame work for ACP cladding is payable under the relevant aluminium item.s The Contractor shall provide curtain wall with aluminium composite panel cladding, having all the performance characteristics all complete , as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge. However, for the purpose of payment, only the actual area on the external face of the curtain wall with Aluminum Composite Panel Cladding (including width of groove) shall be measured in sqm. up to two decimal places.	sqm	4309.80	450.00	1939410

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
29	9.48.1	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. Fixed to steel windows by welding	kg	165.30	1700.00	281010
30	9.147D.2	Providing and fixing factory made uPVC white colour sliding glazed window upto 1.50 m in height dimension comprising of uPVC multi-chambered frame with in-built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), appropriate dimension of uPVC extruded glazing beads and uPVC extruded interlocks, EPDM gasket, wool pile, zinc alloy (white powder coated) touch locks with hook, zinc alloy body with single nylon rollers (weight bearing capacity to be 40 kg), G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes, wire mesh and silicon sealant shall be paid separately) Note: For uPVC frame and sash extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable. Variation in profile dimension in higher side shall be accepted but no extra payment on this account shall be made : Three track three panels sliding window with fly proof SS wire mesh (Two nos. glazed & one no. wire mesh panels) made of (small series) frame 92 x 44 mm & sash 32 x 60 mm both having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension (Area of window upto 1.75 sqm).	sqm	8954.20	200.00	1790840
31	9.121	Providing and fixing Fiber Glass Reinforced plastic (FRP) Door Frames of cross-section 90 mm x 45 mm having single rebate of 32 mm x 15 mm to receive shutter of 30 mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat. Door frame laminate shall be 2mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiber glass from all sides. M.S. stay shall be provided at the bottom to steady the frame.	meter	679.85	80.00	54388
32	9.122.1	Providing and fixing to existing door frames : 30 mm thick Glass Fibre Reinforced Plastic (FRP) panelled door shutter of required colour and approved brand and manufacture, made with fire - retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate for forming hollow rails and styles, with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings, cast monolithically with 5 mm thick FRP laminate for panels conforming to IS: 14856, including fixing to frames.	sqm	3465.05	30.00	103951.5
33	10.3	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2 mm and braced with flat iron diagonals 20x5 mm size, with top and bottom rail of T-iron 40x40x6 mm, with 40 mm dia steel pulleys, complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.	sqm	8670.50	18.00	156069
34	10.20	Providing and fixing bolts including nuts and washers complete.	kg	128.45	3062.00	393313.9

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
35	10.28	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in- charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)	kg	575.45	1000.00	575450
36	11.20.3	Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand). Dark shade pigment using ordinary cement	sqm	928.00	1350.00	1252800
37	11.21.1.1	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge. In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand) Acid and alkali resistant tile	sqm	1495.00	70.00	104650
38	11.21.2.1	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge. In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand) Acid and alkali resistant tile	sqm	1607.70	60.00	96462
39	11.37	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	sqm	926.90	150.00	139035
40	11.41.2	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm	sqm	1500.55	500.00	750275
41	12.1.3	Providing corrugated G.S. sheet roofing including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. 0.63 mm thick with zinc coating not less than 275 gm/ m ²	sqm	915.00	2782.00	2545530
42	12.5.1	Providing valleys of 90 cm wide overall in plain G.S. sheet fixed with polymer coated J, or L hooks, bolts and nuts 8 mm dia G.I. limpet and bitumen washers complete 1.60 mm thick with zinc coating not less than 350 gm/m ²	metre	1324.70	384.00	508684.8
43	12.38.1	Providing and fixing M.S. holder bat clamps of approved design to C.I. or S.C.I. rain water pipes embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and cost of cutting holes and making good the walls etc. : 100 mm diameter	each	287.45	69.00	19834.05
44	12.41.1	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.. : 75 mm diameter	Meter	201.10	165.00	33181.5

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
45	12.41.2	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes - 110 mm diameter	metre	305.05	250.00	76262.5
46	13.1.2	12 mm cement plaster of mix :1:6 (1 cement: 6 fine sand)	sqm	254.25	2800.00	711900
47	13.2.2	15 mm cement plaster on the rough side of single or half brick wall of mix :1:6 (1 cement: 6 fine sand)	sqm	292.85	3600.00	1054260
48	13.17	6 mm cement plaster 1:3 (1 cement : 3 fine sand) finished with a floating coat of neat cement and thick coat of Lime wash on top of walls when dry for bearing of R.C.C. slabs and beams.	sqm	301.65	3210.00	968296.5
49	13.28.3	12 mm thick plain cement mortar bands in cement mortar 1:4 (1 cement : 4 fine sand): Raised Band	cm per metre	7.10	1020.00	7242
50	13.44.1	Finishing walls with water proofing cement paint of required shade : New work (Two or more coats applied @ 3.84 kg/10 sqm)	sqm	91.25	5000.00	456250
51	13.48.1	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications : Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr /10 sqm	sqm	142.20	2000.00	284400
52	13.48.3	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications : Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand and manufacture	sqm	125.80	2800.00	352240
53	13.50.3	Applying priming coat: With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works	sqm	50.70	130.00	6591
54	13.62.1	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade : Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	sqm	177.15	1600.00	283440
55	15.2.1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	cum	1737.45	756.00	1313512.2
56	15.3	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	cum	2534.70	60.00	152082
57	15.7.4	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In cement mortar	cum	1469.90	100.00	146990
58	16.31.1.1	Providing and applying tack coat using bitumen emulsion conforming to IS:8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom. - With rapid setting bitumen emulsion : On W.B.M / W.M.M. @ 0.4kg/sqm	sqm	11.85	6525.00	77321.25
59	16.31.1.2	With rapid setting bitumen emulsion : On bituminous surface @ 0.25kg/sqm	sqm	8.05	6525.00	52526.25
60	16.46.1	Providing and laying in position bitumen hot sealing compound for expansion joints : Using grade 'A' sealing compound	per cm depth per cm width per metre length	3.30	4880.00	16104

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
61	16.55.1	Providing and laying bituminous macadam using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge : 50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120	cum	7743.55	500.00	3871775
62	16.57.1	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge : 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	10944.65	360.00	3940074
63	16.62	Providing and applying 2.5 mm thick road marking strips (retro- reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	607.30	225.00	136642.5
64	16.69	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	cum	8376.15	200.00	1675230
65	16.75	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in- charge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).	CUM	8663.05	1330.00	11521856.5
66	16.78.1	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge : With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	CUM	2517.70	1800.00	4531860
67	16.79	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paverfinisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	cum	2641.40	1550.00	4094170

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
68	16.91.2	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge : 80 mm thick C.C. paver block of M-30 grade with approved color design and pattern	sqm	953.00	3000.00	2859000
69	17.1.1	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required: White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	each	5421.50	7.00	37950.5
70	17.2.1	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required : W.C. pan with ISI marked white solid plastic seat and lid	each	5260.95	11.00	57870.45
71	17.4.2	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required : Range of two urinal basins with 5 litre white P.V.C. automatic flushing cistern	each	7677.75	4.00	30711
72	17.6.3	Providing and fixing one piece construction white vitreous china squatting plate with an integral longitudinal flushing pipe, white P.V.C. automatic flushing cistern, with fittings, standard size G.I. / PVC flush pipe for back and front flush with standard spreader pipes with fittings, G.I clamps and C.P. brass coupling complete, including painting of fittings and cutting and making good the walls and floors etc. wherever required : Range of three squatting plates with 10 litre P.V.C. automatic flushing cistern	each	13931.70	11.00	153248.7
73	17.7.1	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require: White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	each	3087.70	18.00	55578.6
74	17.32.3	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing : Oval shape 450x350 mm (outer dimensions)	each	1185.60	10.00	11856
75	18.6.1	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes confirming to IS:15801 UV stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply, including all PP - R plain & brass threaded polypropylene random fittings, including trenching, refilling & testing of joints complete as per direction of Engineer-in-Charge. External work : PN - 16 Pipe, 20mm OD (SDR-7.4)	metre	187.85	100.00	18785

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
76	18.6.3	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes confirming to IS:15801 UV stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply, including all PP - R plain & brass threaded polypropylene random fittings, including trenching, refilling & testing of joints complete as per direction of Engineer-in-Charge - External work : PN - 16 Pipe, 32 mm OD (SDR-7.4)	metre	301.60	1060.00	319696
77	18.6.6	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes confirming to IS:15801 UV stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply, including all PP - R plain & brass threaded polypropylene random fittings, including trenching, refilling & testing of joints complete as per direction of Engineer-in-Charge. External work : PN - 10 Pipe, 63 mm OD (SDR-11)	metre	624.85	1500.00	937275
78	18.48A	Providing and fixing rectangular high density polyethylene water storage loft tank with cover, conforming to ISI : 12701, colour of opaque white or as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet & over flow pipes. The base support i/c fittings & fixtures for tank shall be paid separately.	per litre	8.80	6000.00	52800
79	18.56.1	Providing and fixing PTMT pillar cock of approved quality and colour. 15 mm nominal bore, 107 mm long, weighing not less than 110 gms	each	192.65	18.00	3467.7
80	18.58.1.1	Providing and fixing PTMT grating of approved quality and colour- Circular type : 100 mm nominal dia	each	37.90	20.00	758
81	19.9.1.1	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design : 0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	11038.10	2.00	22076.2
82	21.12.2	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge. Powder coated minimum thickness 50 micron aluminium tubular handle bar	each	562.60	50.00	28130
83	23.1.1.1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level : All types of soil - 300mm dia	Meter	512.30	630.00	322749
84	23.2.1.1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, beyond 90 metre & upto 150 metre depth below ground level : All types of soil : 300 mm dia	Meter	597.65	770.00	460190.5

SCHEDULE "A1" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : The rate is inclusive of Supply of Cement.						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
85	23.3.3	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge : 200 mm nominal size dia	Meter	1066.05	160.00	170568
86	23.13.3	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of : 200 mm dia	Each	280.95	7.00	1966.65
87	23.14.3	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete : 200 mm clamp	Each	1691.15	2.00	3382.3
88	23.5	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	cum	1326.55	50.00	66327.5
89	23.6	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	cum	1326.55	50.00	66327.5
90	23.7	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer - incharge.	cum	1326.55	50.00	66327.5
91	23.8	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	cum	1497.7	50.00	74885
92	23.9	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge.	each	1210.85	10.00	12108.5
93	25.6	Providing and supplying Spandrel Glass Panels comprising of 6 mm thick heat strengthened monolithic float glass of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade so as to match the colour and shade of the IGUs in the vision panels etc. ,all complete for the required performances as specified, as per the Architectural drawings, as per the approved shop drawings, as specified, and as directed by the Engineer- in- Charge. For payment, only the actual area of glass on face # 1 of the glass panels (but excluding the area of grooves and weather silicone sealant) provided and fixed in position, shall be measured in sqm. (Payment for fixing of Spandrel Glass Panels in the curtain glazing is included in cost of relevant Item*)."(i) Coloured tinted float glass 6mm thick substrate with reflective soft coating on face # 2, having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 3.0 to 3.3 W/m2 K etc. . The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	sqm	2127.95	450.00	957577.5
94		Any other items which is not covered in CPWD-2018.	LS	1000000.00	1.00	1000000
No. of Items Ninety - Four only		SCHEDULE "A1" Departmental Value				108596461

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE "A2" : Item of works covered under CPWD,Delhi Schedule of Rates - 2018: Structural Steel.						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	10.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	101.75	10000.00	1017500
2	10.16.2	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete : Hot finished seamless type tubes. Note : i) 50 % of the payment against supply of steel to the site of work on subbmission of invoice /cash billl and Indemnity bond . ii) 20% of the payment after fabrication of steel with two coat of primer , iii) 20% of the payment after satisfactiry completeion of erection. iv) 10% of the payment after final painting and satisfactory completion of all works pertaining to this item Rate includes workes under Power block (OHE) / Traffic block.	kg	157.50	135000.00	21262500
No. of Items Two only		SCHEDULE "A2" Departmental Value				22280000

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE "A3" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : Horticulture						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	2.1 HL	Trenching in ordinary soil up to a depth of 60 cm including removal and stacking of serviceable materials and then disposing of surplus soil, by spreading and neatly levelling within a lead of 50 m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or / and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure)	CUM	68.7	50.00	3435
2	2.2 HL	2.2 Supplying and stacking of good earth at site including royalty and carriage upto 5 km lead complete (earth measured in stacks will be reduced by 20% for payment)	CUM	469.5	20.00	9390
3	2.4.1 HL	Supplying and stacking at site dump manure from approved source, including carriage upto 5 km lead complete (manure measured in stacks will be reduced by 8% for payment) : 2.4.1 Screened through sieve of I.S. designation 20 mm	CUM	229.95	20.00	4599
4	2.8HL	Spreading of sludge, dump manure and/or good earth in required thickness as per direction of officer-in-charge (cost of sludge, dump manure and/ or good earth to be paid separately).	CUM	46.15	300.00	13845
5	2.12 HL	Uprooting rank vegetation and weeds by digging the area to a depth of 60 cm, 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.	SQM	53.6	50.00	2680
6	2.13HL	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately)	CUM	195.9	50.00	9795
7	2.16HL	Providing and fixing M.S. flat iron tree guard 60 cm dia and 2 m high, above ground consisting 4 nos 25 x 6 mm, 2.25 m long and 8 nos 25 x 3 mm 2 m long verticals M.S. flats, riveted to 3 nos 25 x 6 mm M.S. flat iron rings in two halves, fixing together at site with required six numbers of 8 mm dia and 30 mm long bolts, including painting two coats with synthetic enamel paint of approved brand and manufacture over a coat of primer. One name plate of 1 mm thick M.S. sheet of size 250x100 mm shall be welded to the tree guard near the middle height and lettered CPWD / PWD/ any other approved name. The tree guard shall be suitably fixed to the ground by embedding four legs of tree guard in pits of suitable dia and to a depth of 25 cm, refilling the pits with soil and ramming, complete in all respect as per satisfaction and direction of Officer-in-charge.	EACH	3952.05	30.00	118561.5
8	2.31 HL	2.31 Filling of the following size empty pots with mixture of good earth & manure in the ratio of 2:1 (Two part of Good earth & one part of manure) and placing them on appropriate place i/c carriage of earth, manure and pots up to 50 mtr, as per direction of officer incharge. (The cost of good earth, earthen pots & manure will be paid seperately.) 2.31.1 Size of Empty Pots 15cm Top dia, 8cm Bottom Dia & 15cm Perpendicular height	Each	6.70	300.00	2010
9	2.33HL	Providing and laying Neelgiri/Mexican grass turf with earth 50mm to 60mm thickness of existing ground prepared with proper level and ramming with tools wooden (Dhurmos) and than rolling the surface with light roller make the surface smoothen and light watering with sprinkler and maintenance for 30 days or more till the grass establish properly, as per direction of officer-in-charge.	SQM	211.25	500.00	105625
10	2.53HL	Providing and wartering of irrigation water through water tanker of Horticulture features i.e. lawn, tree, shrubs, hedge/edge, ground cover etc. at the site of work. Water tanker having 5000 lit. capacity with one labour for watering i/c cost of water, filling of tanker, wartering at site with all leads and lifts as per direction of officer-in-charge.	trip	806.4	50.00	40320
11	7.9HL	Providing and stacking of Bombax ceiba of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	EACH	70	100.00	7000

SCHEDULE "A3" : Item of works covered under CPWD, Delhi Schedule of Rates - 2018 : Horticulture

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
12	7.16 HL	Providing and stacking of Cassia fistula (Amaltash) of height 120-135 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	EACH	65	50.00	3250
13	7.17HL	Providing and stacking of Cassia siamea of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge	EACH	65	100.00	6500
14	7.18HL	Providing and stacking of Cassia javanica of height 120-150 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	EACH	85	100.00	8500
15	7.19HL	Providing and stacking of Cassia nodosa of height 120-150 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	EACH	65	100.00	6500
16	7.24HL	7.24 Providing and stacking of Delonix regia (Gulmohar) of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.v	EACH	60	50.00	3000
17	7.48HL	7.48 Providing and stacking of Jacaranda mimosifolia of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	EACH	60	100.00	6000
18	7.50HL	Providing and stacking of Lagerstroemia flosreginae of height 150-165 cm.in big poly bag of size 25 cm as per direction of the officer-in-charge.	EACH	120.00	50.00	6000
19	7.51HL	7.51 Providing and stacking of Lagerstroemia thorelli of height 150-165 cm.in big poly bag of size 25 cm as per direction of the officer-in-charge.	EACH	120	50.00	6000
20	7.55HL	Providing and stacking of Michelia champa (Golden Champa) of height 90-105 cm. in earthen pots of size 25 cm as per direction of the officer-in-charge.	EACH	90	100.00	9000
21	7.56HL	7.56 Providing and stacking of Millettia ovalifolia of height 120-135 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.	EACH	55	50.00	2750
22	7.57HL	Providing and stacking of Millingtonia hortensis of height 150-165 cm. in big poly bag of size 25 cm as per direction of the officer-in-charge.v	EACH	70	70.00	4900
23	7.59HL	7.59 Providing and stacking of Mimusops elengi (Maulsri) of height 180-195 cm., well developed with thick stem in big in big size HDPE bag as per direction of the officer-in-charge.	EACH	125	125.00	15625
24	7.62HL	7.62 Providing and stacking of Peltophorum species of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge	EACH	60	60.00	3600
25	7.72HL	7.72 Providing and stacking of Plumeria rubra of height 120-150 cm. with 3-4 branches and thick stem in big size HDPE bags as per direction of the officer-in-charge	EACH	400	400.00	160000
26	7.75HL	Providing and stacking of Polyalthia longifolia (Ashok) of height 180-195 cm. in gunny bag of size 30 cm as per direction of the officer-in-charge	EACH	100	100.00	10000
27	7.80HL	Providing and stacking of Saraca indica (Sita Ashok) of height 105-120 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge	EACH	80	80.00	6400
28	7.84HL	Providing and stacking of Tabebuia sp. of height 150-165 cm. in big polybags of size 25 cm as per direction of the officer-in-charge.	EACH	85	85.00	7225
29	8.43HL	Providing and stacking of Lagerstroemia indica of height 90-105 cm. multibranching in poly bags of size 25 cm as per direction of the officer-in-charge	EACH	40.00	40.00	1600
30	9.8HL	Providing and stacking of Jasmine grandiflorum (chameli) of height 30 cmt to 45 cm. in 20 cm size of Earthen pots / Plastic pots & as per direction of the officer-in-charge. .	EACH	30	30.00	900
No. of Items Thirty only		SCHEDULE "A3" Departmental Value				585011

NAME OF WOEK : "Baiyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway".

SCHEDULE- "B" : Item of works covered under USSOR (SWR) - 2021 - Items of works pertains to Foramation, Earthwork in Cutting / Filling with Railways earth.						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	011011	Earthwork in cutting (classified) in formation, trolley refuges, side drains, level crossing approaches, platforms, catch water drains, diversion of nallah & finishing to required dimension and slopes to obtain a neat appearance to standard profile inclusive of all labour, machine & materials and removing & leading all cut spoils either to make spoil dumps beyond 10m from cutting edge or for filling in embankment with leads within 2 km on either side of cutting edge, lifts, ascent, descent, loading, unloading, all taxes / royalty, clearance of site and all incidental charges, bailing & pumping out water, if required, etc. complete as per directions of the Engineer-in-Charge. The work is to be executed as per latest / updated edition of "Guidelines for Earthwork in Railway Projects" issued by RDSO, Lucknow. Cut trees shall be property of Railways and to be deposited in the railway godown unless specified otherwise in the Special Conditions of Contract : In all conditions and classifications of soil except rock {Note - (a) All usable earth arising from cut spoils shall be led into bank formation and Unusable spoils shall be dumped / stacked (b) All hard rock /and boulders not fit for filling will be stacked by the contractor and will be property of the Railways.} Note: i) Payment shall be based on cross section measurement only. ii) The term 'all soils' mentioned above include loose soil, ordinary soil (workable with spade), hard soil including stiff clay, moorum, shingle, soft laterite etc., requiring close application of picks to loosen and small boulders measuring not more than 300 mm in any direction. (iii) No extra payment for lead etc., is admisible. (iv) Only 75 percent payment for the quantity executed is payable in a particular bill initially. 15 percent of the balance amount shall be released after the L section and profile are perfectly reached and handed over to Railways. Remaining 10 percent shall be released only after the formation in the full block section or identified length is completed in all respects and handed over.	cum	152.07	5000.00	760350.00
2	013051	Turfing / planting, including all lead & lift and watering as required until properly rooted with. Note - Initially payment of only 40% will be made. Balance 60% will be paid only after 3 months of maintenance period, if the turfing is properly rooted : Turfing with sods, 10cm thick and 20cm square closely laid	sqm	102.42	5340.00	546922.80
3	012040	Mechanical compaction of earth work: Mechanical compaction of embankment, approaches to bridges etc., in specified layers using specified capacity vibratory power rollers as per type of soil, to achieve specified dry density of earth/other material using contractor's power rollers, tools and plants, consumables, labour, watering etc., all complete as per specification & special conditions and as directed by Engineer-in-charge. Note: If any other roller or other equipment is used for compaction, payment for the complete layer shall be reduced by 20 percent of the accepted rate for mechanical compaction.	cum	20.59	7000.00	144130.00
No. of Items Three only		SCHEDULE "B" Departmental Value				1451403

NAME OF WOEk : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE " C " : Item of works covered under USSOR (SWR) - 2021 : Supply of Cement						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	025061	Supply of Ordinary Portland cement of 43 / 53 grade conforming to IS 8112 / IS 12269 (upto date)and/or Portland Pozzolana Cement conforming to IS/1489 (upto date), at site of work to the extent of the quantities required for various items of works in schedule items including all cost of loading, unloading,leading, transporting, stacking, storing including making proper storage arrangements and all consumables, machinery, vehicles, labour etc., complete and as directed by the Engineer-in-charge. (a) Ordinary Portland Cement (43/53 Grade) NOTE :1) Use of Portland Pozzolona cement shall be restricted strictly to the permitted construction items only. Pozzolana cement shall not be used in PSC construction. 2) Admixtures such as super plasticizers will be permitted based on specific designs for permitted construction items with the approval of the AGM-in-charge. However, admixtures proposed shall be supplied free of cost by the Contractor and no compensation will be payable. 3. 33 Grade cement shall not be used in KRIDE construction works.	MT	7826.94	350.00	2739429
No. of Items ONE only		SCHEDULE "C" Departmental Value				2739429

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE " E" : Item of works covered CPWD, Delhi Schedule of Rates - 2018 : Items of works pertains to Supply of TMT Steel .						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	5.22.6 & 5.22A.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level & above plinth level : Thermo-Mechanically Treated bars of grade Fe-500D or more.	KG	83.50	447500.00	37366250
No. of Items ONE only		SCHEDULE "E" Departmental Value				37366250

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE " F" : Item of works covered under USSOR (SWR) 2021 - Contractor's own Earth (CoE)						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	012010	Earthwork in filling in embankment , guide bunds, around buried type abutments, bridge gaps, trolley refuges, rain bunds, if provided, platforms etc. with earth, suitable for embankment as per RDSO latest Specifications and guidelines GE: G-14 of Soil Quality Class SQ1, excavated from outside railway boundary entirely arranged by the contractor at his own cost including all leads, lifts, ascents, descents, crossing of nallahs or any other obstructions. The item shall include demarcation and setting out of profile, site clearance, removing of shrubs, roots of vegetations growth, heavy grass, benching of existing slope of old bank, all handling/re-handling, spreading in layers with motor grader, bringing the moisture content to OMC, mechanical compaction to specified density and dressing of bank to final profile as a complete job. The payment shall be made as per finished profile and the rate shall include all costs including taxes, octroi, royalty etc. except for mechanical compaction which shall be paid extra under relevant item. Cut trees shall be property of railways and to be deposited in the railway godown unless specified otherwise in the Special Conditions of Contract.	Cum	351.52	5000.00	1757600
No. of Items ONE only		SCHEDULE "F" Departmental Value				1757600

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE "G" : Item of works covered under USSOR (SWR) - 2021:Structral Steel & allied works for FOB						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	041261	With one coat ready mix Zinc Chromate conforming to IS:104 with DFT of 25-30 Microns followed by one coat of Zinc Chromate red oxide conforming to IS:2074 DFT of 25 Microns	Sqm	121.13	400.00	48452
2	'041263	With two coats Aluminium paints in dual containers conforming to IS:2339 with DFT of 12 - 14 Microns for each.	Sqm	132.01	400.00	52804
3	041390	Supplying fabricating and erecting welded and/or bolted and/or riveted steel work in built up sections, trusses and framed work, staging, racks etc.for Steel Structures other than bridge girders, using RSJ, tees, angles and channels/flats, plates, gussets, round or square bars, cleats, bolts etc., with contractors own steel including cutting, bending, straightening, drilling, riveting, hoisting, fixing, erecting, welding, bolting etc., with Providing stiffeners wherever required as per approved drawing including applying a priming coat of a approved steel primer with all contractors materials, labour, tools & plants, lead & lift including crossing of tracks if required etc., complete as per specification and as directed by Engineer-in-charge. Note : i) 50 % of the payment against supply of steel to the site of work on submission of invoice /cash bill and Indemnity bond . ii) 20% of the payment after fabrication of steel with two coat of primer , iii) 20% of the payment after satisfactory completeion of erection. iv) 10% of the payment after final painting and satisfactory completion of all works pertaining to this item Rate includes workes under Power block (OHE) / Traffic block.	MT	102999.73	65.00	6694982.45
No. of Items Three only		SCHEDULE "G" Departmental Value				6796238

NAME OF WOEK : "Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway".

SCHEDULE " J " : Miscellaneous Item of works.						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	1	Providing and fixing factory made 46mm thick double skin flush pressed steel door with Plain/ embossed design (E01, E02, E32, E05 or E18 - Tata Pravesh Standard or similar make) Internal/External doors of approved size and make made of 0.8/1.0/1.2 mm thick GI Sheet for shutter and 1.2/1.6 mm thick GI sheet for frame conforming to IS 277 with minimum 120 gsm of Zn Coating to provide rust resistance. The Gap between the sheets shall be filled with Honeycomb paper of minimum 150 gsm and provided with stiffeners for tower bolts (2 Nos.), Door stopper, handle and Lock (1 No.) etc. as per approved drawing. The outer surfaces shall be finished with Pure Polyster powder coating (Jotun or equivalent) of thickness not less than 60 Micron and wood finish through Heat transfer over and above this complete as per the directions of Engineer-in-charge	Sqm	10438.00	70.00	730660
2	2	Supply and fixing of polished granite benches of size 2.00m x 0.45m as per plan No. B/GL/615 including earth work excavation and fixing in CC 1:3:6 eith all contractors materials, lead, lift, labour, tools and plants etc., complete and as dorected by the Engineer-in-charge (Inclusive of cost of cement).	each	12000.00	22.00	264000
3	3	Design and submission of detailed drawing for Station Building upto Floor 2 including Architectural finished suitable to building and also satisfying Railway functional requirement and working. Note: 1) This includes submission of Structural design of building and drawing details. 2) Architectural design need to be given to building as per direction of Engineer-in-charge suitable to the locality heritage / culture of the region.; 3) only skeleton line sketch of building will be given by the Railways for station functional requirement.	Sqm	200.00	100.00	20000
4	4	Providing water pedastal as per Drg.No. 6257/50A including fixing 4 Nos. chromium push water tap of approved quality and make as approved by the Engineer with contractor's labor, materials, cement etc., complete with all fittings, supply and laying of glazed tiles including cement	No	12600.00	9.00	113400

SCHEDULE " J " : Miscellaneous Item of works.						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
5	5	Manufacturing and supplying and Fixing precast Oranamentally designed fencing wall with natural stone finish surface in natural grey/terracotta red colour or any approved colour approved by Engineer in-charge,of size 1800mm x300mm of 50mm thickness ,with M30 grade of concrete for height of 1.8m with RCC Pre-cast concrete post of size 150mm x100mm with grooves suitable to fit and fix .Excavation of pit of size 300x300x600mm and concreting with CC 1:2:4 duly fixing posts true vertical alignment and at horizontal distance about 1.8 m with all contractors materails, labour,tools and plants,lead,lift etc complete as per Drg No.Dy.CE/CN/HAS SK 1-2012 and as directed by Engineer in - charge. (Rate includes excavation of pit and concreting with CC 1:2:4 and steel ,Wire mesh,cement and all other Materils)	Sqm	1880.00	2845.00	5348600
6	6	Finishing with Vedic Eco-friendly Cow dung emulsion Khadhi India paintt having Voc 0% ans as UV resistant as per Is-15489, Eco-friendly , non-toxic with antifungal and anti bacterial properties : Two or more coat applied on new work	Sqm	207.00	1750.00	362250
7	7	Fabrication & supply of stainless steel 3 seater benches with back rest of arc make confirming to SS 304 grade size:1742(L)x 890(HT) x465 width with perforated sheet of 1.6mm thick with ss box section frame 60mmx40mmx2mm thick 38mm diax1.60 mm thick SS pipe for hand rest base plate 6mm thick as per (Drg RB-5b) figure.[Inscribed with name of the MP/MLA]	Each	21375.00	10.00	213750
8	8	Fixing of steel benches with anchor and split bolts by drilling of bore with generator and fuel with contractors own labour and equipments and as directed by the Engineer - in - charge.	Each	500.00	10.00	5000
9	9	Supply of station name boards incl., making cutting and fabrication of mild steel plates of size 1250x2500x3.15 mm thick plates should be welded in box shape with 150mm dia x3000mm length B class MS pipe support for instalation at platforms. The station name should be trilingual are made of Retro reflective HIP IV grade film. The total structure should be coated anti rust epoxy coat as approved and directed by the Engineer-in-charge	No	95000.00	6.00	570000
10	10	Supply , Errection & Fixing of MS Portable Bunk/Form House Cabin (35'X10'X8.5'), Wooden Fixed Partition (35'X10'X8.5') , Attached Toilet (EWC) with Tiles (6'x6') , MS Racks (9'x1.5x7 & 6'x1.5x7') , Extra Door (6'x2.5) and Canopies (4'x1) as approved and directed by the Engineer-in-charge	Each	624899.00	3.00	1874697

SCHEDULE " J " : Miscellaneous Item of works.

SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
11	11	Providing and laying Cement concrete or RCC M25/M30/M35/M40 in pre-cast for Platform wall , raft, abutment, dirt wall, return wall , wing wall, fly wing wall, retaining wall, approach slab for inspection steps, mslab for inspection path, coping slab for bridge, slab for bank slope, foott path slab, wearing course, ballast retainers, RCC railing , inspection paltform, pedestal, boxes and other miscellaneous works using well graded stone aggregatre of 20mm nominal size. Transportation to site from casting yard, lunching , laying , aligning and jointing the pre-cast items including road movement upto the the nearest approachable point and short leading by rail lorry etc., Wherever required as directed by Engineer-in-charge. The rate is inclusive of cost of all men , machinery, materials and construction / repair of approach roads as per requirements for which no extra payment will be made. Payement to be released in two stages. 1. 50% on casting of precast components ; 2. 45% on transportation and launching of precast components to the site ; and 3. balance 5% on completion of balance works. 4. Rate is excluding of cost of Cement & ReinforcemSteel work which will be paid under relavant items of schedules.	Cum	10506.71	820.00	8615502.2
12	12	Building Designs and Drawings - For Yards of Crossing Stations in Doubling lines (CAO/CN/BNC/SWR Vetted Rate - Oracle Code FLSD-18A)	Each	192233.80	2.00	384467.6
13	13	Preparation and submission of Final report giving complete and comprehensive record of investigations, laboratory test reports and calculations in approved format	Each	2416.00	7.00	16912
14	14	Preparation and submission of general arrangement drawing of FOB showing plan, elevation, section, notes and other relevant particulars based on sketches given by Railways and collecting minor site details as required to appropriate scale and SIZE ABOVE A0 with all ascents, descents , taxes, octroi , fees, duties, with contractor's tools and plants, consumables, men, crew, machineries and labour with all lift , etc., complete as per special conditions / specifications / regulations and as directed by the Engineer-in-Charge Note 1) rate quoted is applicable for size bigger than A0 . 2) In case of size of A0, A1, A2, rate at 80%, 75%, 70% will be paid.	Each	14427.00	1.00	14427
15	15	Preparation and submission of COMPLETION DRAWINGS of FOB, etc., with the aid of computer showing relevant particulars to appropriate scale as per Railway engineering code on approved quality transparent media as per the details supplied by Railways including submission of check print for proof check to incorporating the suggested corrections and modifications and supplying the final plot on approved quality transparent media with 6 copies of Ammonia prints with all contractor and materials, labour, tools, plant etc., complete.	Each	14427.00	1.00	14427

SCHEDULE " J " : Miscellaneous Item of works.						
SL NO	ITEM CODE	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
16	16	Design and submission of structural design calculation and detailed drawing along with bar bending schedule for the FOB including all column foundations, gangway slab, stairway and ramp of FOB. General arrangement drawing will be supplied by the Railway. Draft copies of design and drawing should be given by contractor to Railways for approval and after approval only final structural drawing in tracing films along with blue print copies (10 sets) with design calculation should be supplied. Any additions, alteration, corrections advised by the Engineer-in-charge should be incorporated. NOTE: 1. Necessary field particulars has to be taken by the contractor's Engineer along with departmental Engineer-in-charge for design and preparation of foundation details.	Each	96667.00	1.00	96667
17	17	Proof checking for structural design and drawing of foundations including all column foundation, gangway slab, stairway and ramp of FOB and details of structural/working drawings by IISC/Bengaluru	No	76667.00	1.00	76667
18	18	DECK SHEETING: 1.Designing, supplying, fabricating and providing of trapezoidal roll formed deck sheeting profiles of 50mm depth made of galvanised steel troughed metal decking plate over cross girders/supports for cast-in-situ deck slab of ROB. Thickness of deck plate shall be 1.00mm (minimum) and shall serve as permanent shuttering to deck slab of 250mm (max) thickness measured over crest of metal decking and shall have adequate strength to support the weight of green concrete and imposed loads during concreting over a span of 2000mm between supports. Deck sheets to be embossed to facilitate enhanced sheet to concrete bonding with contractor's all materials, men, equipment, tools and plant, fixing arrangements, all lead and lift and the work to be carried out above Railway tracks and 25 KV OHE electrified area without affecting Railway traffic and damage to Railway properties as directed by Engineer-in-charge NOTE:1.The rate includes submission of manufacturers design calculations/test reports	Sqm	1803.00	445.00	802335
No. of Items Eighteen only		SCHEDULE "J" Departmental Value				19523762

NAME OF WOEK : “Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway”.

SCHEDULE " E1 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	Supply of wiring point with 3 runs of 1.5 sq.mm multi stranded PVC insulated copper wire for light fan points scope includes modular type switch and 2 way ceiling rose as per approved make (Scope does not includes PVC conduit / casing and capping)	Per Point	345.00	282.00	97290
2	Supply of wires for circuit main from meter board to MCB distribution board and power plug wiring with 2 runs of 4 sq.mm multi stranded PVC insulated copper wire and 1 run of 1.5 sq.mm copper wire for earth (scope does not include PVC conduit / casing and capping)	Mtr	98.00	572.00	56056
3	Supply of wires of material for running main from MCB distribution board to SDB with 2 runs of 2.5 sq.mm multi stranded PVC insulated copper wire for phase and neutral and 1 run of 1.5 sq.mm copper wire for earth continuity (scope does not include conduit)	Mtr	79.00	860.00	67940
4	Supply of wiring by 4 nos of 6 sq.mm (RYBN) and 1 no of 2.5 sq.mm copper wire in respective colours required as per specification	Mtr	272.00	96.00	26112
5	Supply of PVC conduit pipe 25 mm dia wall thickness 2mm +/- 0.2mm grey in colour	Mtr	35.33	1383.00	48861
6	Supply of PVC conduit pipe 20 mm dia wall thickness 2mm +/- 0.2mm grey in colour	Mtr	27.00	1735.00	46845
7	Supply of modular multi pin socket 6A capacity with separate switch with indicator	No	248.00	120.00	29760
8	Supply of modular multi pin socket 6/16A capacity with separate switch	No	347.33	50.00	17367
9	Supply of modular flush type unbreakable box with cover frame inner plate for switch board of 18 module	No	450.00	2.00	900
10	Supply of modular flush type unbreakable box with cover frame inner plate for switch board of 12 module	No	265.33	28.00	7429
11	Supply of modular flush type unbreakable box with cover frame inner plate for switch board of 8 module	No	217.00	54.00	11718
12	Supply of modular flush type unbreakable box with cover frame inner plate for switch board of 6 module	No	177.67	26.00	4619
13	Supply of modular flush type unbreakable box with cover frame inner plate for switch board of 4 module	No	106.00	15.00	1590

SCHEDULE " E1 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
14	Supply of modular flush type unbreakable box with cover frame inner plate for switch board of 3 module	No	80.00	26.00	2080
15	Supply of modular flush type unbreakable box with cover frame inner plate for switch board of 2 module	No	60.00	16.00	960
16	Supply of rigid PVC pipe 50 mm inner dia heavy duty as per specification for raising cable protection	Mtr	113.00	128.00	14464
17	Supply of rigid PVC pipe 75 mm inner dia heavy duty as per specification for raising cable protection	Mtr	194.00	525.00	101850
18	Supply of rigid PVC pipe 100 mm inner dia heavy duty as per specification for raising cable protection	Mtr	259.00	55.00	14245
19	Supply of wires with 4 runs of 10 sq.mm multi stranded PVC insulated copper wire and 1 run of 1.5 sq.mm copper wire (scope does not include PVC conduit / casing and capping)	Mtr	350.00	170.00	59500
20	Supply of 8 SWG GI earth wire	Mtr	9.33	4535.00	42312
21	Supplying and fixing regular MCB distribution board of 12 way SPN (2+10) on wall / wood board / flush mounting using required clamps, bolts, nuts etc., with provision for fixing suitable type capacity MCB's single phase Double door with powder coated painting. Made out of 14 SWG MS enclosure.	No	1210.00	5.00	6050
22	Supplying and fixing regular MCB distribution board of 12 way (8+36) on wall / wood board / flush mounting using required clamps, bolts, nuts etc., with provision for fixing suitable type capacity MCB's single phase / 3 phase / Double door with powder coated painting. Made out of 14 SWG MS enclosure.	No	5850.00	5.00	29250
23	Supply and fixing of Flexy Tier Distribution Board with Metal Door, No.of Modules 56, No. of Ways 4 row of 14mod	No	7050.00	1.00	7050
24	Supply and fixing of 3 pin ceiling rose	No	25.00	31.00	775
25	Supply of wall /bracket mounting type industrial, heavy duty single phase 600 mm sweep oscillation type Air circulators	No	8130.00	5.00	40650
26	Supply and fixing of energy efficient 1200 mm sweep energy smart AC ceiling fan with electronic regulator 5 star rating and all accessories complete set	No	1936.33	54.00	104562
27	Supply, erection and commissioning of online UPS 2KVA with isolation transformer suitable for single phase AC input and Single phase AC output, floor mounted type indicative back up time 30 minutes	Set	38000.00	1.00	38000
28	Supply of 1x20 watts LED light batten fitting with LED lamp 4 feet long with driver circuit as per CEE/SWR specification No.SWR/LED light fitting (indoor/outdoor) / 011-2016 Dt. 18.04.2016	Set	629.67	212.00	133490
29	Supply of 1x10W LED 2 feet tube light fitting complete set for toilet as per specification	Set	551.00	36.00	19836

SCHEDULE " E1 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
30	Supply of 300 mm sweep exhaust fan single phase 4 pole propeller type with louver shutter suitable for the fan as per specification	No	1560.00	13.00	20280
31	Supply of 150 mm sweep exhaust fan single phase 4 pole propeller type with louver shutter suitable for the fan as per specification	No	1388.00	14.00	19432
32	Supply and fixing of MCB DP 6/10/16/32A	No	707.00	127.00	89789
33	Supply and fixing of MCB 4 pole 32A	No	1728.00	6.00	10368
34	Supplying and fixing of 16A TPN miniature circuit breakers on existing MCB distribution boards using necessary fixing materials and 'C' Type curve, indicator ON/OFF, energy cross-3 with Short circuit breaking capacity of 10K and complete wiring as required confirming to IEC 60898	No	1715.00	2.00	3430
35	Supplying and fixing of 63A TPN miniature circuit breakers on existing MCB distribution boards using necessary fixing materials and 'C' Type curve, indicator ON/OFF, energy cross-3 with Short circuit breaking capacity of 10K and complete wiring as required confirming to IEC 60898	No	2397.00	2.00	4794
36	Supply of LT feeder pillar of 125 Amp comprising of the items indicated as under: i. incoming MCCB of 125 A, 4 pole, 35 kA (Ics=100%Icu) - 1 No. ii) Outgoing MCCB, 63A, 4 pole, 25 kA (Ics=100% Icu) - 4 Nos. lii) out going MCB 40A, 4 pole, 10 kA- 4 Nos, iv) outgoing MCB 32A, DP, 10 kA-4 Nos, v) Outgoing MCB single pole 32A, 10 kA - 4 Nos vi) Modular digital time switch and 3 ph contactor - 2 set vii) Sleeved / Epoxy coated copper bus bar 250 A in bus bar chamber viii) Indication lights	No.	118233.00	2.00	236466
37	Supply of 30W LED WP (IP-65) street light fitting with driver circuit complete set as per CEE/SWR specification	No	1353.00	134.00	181302
38	Supply and erection of 1.5 ton split AC 4 Star rating with stabilizer and inverter type working on single phase supply with features of cooling along with fabrication and supply of MS brackets for mounting outdoor units including installation and commissioning of AC plant with all accessories	No.	70000.00	4.00	280000
39	Supply and Fixing of On Delay Timer 24A AC/DC, 220-240 VAC Similar to ABB Product ID 1SVR550107R5100 or any other approved make	No.	1911.60	7.00	13381
40	Supply and Fixing of Dual Channel Digital Time Switch with battery backup and 24 Hr Operation similar to ABB Product ID 2CSM222521R1000 or any other approved make	No.	13133.40	2.00	26267
41	Supply and Fixing of Modular type Single phase starter switch for AC Application Similar to ABB Product ID 1SYK100001A1556 or any other approved make	No.	1101.82	4.00	4407
42	Supply and Fixing of Three pole Power Contactor with Auxiliary Contact as required similar to ABB Product ID 1SBL321074R8010 or any other approved make	No.	5150.70	8.00	41206

SCHEDULE " E1 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
43	Supply and fixing of 50W, Energy saving, environment friendly and robust high bay/medium bay LED with PDC housing suitable for ceiling (Surface/Suspended) mount Similar to Havells ILIOSBAY PLUS HIGHBAY-IP 65 or any other approved make	Nos	3924.37	4.00	15697
44	Design, supply and erection, testing and commissioning of BELLANDUR name board of LED type glow sign in Trilingual Kannada, Hindiband English with combination of LED driver unit, angle iron supporting structure with foundation and accessories in 2 ft height specification	Letter	14060.00	20.00	281200
45	Supply, Installation, Testing and Commissioning of 0.5 HP Water Pump Similar to Kirloskar Jalraaj Ultra self priming water pump or any other Approved make including all necessary accessories	No	4086.00	3.00	12258
46	Supply of 4cx70 sqmm LTUG cable 1.1 KV Grade, having stranded aluminium conductor, PVC insulated extruded inner sheathed, galvanised steel strip conforming to IS 3975:1990 and extruded PVC outer sheathed armoured cable with specified IS-1554 Part-1:1988 and conforming to GTP (Guaranteed technical particular) with overall satisfactory performance for minimum period of 5 years	Mtr	245.00	255.00	62475
47	Supply of 4C*16 sq.mm LT UG cable, 1.1 kV grade having stranded aluminium conductor, PVC insulated, extruded inner sheathed, galvanised steel strip conforming to IS3975-1990 and extruded PVC outer sheathed armoured cable with specified IS-1554 part-1 1998 and conforming GTP (Guaranteed technical particular) with overall satisfactory performance for minimum period of 5 years	Mtr	113.00	3623.00	409399
48	Supply and fixing of crimped terminal lugs to suit 4C*16/4C*25/4C*35/4C*50 sq. mm LT UG cable	No	33.00	236.00	7788
49	Supply and fixing of cable gland to suit 4C*16/4C*25/4C*35/4C*50 sq. mm LT UG cable	No	123.00	8.00	984
50	Fabrication, assembling and supply of hot dip galvanized octagonal pole 5.5 mtr long made up of 3 mm thick sheet, top 70mm A/F and bottom 130mm M/F with single arm bracket 350mm long to fix street light luminaire with foundation bolt, base plate 250*250*12mm and built in junction box with strip connector, cut out and all accessories with street light pole / platform pole	No	8865.00	117.00	1037205
51	Supply and fixing of metal oxide surge lightning arrestor. Arrestors are gapless type (9 kV, 5 kVA) as per IEC 600-99-44 and IS IS 3070 part (iii) lightning arrestor 11 kV rating for RYB phases with earth connection by GI flat size 25*3 mm as per specification	set	4832.00	3.00	14496
52	supply and fixing of 200A DOLO fuse unit for 11 kV HT RYB phases as per specification	set	5168.33	2.00	10337
53	Fabrication, assembling and supply of RCC/PSCC pole 9 mtr. / 9.10 mtr. long HT single pole structure scope includes 2 way cross arm with single top support with 11 KV pin insulator / shackle insulator - 3 Nos. as per specification	No	6987.50	16.00	111800

SCHEDULE " E1 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
54	Fabrication, assembling and supply of RCC / PSCC pole 9 Mtr. / 9.10 mtr. long Double pole structure with Disc insulator 11KV, 45 KN - 3 Nos, Danger boards - 2 Nos. Anti climbing device - 2 Nos, MS channels / angles etc. as per specification (without support frame for GOS)	No	25000.00	1.00	25000
55	Assembling, fabrication and supply of RCC DP (3.3 mtr width) 9 mtr. long with accessories including fabrication. Scope include 3 Nos. disc insulator 45 kN with hardwares 2 Nos danger boards, 2 Nos. of anti climbing device with suitable side rails and MS channel to mount the transformer.	set	28994.00	2.00	57988
56	Supply of ACSR Rabbit conductor 7/3.35 mm size	mtr	54.00	2400.00	129600
57	Supply of stay set with stay tightner, stay rod, stay clamp, stay insulator, stay wire etc complete set as per specification.	set	2044.33	12.00	24532
58	Manufacture, supply and fixing of galvanized wire net fencing chain type made of 10 SWG MS frame of 40*40*5mm angle including erection	1 sqm	1225.00	87.00	106575
59	Supply of tripple extrusion dry cured 11 kV, XLPE HT UG cable of size 3 core 95 sq.mm as per specification	mtr	916.00	65.00	59540
60	Supply and fixing of alkathin tube for RYB phase	mtr	24.00	183.00	4392
61	Supply and fixing of LT distribution kit for 25/63/100 kVA transformer	set	4618.00	2.00	9236
62	Supply of GI falt of 25mm*3mm size for earth connection for 11 kV and 33 kV system	mtr	61.00	85.00	5185
63	11 kV, 200 Amps Single Break GOS, Vertically Operated	set	11328.00	1.00	11328
64	Supply of Gang Operated Switch 11 KV 200 / 400A single break horizontal type for 11 KV RYB phases with support frame as per specification	set	14290.00	2.00	28580
65	Supply of 4cx35 sqmm LTUG cable 1.1 KV Grade, stranded aluminium conductor, armoured cable with heat resistance insulation, ISI marked PVC outer sheathed (FR) of Type ST02 cable (FR Grade CI category) having insulation of PVC compound type-C, conforming to IS1554 (pART-1)/1988 (Reaffirmed 2005)	mtr	231.00	85.00	19635
66	Supply of 4cx120 sqmm LTUG cable 1.1 KV Grade, having stranded aluminium conductor, PVC insulated extruded inner sheathed, galvanised steel strip conforming to IS 3975:1990 and extruded PVC outer sheathed armoured cable with specified IS-1554 Part-1:1988 and conforming to GTP (Guaranteed technical particular) with overall satisfactory performance for minimum period of 5 years	Mtr	490.00	245.00	120050
67	Supply of distribution tranformer of 11 kV /433 V, 63 kVA capacity aluminium wound, out door and oil cooled type, 4 star as per ESCOM approved make and specification	set	146106.00	2.00	292212
68	Supply of HT 11 kV outdoor termination kit (jointing kit) 3*95 sqmm HTUG cable as per specification	No	5786.00	4.00	23144
69	Supply and fixiing of out door LT termination kit / pot head upto 4Cx 35 sqmm LTUG cable	No	600.00	8.00	4800

SCHEDULE " E1 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
70	Fabrication, assembly and supply of double door box of 16 SWG CRCA sheet powder coated box of size 400x600x250mm with supply of 3 phase energy meter 0 - 40A - 1 No, fuse cut out 63A - 3 Nos, Neutral link, wiring and FPMCB - 32 A - 2 Nos mounted on 6mm thick hylum sheet including aluminium bus bar 25x5mm - 500mm long - 4 Nos with locking arrangements and all accessories (Contractor should collect energy meter from ESCOM)	No	10500.00	8.00	84000
71	Supply and Provision of 40mm GI pipe	No	190.00	24.00	4560
72	Fabrication, assembling and supply of RCC 9 mtr long LT single pole structure scope includes 4 way cross arm, LT pin / shackle insulator as per specification	No	6525.00	8.00	52200
73	Supply of electrically operated water lubricated water cooled submersible pump set 5 HP capacity 25 stages suitable to operate 3 phase 415 V, 50 Hz AC as per specification	set	23750.00	6.00	142500
74	supply of out door type DOL and board consisting of contactor relay three phase preventer volt meter and ammeter pilot lamps and ON / OFF button	no.	7600.00	6.00	45600
75	Supply of submersible flat copper cable of size 2.5 sq.mm	mtr	64.00	1010.00	64640
76	Supply of borewell clamp, cap and GI bend for the above	set	806.00	6.00	4836
77	Supply of gun metal / non return valve	no.	1047.67	6.00	6286
78	Supply of 4C*16 sq.mm LT UG cable, 1.1 kV grade having stranded aluminium conductor, PVC insulated, extruded inner sheathed, galvanised steel strip conforming to IS3975-1990 and extruded PVC outer sheathed armoured cable with specified IS-1554 part-1 1998 and conforming GTP (Guaranteed technical particular) with overall satisfactory performance for minimum period of 5 years	Mtr	90.00	1650.00	148500
79	Design, fabrication and supply of 16 mtr high mast system with its accessories. Mast shaft shall be in two sections, hot dip galvanized and suitable for wind velocity as per IS 875 part3. It shall also include accessories for high mast including head frame, steel wire rope 6mm dia (7/19 construction) double drum winch, galvanized canteen carriage arrangement suitable for 6 luminaires symmetrically and its control boxes and lighting panel. The mast shall have an integral power tool system. Luminaires wiring materials not included in the mast supply price	set	233915.00	3.00	701745
80	Supply of foundation bolts manufactured from special steel along with nuts, washers, anchor plates and templates	set	9369.50	3.00	28109
81	Supply of 150W out door type LED flood light fitting for High mast application as per specification enclosed	No	17611.50	18.00	317007
82	Supply of control panel housing having suitable control circuit for auto ON/OFF operation of the mast including 2 Nos. of timer (real time clock micro controller) contactor. It shall also consist of suitable control for the power tool motor	set	29588.50	3.00	88766
83	Supply of glands for 4C*16 sqmm XLPE UG cable	No	102.00	8.00	816
84	Supply of gland for 4C*70 sqmm LTUG cable	No	134.00	2.00	268
85	Supply of 25*6 mm GI earth strip	Mtr	91.50	70.00	6405

SCHEDULE " E1 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
86	Fabrication, supply of 6/5/4 way bracket of flat size 50*6mm , 500mm long with reel insulator, provision of fixing of bracket will be welded or bolt, nuts type as per instruction of Engineer-in-charge	Nos.	325.00	8.00	2600
87	Supply of multi strand 10 sq.mm PVC copper wire RED, YELLOW, BLUE, BLACK, GREEN	Mtr	77.00	1100.00	84700
88	Supply of HDPE pipe of size 50mm PE 80 PN-4	Mtr	77.33	220.00	17013
89	Supply and fixing of Lt cable terminal sintex box of size 333*233*120mm model No.GSJB-3020 hinged door with 32A strip	Set	1733.33	4.00	6933
90	Supplying and fixing of 2mm thick of preforated cable GI tray with on existing MS angle support using necessary GI bolts/nuts and washer or welding as required 150*50mm	Mtr	425.00	144.00	61200
91	Supply and fixing of PVC junction box of size 150*150*65 mm including heavy duty 4 pole strip connector of 32 A capacity	Set	225.00	20.00	4500
92	Supply of cable gland for 4C*16 sqmm cable	Nos	85.00	4.00	340
93	Supply and fixing of crimped lugs to suit 4C*16 sqmm LT UG cable	Nos	10.00	16.00	160
94	Supply of wires for circuit main from junction box to junction box with 2 runs of 4 sqmm multistranded PVC insulated copper wire and 1 run of 1.5 sq.mm copper wire	Mtr	58.00	300.00	17400
No. of Items	SCHEDULE "E1" Departmental Value				6739202

NAME OF WOEK : "Baiyyappanahalli - Hosur Doubling Project: Construction of Station Building, Platforms, Platform shelters, circulating area, approach roads and other Passenger Amenities works at Belandur Road Railway Station, construction of Station Building at Uskur & Extension of Platforms, Construction of Platform shelters and providing Ramp for existing Foot Over Bridge at Karmelaram Railway Station, Providing Porta Cabin at LC No. 133 ,134 136 and S&T building cum gate lodge for mid-section interlocked LC gates including all Electrical works and other Misc. works upto Karnataka / Tamilnadu state border in Bangalore Division of South Western Railway".

SCHEDULE " E2 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
1	Connecting / wiring of circuit main by using 2x4 sq.mm and 1x1.5 sq.mm / 5x6 sq.mm and 1x1.5 sq.mm / 3x4sq.mm and 1x1.5 sq.mm / 2 runs of 6 sq.mm and 1x1.5 sq.mm / 4 runs of 4 sq.mm / 4 runs of 10 sq.mm	Mtr	5.00	836.00	4180
2	Connecting / wiring by using 2x2.5 sq.mm and 1x1.5 sq.mm wires	Mtr	6.00	860.00	5160
3	Wiring of Light / Fan points by 3 runs of 1.5 sq.mm copper wire and fixing of accessories	Per Point	46.67	282.00	13160
4	Fixing, testing and commissioning of 16A / 6A socket and switch	No	25.00	169.00	4225
5	Fixing / concealing of PVC conduit pipe 20/25 mm dia with accessories	Mtr	8.00	3118.00	24944
6	Fixing of Cable Protection PVC pipe 50/75/100 mm dia with accessories	Mtr	40.00	370.00	14800
7	Fixing, testing and commissioning of 4ft, 1x20W / 2ft, 10W LED tube light fitting and extension wiring with 3cx1.5 sq.mm copper wire from ceiling rose complete set	Set	69.00	248.00	17112
8	Fixing, testing and commissioning of LED street light fitting along with supply of and provision of 1 mtr long 25 mm dia B class GI pipe bracket with fixing accessories.	No	197.00	134.00	26398
9	Fixing and commissioning of modular switch board 18 to 8 module	No	15.00	2.00	30
10	Fixing and commissioning of modular switch board 12 to 2 module	No	15.00	171.00	2565
11	Fixing, testing and commissioning of air circulators 600mm sweep with accessories to fix on pillars / wall	No	190.00	5.00	950
12	Fixing, testing and commissioning of AC ceiling fans and regulator complete with 3 core 1.5 sq.mm flexible copper wire for extension from ceiling rose	No	71.67	38.00	2723
13	Fixing, testing and commissioning of exhaust fan with bird guard	No	139.33	27.00	3762
14	Earthing arrangements as per specification	Set	3351.67	27.00	90495
15	Fixing / running of 8 SWG GI earth wire	Mtr	5.00	4525.00	22625
16	Co-ordination / liasoning and chasing with state utility company for availing new electrical connection / augmentation of sanctioned load at stations etc., including applying for load, collection of estimates for loads, arranging payment from KRIDE, depositing payment to state utility company, arranging release of load and other related works, payment to be made to SEB for new connection / load augmentation etc., shall be made by KRIDE.	Each Location	9690.00	11.00	106590

SCHEDULE " E2 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
17	Installation, testing and commissioning of weather proof LT feeder pillar of 125 Amp comprising of the items indicated as under: i. incoming MCCB of 125 A, 4 pole, 35 kA (Ics=100%Icu) - 1 No. ii) Outgoing MCCB, 63A, 4 pole, 25 kA (Ics=100% Icu) - 4 Nos. lii) out going MCB 40A, 4 pole, 10 kA- 4 Nos, iv) outgoing MCB 32A, DP, 10 kA-4 Nos, v) Outgoing MCB single pole 32A, 10 kA - 4 Nos vi) Modular digital time switch and 3 ph contactor - 2 set vii) Sleeved / Epoxy coated copper bus bar 250 A in bus bar chamber viii) Indication lights	Nos	18571.00	2.00	37142
18	Erection, testing and commissioning of octagonal street light poles with hardwares for reinforcement of foundation and fixing (cost of foundation not included in the rate)	No	352.00	117.00	41184
19	Carrying / provision of CC foundation of 1:3:6 ratio for erecting poles of SP/DP structures) RCC pole/ stay set/ platform pole in any type of soil.	Cum	3357.67	58.28	195685
20	Excavation of LT cable trench of 0.3 m width, 1 mtr depth including refilling the trench along with supply and spreading of sand and bricks as per specification.	Mtr	119.17	1827.00	217724
21	Trenchless cutting to cross the cable across the track / road, duly supply and provided with HDPE pipe of size 90.9 x 76.5mm size PE 80, PN6 Category ISI approved as per instruction of Engineer in charge (Scope includes cost of horizontal drilling, cost of pipe and laying of pipe etc., but charge for laying of cable is not included)	Mtr	1000.00	550.00	550000
22	Earth work by excavation of pit for CC foundation to erect the HT/LT poles (for DP/SP structures)/ RCC spun pole / strut pole/stay set/ including all type of poles in any type of soil (for LT, 11 kV and 33 kV category)	cum	155.00	29.00	4495
23	Pipe earthing arrangements (for LT, 11 kV & 33 kV system)	set	3045.50	6.00	18273
24	Excavation LT/HT cable trench 0.3m width, 1 m depth in any type of soil including refilling the earth (without brick and sand)	Mtr	65.00	646.00	41990
25	Provision of cable route indicator, made out of cast resin marked HT/LT cable fitted on Ms angle of size 25*3mm, 300mm long embedded in PCC block of size 300*300*400mm with cement concrete 1:3:6 ratio	No	292.00	77.00	22484
26	Fixing and running of GI earth strip 25*3mm with accessories	Mtr	13.00	154.00	2002
27	Fixing, testing and commissioning of GOS with accessories as per specification	No	531.00	1.00	531
28	Fixing and commissioning of outdoor HT termination kit for 3*95 sqmm HT UG cable	No.	856.00	4.00	3424
29	Fixing of disc insulators with hardwares (additional qty)	Nos.	51.00	6.00	306
30	Laying, testing and commissioning of LTUG cable of size 4c x 120 sq.mm	Mtr	22.33	245.00	5472
31	Laying and commissioning of 11 kV HT UG cable of 3C*95 sqmm size	Mtr	38.50	65.00	2503
32	Excavation of loose coil pit	No	641.33	1.00	641
33	Erection, testing and commissioning of 11 KV RCC pole 9 Mtr. long Double pole structure in CC foundation and fixing of MS channels, angles etc. including painting of hardwares as per specification (cost does not include excavation and CC foundation charges)	No	1232.50	1.00	1233
34	Erection, testing and commissioning of Stay set as per specification (foundation cost not included)	No	181.67	8.00	1453

SCHEDULE " E2 " : Electrical works.					
SL NO	DESCRIPTION OF ITEMS	UNIT	RATE	QTY	AMOUNT
35	Laying, testing and commissioning of LTUG cable 4cx25 / 4cx16 / 4cx35 / 4cx50 sqmm as per specification	Mtr	13.00	5023.00	65299
36	Stringing of ACSR Rabbit conductor	Mtr	10.67	2400.00	25608
37	Erection testing and commissioning of Transformer 63 KVA	No	3530.00	1.00	3530
38	Erection, testing and commissioning of RCC 9 mtr. long single pole structure HT / LT pole / strut pole and erection of cross arm HT pin / shackle insulator with all accessories (cost does not include excavation and CC foundation charges)	No	358.00	24.00	8592
39	Erection, testing and commissioning of energy meter board (meter panel board) with meter and accessories in concealed / surface manner with all allied material and works	No	1069.00	8.00	8552
40	Erection, testing and commissioning of submersible pump set, GI pipe fixing, clamp fixing, flat cable fixing, fixing of non return valve, including supply of necessary GI bends / collors accessories etc. with allied works.	set	2375.00	6.00	14250
41	Erection, testing and commissioning of DOL panel board for submersible pump set	set	285.00	6.00	1710
42	Excavation of LT cable trench of 0.3 m width, 1 mtr depth including refilling the trench along with supply and spreading of sand and bricks as per specification.	mtr	120.50	1490.00	179545
43	Releasing of existing street light poles with hardwares	No	316.80	17.00	5386
44	GI pipe earthing arrangement as per specification	No	3030.33	6.00	18182
45	Laying of 4C*70 sqmm LT UG cable	Mtr	16.00	90.00	1440
46	Fixing and commissioning of crimped terminals for 4C*16/25/50/70 sqmm size	No	15.00	35.00	525
47	Fixing and commissioning of glands 4C*16/25/50/70 sqmm LT UG cable	No	15.00	8.00	120
48	Erection and commissioning of high mast with the help of suitable equipments and wiring of luminaires with all materials and labour including fixing of fittings	set	24218.50	3.00	72656
49	Design and casting of suitable shallow foundation with M-20 concrete for highmast considering the site as 10T/sq.mtr depth with all maerial and labor	set	50905.00	3.00	152715
50	Installation of control panel on suitable foundation including all material and labour for high mast	set	3085.00	3.00	9255
51	Fixing and stringing of copper wire RED, YELLOW, BLACK, BLUE and Green	Mtr	5.00	1100.00	5500
52	Fixing of 6/5/4 way bracket on platform	Nos.	24.50	8.00	196
53	Supply and fixing of crimped terminal luggs to suit 4C*16/4C*25/4C*35/4C*50 sq. mm LT UG cable	set	33.00	179.00	5907
54	Supply and fixing of cable gland to suit 4C*16/4C*25/4C*35/4C*50 sq. mm LT UG cable	set	123.00	23.00	2829
55	supply and fixing of cable gland for 4*16 sq.mm cable	No	14.00	8.00	112
56	Conncting of circuit by using 2*4 sqmm and 1.5 sqmm	Mtr	6.00	300.00	1800
No. of Items Fifty - Six only	SCHEDULE "E2" Departmental Value				2069968

SECTION-10

FORMAT OF BANK GUARANTEE FOR SECURITY DEPOSIT ETC.,

INDEX

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NOTE: This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

All italicized text is for guidance how to prepare the various forms and shall be deleted from the final documents.

FORMAT OF BANK GUARANTEE FOR SECURITY DEPOSIT

To,.....(Name of the Employer)
.....(Address of the Employer).

Whereas(Name and Address of the contractor) (herein after called the Contractor) has undertaken, in pursuance of contract no.....
Dated:.....(Name of the contract and brief description of the work) (herein after called the Contract)

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of Rs. _____ [amount of guarantee]
Rupees _____ [in words], and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until 28 days from the date of expiry of the Defects Liability Period.

Signature and seal of the guarantor _____
Name of Bank _____
Address _____
Date _____

FORM OF BANK GUARANTEE FOR PERFORMANCE SECURITY

(On non-judicial stamp paper of the appropriate value in accordance with stamp Act. The stamp paper to be in the name of Executing Bank).

From:

Name and Address of the Bank.....
.....

To:

The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
"Samparka Soudha", 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road,
Rajajinagar 1st Block,
Bangalore - 560 010

WHEREAS, Rail Infrastructure Development Company (Karnataka) Limited, hereinafter called the **Employer**, acting through **[Insert Designation and address of the Employer's Representative]**, has accepted the bid of **[Insert Name and address of the Contractor]**, hereinafter called the **Contractor**, for the work of **[Insert Name of Work]**, vide Notification of Award No **[Insert Notification of Award No...]**
AND

WHEREAS, the contractor is required to furnish Performance Security for the sum of **[Insert Value of Performance Security required]**, in the form of bank guarantee, being a condition precedent to the signing of the contract agreement.

WHEREAS, **[Insert Name of the Bank]**, with its Branch **[Address]** having its Headquarters office at **[Address]**, hereinafter called the **Bank**, acting through **[Designation(s) of the authorised person of the Bank]**, have, at the request of the **[Insert name of the JV partner]**, a JV partner on behalf of the contractor, agreed to give guarantee for performance security and additional performance security as hereinafter contained:

- 1 KNOW ALL MEN by these present that I/We the undersigned **[Insert name(s) of authorized representatives of the Bank]**, being fully authorized to sign and incur obligations for and on behalf of the Bank, hereby, unconditionally and irrevocably guarantee to pay the Employer the full amount in the sum of **[Insert Value of Performance Security required]** as above stated.
- 2 The Bank undertakes to immediately pay on presentation of demand by the Employer any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Employer on the Bank shall be final, conclusive and binding, absolute and unequivocal notwithstanding any disputes raised/ pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Employer of Bank.

- 3 On payment of any amount less than aforementioned full amount, as per demand of the Employer, the guarantee shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the Employer.
- 4 The Bank shall pay the amount as demanded immediately on presentation of the demand by Employer without any reference to the contractor and without the Employer being required to show grounds or give reasons for its demand or the amount demanded.
5. The Bank Guarantee shall be unconditional and irrevocable.
- 6 The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Contractor.
- 7 The Bank agrees that no change, addition, modifications to the terms of the Contract Agreement or to any documents, which have been or may be made between the Employer and the Contractor, will in any way release us from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification to the Bank.
- 8 This guarantee is valid and effective from the date of its issue, which is ***[insert date of issue]***. The guarantee and our obligations under it will expire on ***[Insert the date twenty-eight days after the expected end of defect liability period]***. All demands for payment under the guarantee must be received by us on or before that date.
- 9 The Bank agrees that the Employers right to demand payment of aforementioned full amount in one instance or demand payments in parts totaling up to the aforementioned full amount in several instances will be valid until either the aforementioned full amount is paid to the Employer or the guarantee is released by Employer before the Expiry date.
- 10 The Bank agrees that its obligation to pay any amount demanded by the Employer before the expiry of this guarantee will continue until the amount demanded has been paid in full.
- 11 The expressions Bank and Employer herein before used shall include their respective successors and assigns.
- 12 The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the employer. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.
- 13 The Guarantee shall be in addition to and without prejudice to any other security Guarantee (s) of the contractor in favour of the Employer available with the Employer. The Bank, under this Guarantee, shall be deemed as Principal Debtor of the Employer.
14. This guarantee shall be valid for 28days from the date of expiry of defect liability period.

Date

Place.....

.....

[Signature of Authorized person of
Bank/Guarantor]

.....
[Name in Block letters]

.....
[Designation]

.....
[P/Attorney] No.

.....
Bank's Name and Seal

[P/Attorney] No.....

Witness:

1. *Signature*
Name & Address & Seal

2. *Signature*
Name & address & Seal

Note :

1. *All italicized text is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.*

2. *In case the guarantee is issued by a foreign Bank, which does not have operations in India, the said bank shall have to provide a counter-guarantee by State Bank of India.*

3. *In case the Contractor is a JV, the Performance Security is required to be furnished on behalf of the JV in favour of the Employer by the JV Partners in proportion of their respective percentage share specified in the JV Agreement. The percentage share of M/s **[Insert Name of the JV Partner]** in the JV is **[Fill share % in the JV]** percent. All the Bank Guarantee of JV Partners are liable to be encashed cumulatively.*

FORM OF BANK GUARANTEE FOR ADDITIONAL PERFORMANCE SECURITY

(On non-judicial stamp paper of the appropriate value in accordance with stamp Act. The stamp paper to be in the name of Executing Bank)

From:

Name and Address of the Bank.....

To:

The Managing Director,
 Rail Infrastructure Development Company (Karnataka) Limited,
 "SamparkaSoudha" , 1st Floor,
 B.E.P Premises (Opp. Orion Mall),
 Dr. Rajkumar Road,
 Rajajinagar 1st Block,
 Bangalore - 560 010

WHEREAS, Rail Infrastructure Development Company (Karnataka) Limited, hereinafter called the **Employer**, acting through **[Insert Designation and address of the Employer's Representative]**, has accepted the bid of **[Insert Name and address of the Contractor]**, hereinafter called the **Contractor**, for the work of **[Insert Name of Work]**, vide Notification of Award No. **[Insert Notification of Award No.]**.

AND

WHEREAS, the contractor is required to furnish Performance Security for the sum of **[Insert Value of Performance Security required]**, in the form of bank guarantee, being a condition precedent to the signing of the contract agreement.

WHEREAS, **[Insert Name of the Bank]**, with its Branch **[Address]** having its Headquarters office at **[Address]**, hereinafter called the **Bank**, acting through **[Designation(s) of the authorised person of the Bank]**, have, at the request of the **[Insert name of the JV partner]**, a JV partner on behalf of the contractor, agreed to give guarantee for performance security and additional performance security as hereinafter contained:

- 1 KNOW ALL MEN by these present that I/We the undersigned **[Insert name(s) of authorized representatives of the Bank]**, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee to pay the Employer the full amount in the sum of **[Insert Value of Performance Security required]** as above stated.

- 2 The Bank undertakes to immediately pay on presentation of demand by the Employer any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Employer on the Bank shall be final, conclusive and binding, absolute and unequivocal notwithstanding any disputes raised/ pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Employer of Bank..
- 3 On payment of any amount less than aforementioned full amount, as per demand of the Employer, the guarantee shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the Employer.
- 4 The Bank shall pay the amount as demanded immediately on presentation of the demand by Employer without any reference to the contractor and without the Employer being required to show grounds or give reasons for its demand or the amount demanded.
5. The Bank Guarantee shall be unconditional and irrevocable.
- 6 The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Contractor.
- 7 The Bank agrees that no change, addition, modifications to the terms of the Contract Agreement or to any documents, which have been or may be made between the Employer and the Contractor, will in any way release us from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification to the Bank.
- 8 This guarantee is valid and effective from the date of its issue, which is ***[insert date of issue]***. The guarantee and our obligations under it will expire on ***[Insert the date twenty-eight days after the expected end of defect liability period]***. All demands for payment under the guarantee must be received by us on or before that date.
- 9 The Bank agrees that the Employers right to demand payment of aforementioned full amount in one instance or demand payments in parts totaling up to the aforementioned full amount in several instances will be valid until either the aforementioned full amount is paid to the Employer or the guarantee is released by Employer before the Expiry date.
- 10 The Bank agrees that its obligation to pay any amount demanded by the Employer before the expiry of this guarantee will continue until the amount demanded has been paid in full.
- 11 The expressions Bank and Employer herein before used shall include their respective successors and assigns.
- 12 The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the employer. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.
- 13 The Guarantee shall be in addition to and without prejudice to any other security Guarantee (s) of the contractor in favour of the Employer available with the Employer. The Bank, under this Guarantee, shall be deemed as Principal Debtor of the Employer.

Date

Place.....

.....

[Signature of Authorised person of Bank]

.....

[Name in Block letters]

.....
[Designation]

[P/Attorney] No.

.....

.....
Bank's Seal

[P/Attorney] No.....

Witness:

3. Signature
Name & Address & Seal

4. Signature
Name & address & Seal

Note :

- 1 All italicized text is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.
- 2 In case the guarantee is issued by a foreign Bank, which does not have operations in India, the said bank shall have to provide a counter-guarantee by State Bank of India.
- 3 In case the Contractor is a JV, the Performance Security is required to be furnished on behalf of the JV in favour of the Employer by the JV Partners in proportion of their respective percentage share specified in the JV Agreement. The percentage share of M/s **[Insert Name of the JV Partner]** in the JV is **[Fill share % in the JV]** percent. All the Bank Guarantee of JV Partners are liable to be encashed cumulatively.

ADVANCE PAYMENT SECURITY

(On non-judicial stamp paper of appropriate value in accordance with stamp Act. The stamp paper to be in the name of Executing Bank)

From

[Name and Address of the Bank]

To

The Managing Director,
Rail Infrastructure Development Company (Karnataka) Limited,
"Samparka Soudha" , 1st Floor,
B.E.P Premises (Opp. Orion Mall),
Dr. Rajkumar Road,
Rajajinagar 1st Block,
Bangalore - 560 010

Beneficiary/Employer: Rail Infrastructure Development Company (Karnataka) Limited.

Guarantee No.: *[.....reference number of the guarantee.....]* **Dated:** *[.....]*

WHEREAS, Rail Infrastructure Development Company (Karnataka) Limited (**hereinafter called the Employer**) has entered into Contract No. *[.....reference number of the Contract.....]* dated *[.....]* for the execution of *[name of the contract]* (**hereinafter called the Contract**) with *[.....name of the Contractor.....]* (**hereinafter called the Contractor**).

WHEREAS, according to the Conditions of the Contract, an advance payment is admissible to the contractor against submission of bank guarantee(s).

At the request of the Contractor, we *[.....name of the Bank.....]* with our branch at *[.....address.....]*, having our Head Office at *[.....address.....]* (**hereinafter called the Bank**) have, at the request of *[.....Insert name of the JV partner.....]*, a JV partner on behalf of the Contractor, agreed to give the said guarantee as hereinafter contained:

-
1. KNOW ALL MEN by these present that I/We the undersigned [*....Insert name(s) of authorized representative(s) of the Bank....*], being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantees

to pay the Employer the sum of Rs.*[....value in figure....]*(Rupees [*....value in words....*]
only(hereinafter called the Full Amount).
 2. The Bank undertakes to immediately pay to the Employer, without any demur, reservation or recourse, any amount up to and including aforementioned full amount upon first written demand/demands from the Employer.
 3. On payment of any amount less than aforementioned full amount, as per demand of the Employer, the guarantee shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the Employer.
 4. The Bank shall pay the amount so demanded without any reference to the contractor and without the Employer being required to show grounds or give reasons for its demand or the amount demanded.
 5. The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank, the Contractor or the Employer.
 6. The Bank agrees that no change, addition, modification to the terms of the Contract Agreement or to any document, which have been or may be made between the Employer and the Contractor, will in any way release us from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification to the Bank.
 7. This guarantee is valid and effective from the date of it's issue, which is [*....date of issue....*]. The guarantee and our obligations under it will expire on dated*[....Please refer note 4 & 5....]*. All demands for payment under the guarantee must be received by us on or before that date.
 8. The Bank agrees that the Employer's right to demand payment of aforementioned full amount in one instance or demand payments in parts totaling up to the aforementioned full amount in several instances will continue until either the aforementioned full amount is paid to the Employer or the guarantee validity period expires.
 9. The Bank agrees that it's obligation to pay any amount demanded by the Employer before the expiry of this guarantee will continue until the amount demanded has been paid in full.

- 10. The expressions Bank and Employer herein before used shall include their respective successors and assigns.
- 11. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the employer. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.

Dated[.....]

Place[.....]

.....
(Signature of the Authorized Person of the Bank)

.....
(Name in Block Letters)

.....
(Designation)

.....
(Bank's Seal)

.....
(Authorization No.)



Witness:

1.
Signature, Name & Address

2.
Signature, Name & Address

Note:

- 1. *All italicized text in brackets [...text...] is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.*
- 2. *In case the guarantee is issued by a foreign Bank, the said bank shall have operations in India and should be issued by Indian operations branch of the said bank.*
- 3. **Mobilization Advance**

(a) For Single Entity

For each Installment of Advance, two Bank Guarantees of equal amounts (each equal to half of the first installment of advance plus 10%) shall be furnished. Each Bank Guarantee shall be valid for the stipulated completion period of the contract.

OR

(b) For JV/Consortium

For each Installment of Advance, individual JV/Consortium partner shall furnish Bank Guarantee equal to his share in the installment of Advance plus 10%. Each Bank Guarantee shall be valid for the stipulated completion period of the contract.

4. Advance against Plant and Machinery

(a) For Single Entity

For each Installment of Advance, a Bank Guarantee equal to the installment of advance plus 10% shall be furnished. The Bank Guarantee shall be valid for the stipulated completion period of the contract.

OR

(b) For JV/Consortium

For each Installment of Advance, individual JV/Consortium partner shall furnish a Bank Guarantee equal to his share in the installment of advance plus 10%. Each Bank Guarantee shall be valid for the stipulated completion period of the contract.

**INDEMNITY BOND FOR THE SAFE CUSTODY OF THE
MATERIALS SUPPLIED BY THE CONTRACTOR**

(To be executed on Non-Judicial Stamp Paper of Appropriate Value and notarized)

THIS INDEMNITY BOND made on this _____ day of _____ 20__ by _____ (*insert the name of the Contractor and its registered address*) (hereinafter called "the Contractor") which expression shall where the context do admits or implies be deemed to include its executors, administrators and assigns, in favour of the Rail Infrastructure Development Company (Karnataka) Limited, Samparka Soudha" ,
1st Floor, B.E.P Premises (Opp. Orion Mall), Dr. Rajkumar Road, Rajajinagar 1st Block, Bangalore - 560 010 (hereinafter called "K RIDE") on the other part.

WHEREAS by an Agreement/Letter of Acceptance No. _____ dated _____ (hereinafter called "the said agreement"), the Contractor has agreed to execute the _____ (*Name of Work*) (hereinafter called "the Works") .

AND WHEREAS the Contractor has submitted to K RIDE/ the Engineer for payment on materials procured by him and brought to the site of the Works or his workshop for use in the Works.

AND WHEREAS K RIDE/ the Engineer has agreed to make advance/stage payment to the Contractor the total sum of Rs. _____ (*in Figures*) [Rupees _____ (*in Words*)] in Interim Payment Certificate (IPC) No. _____, the quantities and other particulars of which are detailed in this IPC for the said works signed by the Contractor on _____ for the Materials brought by the Contractor to site of the works. Brief details are also mentioned in schedule 1 appended hereto.

NOW THIS INDEMNITY BOND WITNESS that in pursuance of the said agreement and in consideration of the sum of Rs. _____ (*in Figures*) _____ (*in Words*) on or before the execution of these presents to be paid to the Contractor by K RIDE so aforesaid, the Contractor doth hereby covenant and agree with K RIDE and declare as follows: -

1. That the said sum of Rs. _____ (*In Figures*) _____ (*in Words*) to be paid by K RIDE to the Contractor as aforesaid shall be utilized by the Contractor in or towards the execution of the said works and for no other purpose whatsoever.
2. That the Materials detailed in the said IPC which have been offered to and accepted by K RIDE/ the Engineer, are absolutely the Contractor's own property and free from encumbrances of any kind and the Contractor will not make any application for or receive any further payment on the Materials which are not absolutely his own property and free from encumbrances of any kind, the Contractor indemnifies the K RIDE against all claims on any Materials in respect of which payment is to be made to him as aforesaid.
3. That the Contractor undertakes that the Materials shall be used exclusively for the performance / execution of the Contract strictly in accordance with the terms and conditions of the Contract and no

part of the Materials shall be utilized for any other work or purpose whatsoever.

4. That the Contractor is obliged and shall remain absolutely responsible for the safe transit / protection and custody of the Materials against all risks whatsoever including acts of the God till the Materials are duly incorporated in the works, commissioned and are taken over by K RIDE/Railway (including surplus Materials, if required as instructed by K RIDE/ the Engineer) in accordance with the terms of the Contract. The Contractor undertakes to keep K RIDE harmless against any loss or damage that may be caused to the Materials.
5. That the said Materials shall not on any account be removed from the site of the works except with the written permission of K RIDE/ the Engineer. Further, K RIDE/ the Engineer shall always be free at all times to take possession of the materials in whatever form the materials may be in, if in its opinion, the Materials are likely to be endangered, mis-utilized or converted to uses other than those specified in the Contract, by any acts or omission or commission on the part of the Contractor or any other person or on account of any reason whatsoever and the Contractor binds himself and undertakes to comply with the directions of demand of K RIDE to return the Materials without any demur or reservation.
6. That the said materials shall, at all times, be open to inspection by K RIDE/ the Engineer or any authorized representative. In the event of the said material or any part thereof at any time being found to be in lesser quantity than for which payment has been released or the same has been stolen, destroyed or damaged or becoming deteriorated, the Contractor will forthwith replace the same or repair and make good the same as required by K RIDE/ the Engineer.
7. That making payment does not mean that Materials are of required specifications and quality or that whole of the quantity brought to site by Contractor will be used in the work. The Contractor is fully responsible for the materials to conform to required quality and specification and if at any time K RIDE/ the Engineer do not find the material satisfactory, the Contractor at his own cost would replace these. K RIDE/ the Engineer would be at liberty to recover cost of these from any dues of the Contractor. Also, any Materials which are in excess of what is finally required under the contract would be the Contractor's property without any liability on K RIDE/ the Engineer who would recover the cost of this from the Contractor.
8. That this INDEMNITY BOND is irrevocable. If at any time, any loss or damage occurs to the Materials or the same or any part thereof is mis-utilized in any manner whatsoever, then the Contractor hereby agrees that the decision of K RIDE/ the Engineer as to assessment of loss or damage to the Materials shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and/or damaged Materials at its own cost and/or shall pay the amount of loss to K RIDE without any demur, reservation or protest. This is without prejudice to any other right or remedy that may be available to K RIDE/ the Engineer against the Contractor under the Contract or under this Indemnity Bond
9. That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of those presents, the total amount of the payment shall immediately on the happening of such default be recovered by K RIDE/ the

Engineer from any dues of Contractor. It is also clearly understood by the Contractor that non-observance of the obligations under this Indemnity Bond by the Contractor shall inter-alia constitute a criminal breach of trust on the part of the Contractor for all intents and purpose including legal / penal consequences.

10. IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorized representative, the day, month and year first above mentioned.

11. SCHEDULE 1

Particulars of the Materials	Quantity	Value of the Materials

Signed, Sealed and Delivered by the said Contractor

Dated:
 Place:
 (Contractor's Name)
 (AUTHORISED SIGNATORY)
 SEAL OF COMPANY

IN THE PRESENCE OF:

WITNESS: SIGNATURE _____
 NAME: _____
 ADDRESS : _____

Note:

The contractor has the option to submit the INDEMNITY BOND to cover all the items and quantities of Materials of stage payment or to submit INDEMNITY BOND each time the stage payment is to be taken or Materials advance is to be taken.

No. _____ Office of the.....
 Date:.....

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