GUJARAT INDUSTRIES POWER COMPANY LIMITED
(Surat Lignite Power Plant)
AT & POST NANI NAROLI, TALUKA: MANGROL, DIST: SURAT, PIN 394110 (GUJARAT)
Phone Nos.: EPABX (02629) 261063 to 261072, fax Nos.: (02629) 261112, 261080

TENDER DOCUMENTS FOR;

Surat Lignite Power Plant - 4X125 MW, Unit # I to IV: Civil works for Construction of foundations, flooring & associates General Civil works for 02 nos. of new Structural Storage Sheds (Pre-Engineered Building - PEB) near existing Warehouse (Year: 2026-27).

Bid No.: SLPP/Civil/WH/Sheds/2026
((n)Procure E-Tender ID: 312517)

INSTRUCTIONS TO BIDDERS & CONDITIONS OF CONTRACT

INDEX

NOTE: All the Bidders should study entire Tender documents carefully including scope & special conditions of contract with penalty / LD clauses and may carry out Plant visit before quoting & submitting their online Bid to understand scope of work and its importance.

NOTICE INVITING TENDER (NIT)
TENDER NO.: SLPP/Civil/WH/Sheds/2026

Name of work	Surat Lignite Power Plant - 4X125 MW, Unit # I to IV: Civil works for Construction of foundations, flooring & associates General Civil works for 02 nos. of new Structural Storage Sheds (Pre-Engineered Building - PEB) near existing Warehouse (Year: 2026-27).
Estimated value of work	**Rs.1,36,82,807.06 (including GST)**
Place of work	Surat Lignite Power Plant, Village: Nani Naroli, Taluka: Mangrol, Dist.: Surat - 394112 (Gujarat).
Quantity	The successful Bidder will be awarded this contract involving total quantities of various items as mentioned against item descriptions in BOQ (Section-E).
Contract / Completion period	The contract / completion period for scope of works *of both the sheds shall be* 06 (Six) Months from the date of award of contract (except 03 months of peak Monsoon, i.e. July, August & September). However, i. Excavation, Construction of RCC Foundation, Pedestals & Beams, Backfilling, etc... *for both the sheds* in all respect including ready for handing over to PEB agency for erection of PEB Structure: 03 Months from the date of release of Construction Drawings for Foundation, Pedestals & Beams (30 days considered for providing construction drawings) ii. Balance Civil works *for both the sheds* as per scope of work: 02 Months from the date of handing over of front. For details, refer subsequent clause no. 16 (Section-A) & clause no. 3 (Section-D).
EMD	**Rs.87,000/-** (Rupees Eighty-Seven Thousand only) as per details mentioned hereinunder in clause no. 7 of Instructions to Bidders (Section-A).
Cost of tender document / tender fee	**Rs.2,950/-** (Rupees Two Thousand Nine Hundred Fifty only), nonrefundable, inclusive of applicable GST, to be submitted **through RTGS or through online payment gateway** from website: www.gipcl.com as per details mentioned hereinunder in clause no. 7 of Instructions to Bidders.
Site Visit	Site visit at GIPCL (Surat Lignite Power Plant), Village: Nani Naroli, Taluka- Mangrol, Dist. Surat - 394112 (Gujarat) before submission of bid as per details mentioned hereinunder in clause no. 4 of Instructions to Bidders (Section-A).
Availability of online e-Tender document	On website: https://tender.nprocure.com or https://gipcltender.nprocure.com and also www.gipcl.com up to 30/06/2026, 17:30 hrs.

Last date of online submission of offer	Through website: https://tender.nprocure.com or https://gipcltender.nprocure.com up to 30/06/2026, 17:30 hrs.
Submission of EMD (as above) and online Tender fee transaction detail along with supporting documents for techno-commercial bid in physical form in sealed cover.	**On or before 16:00 hrs. of due date of bid submission during working days** at office of Surat Lignite Power Plant, Nani Naroli, Dist. Surat.
E-Reverse Auction	E-Reverse Auction will be executed through website: https://e-auction.nprocure.com (Schedule will be intimated later on to eligible bidders).

NOTES:

1. Amendment / corrigendum of the tender document, forms, schedules, etc... may be done any time by the GIPCL during the period of publication of tender in the website. The Bidders are required to visit the website regularly till the last date & time of Bid submission.
2. GIPCL reserves the right to reject any or all the tenders/bids without assigning any reason thereof.
3. The Bidders are required to quote the rate strictly as per the terms and conditions mentioned in the tender document, adhering to technical specifications as well.
4. Bidders are advised to submit their online bid well in advance to avoid any unexpected last moment technical issues with (n)procure site. In case of any issues /difficulties cropping up during online bid submission / uploading / submission of documents, etc…, bidders are requested to inform these well in advance (at least two days before closing of tender) to (n) Code Solutions as mentioned in Section-B of tender as well as to GIPCL email to rbsoni@gipcl.com
5. The Bidders are required to submit their Bid offer online only through the website https://tender.nprocure.com or https://gipcltender.nprocure.com **(E-Tender ID: 312517).**
6. EMD either in physical form by way of DD/BG or copies of payment receipts of EMD and Tender fee paid through RTGS/online along with other supporting documents are to be submitted in physical form in sealed cover/envelop at the following address on or before date & time mentioned in above NIT. At the top of envelop, tender notice no.: **SLPP/Civil/WH/Sheds/2026** should be superscripted.

   Chief General Manager (Thermal)
   Gujarat Industries Power Company Limited
   Surat Lignite Power Plant
   At Village: Nani Naroli,
   Taluka: Mangrol,
   Dist.: Surat - 394 112, Gujarat.
   Phone: (02629) 261063-72. E-Mail: rbsoni@gipcl.com

SECTION-A
INSTRUCTIONS TO BIDDERS

1.1 DEFINITION OF TERMS

1.1.1 OWNER / PURCHASER shall mean the GUJARAT INDUSTRIES POWER CO. LTD. (GIPCL) the client on whose behalf the enquiry is issued by the PROJECT CONSULTANT and shall include his successors and assigns as well as his authorized officers / representatives.

1.1.2 PROJECT CONSULTANT shall mean M/s. Vishvakarma Consultancy Services Pvt. Ltd., Vadodara (VCSPL) or their duly authorized representatives, who are the CONSULTANTS appointed by the OWNER / PURCHASER for the ‘Project’.

1.1.3 BIDDER / TENDERER shall mean the firm / party who quotes against an enquiry.

1.1.4 VENDOR / CONTRACTOR / FABRICATOR shall mean the successful BIDDER whose bid has been accepted by the OWNER / PURCHASER and on whom the ‘Contract’ or ‘Purchase Order’ is placed by the OWNER / PURCHASER and shall include his heirs, legal representatives, and successors and permitted assigns.

1.1.5 SUB-VENDOR / SUB-CONTRACTOR / SUB-FABRICATOR shall mean the person named in the contract undertaking a part of the work or any person to whom a part of the contract has been sublet with the consent in writing of the OWNER / PURCHASER and shall include his heirs, legal representatives, successors and permitted assigns.

1.1.6 MANUFACTURER refers to a person or firm who is the producer and furnisher of material or designer and fabricator of equipment to either the OWNER / PURCHASER or the VENDOR / CONTRACTOR or both under the contract.

1.1.7 OWNER shall mean other than successful BIDDERs whose bids have been accepted by the OWNER / PURCHASER and to whom the orders have been placed by the OWNER / PURCHASER and shall include their heirs, legal representatives, successors and permitted assigns.

1.1.8 INSPECTOR / Engineer-in-charge shall mean the authorized representative appointed by the OWNER or the PROJECT CONSULTANT for purposes of inspection of materials / equipment / works.

1.1.9 Project shall mean the project specified in the project information of the specification through this Tender Inquiry No.: **SLPP/Civil/WH/Sheds/2026**.

1.1.10 Site shall mean the actual place of the proposed project as detailed in the specification or other place where work has to be executed under the contract.

1.1.11 Month shall mean calendar month.

1.1.12 Specification shall mean collectively all the terms and stipulations contained in those portions of the contract known as general conditions, the specifications and such amendments, revisions, deletions or all written agreements made or to be made pertaining to the method and manner of performing the work or to the quantities and qualities of the materials to be furnished under this contract.

1.1.13 Bid shall mean the proposal / document that the BIDDER submits in the requested and specified form in the specification.

1.1.14 Plant or Equipment and work or works shall mean respectively the goods to be supplied and services to be provided by the VENDOR / CONTRACTOR / FABRICATOR under the Purchase Order or Contract.

1.1.15 Contract or Work Order shall mean the order and associated specifications executed by the OWNER / PURCHASER and the VENDOR / CONTRACTOR including other documents agreed between the parties or implied to form a part of the contract.

1.1.16 The word Contract Price shall mean either the lump sum named in the contract agreement or the approximate total of all cost as estimated from unit prices and estimated quantities set forth in the contract, which are to be paid to the CONTRACTOR for the work to be done under this contract.

1.1.17 Date of Contract shall mean the calendar date on which the OWNER / PURCHASER and VENDOR / CONTRACTOR / FABRICATOR have signed the contract. Effective date of contract shall mean the calendar date on which the OWNER / PURCHASER has issued to the VENDOR the Letter of Intent.

1.1.18 Contract Period shall mean the period during which the contract shall be executed as agreed between VENDOR / CONTRACTOR / FABRICATOR and OWNER / PURCHASER in the contract and it starts with the date of Letter of Intent.

1.1.19 Guarantee Period shall mean the period during which the Plant or Equipment shall give the same performance as guaranteed by the VENDOR in the schedule of guarantee as in the Specification.

1.1.20 Approved and Approval where used in the specification shall mean, respectively, approved by and approval of the OWNER / PURCHASER or the PROJECT CONSULTANT.
When the words Approved, Approval, subject to Approval, Satisfactory, Equal to, Proper Requested, As directed, Where Directed, When Directed, determined by, Accepted, Permitted, or words and phrases of like import are used, the approval, judgment, direction etc. is understood to be function of the OWNER / PURCHASER or the PROJECT CONSULTANT.

1.1.21 “PROJECT CONSULTANT’s instructions” shall mean any drawings and / or instructions oral and / or in writing, details, direction and explanations issued by the PROJECT CONSULTANT or the OWNER / PURCHASER from time to time during the Contract Period.

1.1.22 Writing shall include any manuscript, typewritten or printed statement, email, soft copy, under or over signature and / or seal as the case may be.

1.1.23 ‘Notice in Writing’ or ‘Written Notice’ shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post or speed post or courier or email to the last known private or business address or registered office of the addressee or registered email id and shall be deemed to have been received when in the ordinary course of post it would have been delivered.

1.1.24 “CONTRACTOR’s Works” or “MANUFACTURER’s Works” shall mean and include the land and other places which are used by the VENDOR / CONTRACTOR / FABRICATOR or SUB-VENDOR/ SUB-CONTRACTOR / SUB-FABRICATOR for the manufacture of ‘Equipment or performing the ‘Works’.

1.1.25 ‘Virtual Completion’ shall mean that all work is completed as directed and the ‘Site’ is cleared to the satisfaction of the OWNER / PURCHASER / PROJECT CONSULTANT.

1.1.26 ‘Commercial Use’ shall mean that use of the ‘Equipment or ‘Work’ which the ‘Contract’ contemplates or that for which ‘Equipment’ or ‘Work’ is commercially capable.

1.1.27 Word “importing persons” shall include Firms, companies, corporations and other bodies, whether incorporated or not.

1.1.28 Word “import” (singular only) shall also include the plural and vice versa, where the context requires.

1.1.29 ‘Drawings’ shall mean all:

a) Drawings furnished by the OWNER / PURCHASER or the PROJECT CONSULTANT as a basis for proposals.

b) Supplementary drawings furnished by the OWNER / PURCHASER or the PROJECT CONSULTANT to clarify and to define in greater detail the intent of the ‘Contract’.
c) Drawings submitted by the VENDOR with his proposal provided such drawings are acceptable to the OWNER / PURCHASER or the PROJECT CONSULTANT:
d) Drawings furnished by the OWNER / purchaser or the PROJECT CONSULTANT to the VENDOR during the progress of work.
e) Engineering data and drawings submitted by the VENDOR during the progress of the work provided such drawings are acceptable to the PROJECT CONSULTANTS.
f) All drawings attached to the contract agreement and made a part thereof.

1.1.30 ‘Act of Insolvency’ shall mean any Act of Insolvency as defined by the Presidency Towns Insolvency Act, or the Provisional Insolvency Act or any amending statute.

1.1.31 Wherever figures are given in this contract under the word ‘Elevation’ or an abbreviation of it or where figures representing elevations are given, they shall mean the elevation relative to the arbitrary permanent bench mark fixed by the PROJECT CONSULTANT for the particular work, located as shown on site plan or datum level established by the OWNER.

1.1.32 Wherever in this contract, the words Directed, Required, Ordered, Designated, Considered Necessary, Prescribed or words like import are used, it shall be understood that the direction, requirement, permission, order, designation or prescription, etc... of the PROJECT CONSULTANT is intended. Similarly, the works ‘Approved, Acceptable, Intended, Satisfactory, or words of like import shall mean approved by or acceptable or satisfactory to the PROJECT CONSULTANT, unless another meaning is plainly intended.

1.1.33 Award of Contract shall mean the date of issue of the letter of intent.

1.1.34 Abbreviations used for the unit of various items are as stated below:

MT	=	tones = 1000 kgs;
Kg or KG	=	Kilogram
Rmt	=	running meter
RM	=	Running meter
R.Mtr.	=	Running meter
M	=	Meter
CUM	=	cubic meter
SQM	=	square meter
M2	=	square meter
No.	=	Number
Km	=	kilometer
LS	=	Lump sum
FT2	=	Square foot
Sqft	=	Square foot
INCH2	=	Square inch
mm	=	Millimeter

1.2 PLANT SYNOPSIS

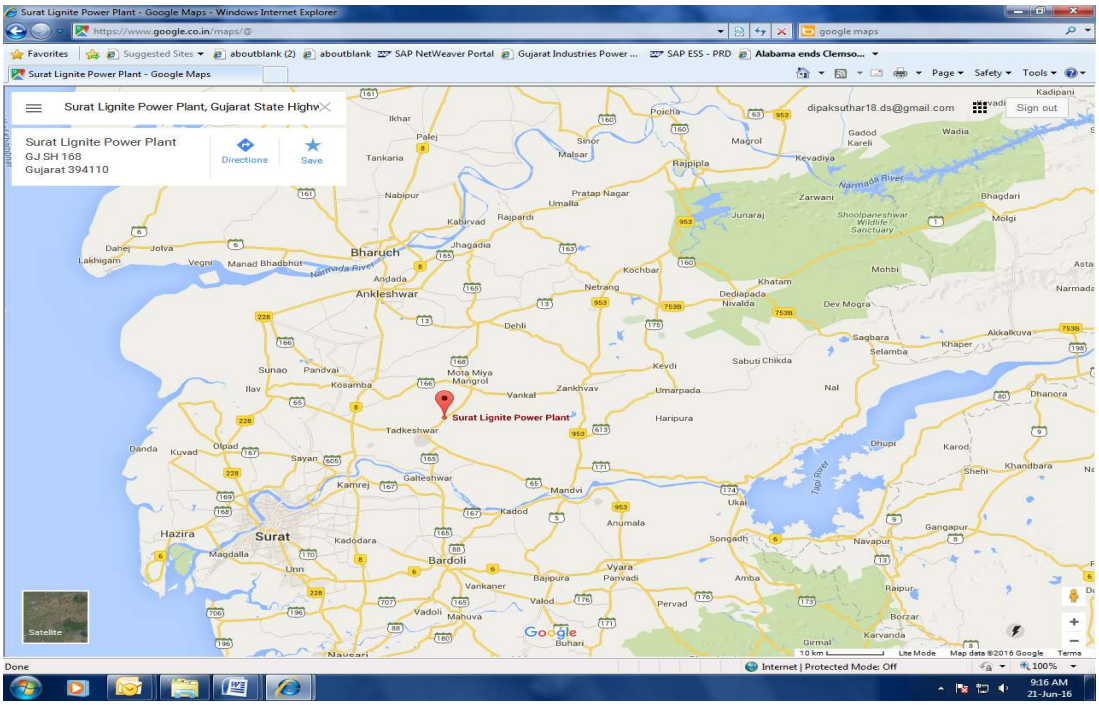
Gujarat Industries Power Company Limited (GIPCL) (henceforth be named Company/GIPCL), is a Premier Power Utility in the State of Gujarat with an installed capacity of 1859.40 MW comprising of various conventional and renewable projects.

GIPCL commissioned its first power project; a 145 MW gas based combined cycle power plant in year 1992 at Vadodara. It expanded its capacity 165 MW Naptha & gas based Combined Cycle Power Plant at Vadodara in year 1997.

Surat Lignite Power Plant (SLPP) with four units of 125 MW installed capacity each is located at Village: Nani Naroli, Taluka: Mangrol, District: Surat in Gujarat. GIPCL has also operating its own captive Lignite and Lime Stone Mines close to the Power Plant. The Power Plant is based on Circulating Fluidized Bed Combustion (CFBC) technology for the Boilers, where Lignite is burnt along with Lime Stone in the Combustor of the Boiler. It also commissioned 05 MW solar power station at SLPP in year 2012.

GIPCL has successfully commissioned 937 MW Solar Generating Capacity spread across various locations in Gujarat and 112.40 MW Wind Generating Capacity in the Saurashtra & Kutch region of Gujarat.

Surat Lignite Power Plant (SLPP) is accessible by road from Kim and Kosamba, which are on Mumbai-Ahmadabad highway. From Kosamba, SLPP is around 32 KM, out of which 27 KM is part of the National & State Highway and balance 5 KM is District Road. From Kim, SLPP is around 18 KM, out of which 13 KM is the State Highway and balance 5 KM is District Road. The nearest Broad-Gauge Railway Line is at Kim, which is around 21 KM from the SLPP. Surat is approximately 50 KM from the SLPP. Location Map for SLPP is as under.



The Company invites open online tender offers from experienced and resourceful contractors for the execution of Civil works (foundations, footings, flooring, associated area development works, etc…) at Surat Lignite Power Plant (SLPP) for construction of two nos. of Pre-Engineered Building (PEB) Structural Storage Sheds near warehouse.

2. BRIEF SCOPE OF WORK

2.1 General Scope

The scope of work in general comprises all types of **Civil Works**, including but not limited to:

- Area grading and site clearing,
- Excavation, backfilling, and compaction,
- Foundations, plinth protections, drains & flooring,
- Plain and Reinforced Cement Concrete (PCC & RCC) works,
- Masonry works, rubble soling, flooring, plastering,
- Civil painting,
- Reinforcement & shuttering work for foundation, pedestal, plinth beam, lintel beam, drain, coping, column, etc
- Foundation bolt fixing.
- Non-shrink Grouting work.
- Anchor fastening work.
- Expansion joint work.
- Coordination with utility agencies for water and temporary power connections, if required.
- Coordination with PEB agency for proper layout marking, joint verification of layout, anchor bolt alignment/fixing/grouting, etc… for timely completion of entire project for construction of 02 nos. of PEB structural sheds near warehouse.

All works are to be carried out for construction of 02 nos. of PEB structural sheds near warehouse at **Surat Lignite Power Plant (SLPP)**, in accordance with the concept layout plan provided as Bid Drawings with this tender.

CIVIL WORKS FOR PEB STRUCTURE (Up to Finished Floor Level and Other as per Site requirements)

Civil works for the PEB sheds shall be limited **up to finished floor level (FFL), except walls**, including:

- Foundations (isolated/combined/pile, as applicable),
- Ground beams and plinth beams,
- Pedestals including bolt embedments
- Flooring up to finished floor level.
- Approach Ramp
- Plinth protection
- Peripheral drains
- Other Misc. civil works as directed by EIC

Layout:

SHED-1

1. Purpose: Storage of heavy materials with 10 MT capacity EOT Crane.
2. Size: Length 45 Meter, Clear span 25 Meter with Gable Roof without any intermediate support. Total height about 10 Meter and working height 6-7 Meter.
3. Shed to be covered from top/roof and top sides (about 3 Meter for crane protection & to avoid rain water ingress) with Galvalume sheets. All sides open.
4. Plinth level up to 300 mm from OGL.
5. Flooring required for heavy material storage.
6. RCC foundation design required (GIPCL will arrange & provide) based on PEB structure design.
7. SBC at EL (-) 2.500 Meter is 137 KN/M2 (Kilo Newton per Square Meter).

SHED-2

1. Purpose: Only storage of heavy materials by movement of Hydra.
2. Size: Length 45 Meter, Clear span 15 Meter with Gable Roof or shed roof without any intermediate support and height 6 Meter.
3. Shed to be covered from top/roof and top sides (@ 1 Meter) with Galvalume sheets. All sides open.
4. Plinth level up to 300 mm from OGL.
5. Flooring required for heavy material storage.
6. RCC foundation design required (GIPCL will arrange & provide) based on PEB structure design.
7. SBC at EL (-) 2.500 Meter is 137 KN/M2 (Kilo Newton per Square Meter).

- **Quality Assurance & Control**

  All works shall be executed as per IS codes, CPWD specifications, and good industry practices. The contractor shall deploy qualified site engineers and provide all test reports (cube tests, compaction, material test certificates, etc.) as required.

COMMON INFRASTRUCTURE & AREA DEVELOPMENT

- Construction of **internal rigid approach pavement** with fly ash filling & rubble soling.
- Limited open storage yard with fly ash filling & rubble soling, drains, etc…

2.2 Quantities

The quantities mentioned in the **Schedule of Rates (Section-E)** are **indicative only** and subject to change as per actual site conditions and GIPCL requirements and based on finalization of PEB Design Engineering and accordingly Civil Design Engineering & Drawings. The contractor shall be bound to execute any increased or reduced quantity as certified by GIPCL, within the tendered rates and without any claim for extra rates due to variation in quantities.

2.3 Bid Completeness

Bids not covering the **entire scope of work** and **all services** as described in the tender documents shall be liable for rejection without further consideration.

2.4 Miscellaneous Works

All miscellaneous works and incidental items necessary for the **safe, complete, and functional** execution of the job shall be deemed to be included in the contractor’s scope, even if not explicitly mentioned, and shall be executed within the quoted price.

The detailed scope of work is provided under Clause No. 1 of Section-D (Special Conditions of Contract), and the brief technical specifications are outlined in the enclosed Schedule of Rates (Section-E).

3. GENERAL INSTRUCTIONS

3.1 The Bidders who are interested in participating in the tender must read and comply with the instructions and the Terms & Conditions contained in the tender documents.

3.2 The Bids shall be filled in by the Bidders clearly, neatly and accurately. Any alteration, erasures or overwriting shall be liable to make the tender invalid unless the same is neatly carried out and attested over the full signature of Bidder. The decision of the Company to interpret the information and rates filled in by the Bidder shall be final and binding on the Bidder.

3.3 The Bidders are requested to make themselves fully conversant with the General Conditions of Contract, Special Conditions of Contract, Technical Specifications, Site conditions, Safety & Health Aspects and Norms to be observed etc. before submitting their bids so that no ambiguity arises in these respects subsequent to submission of the Bids.

3.4 Before quoting the bid, the Bidder must visit site and should go through the specifications, scope of work etc. and get himself/herself fully conversant with them. The Bid should include cost of mobilization and cost to adhere to all Safety Norms as described in the tender. No relaxation or request for revision of quoted/accepted rates shall be entertained subsequent to the opening of Bid on account of mobilization or Safety costs.

3.5 Bidder has to submit all the information as per required Bid document. Failure to furnish all the information as per required Bid documents or submission of a Bid containing deviations from the contractual terms and conditions, specifications and requirements, shall be rejected.

3.6 The Bids shall be submitted within the time frames set out in the Notice Inviting Tender (‘NIT’) and Bids submitted thereafter shall not be accepted and considered.

3.7 The tender documents shall not be transferable.

3.8 The Bidders are expected to examine all instructions, forms, terms & specifications in the Bid documents and to get fully acquainted themselves with all the conditions and matters which may affect the subject matter of the work/tender or the cost thereof. If any Bidder finds any discrepancies or omissions in the specifications and documents or any doubt in true meaning or interpretation of any part, he shall seek necessary clarifications in writing if required.

3.9 Conditional offers shall not be considered and liable to be rejected.

3.10 The Company reserves the right to extend the deadlines for submission of the Bids by giving amendments.

3.11 During evaluation of Bids the Company may, at its discretion ask the Bidder (s) for clarification of their Bid. The request for clarification and the response shall be in writing and no change in prices or substance of the Bid shall be sought, offered or permitted.

3.12 The Company reserves the right to amend/ modify the Bidding documents at any time prior to the deadline for submission of Bids, either at its own discretion or in response to the clarification requested by a prospective Bidder. In such case, the Company may in its discretion extend the deadline for submission of Bids in order to facilitate the prospective Bidders for incorporating the effect of the amendment in their Bids.

3.13 The Bidders shall bear all costs and expenses associated with the preparation and submission of their respective Bids, to attend meetings or conferences, if any, including any pre-award discussion with the successful Bidder, technical and other presentations etc. and the Company shall not be liable for any expense thereof.

3.14 If the successful Bidder is consortium/joint deed of undertaking of company, the Consortium leader/Bidder shall accept joint and several responsibilities and liabilities for all obligations under the Contract.

3.15 Timely and satisfactory completion of the work and strict adherence to the allotted time frames for jobs shall be the essence of the contract.

3.16 The Company reserves the right to qualify/disqualify any applicant without assigning any reason.

3.17 The Bidder shall be disqualified if any untrue statement or misrepresentation is made in the Bid forms, attachments and other supporting documents submitted by the Bidder.

4. PLANT VISIT

It is prerequisite and necessary for all interested bidders to visit the site/plant after downloading the tender copy to understand the actual working conditions, compliance related to labour, safety etc. before submitting their offer. Failing which, any consequential liabilities arising will be to bidder’s account. The bidders shall examine the site of works and its surroundings at his own responsibility.

The bidders shall collect information that may be necessary for preparing the bid and entering into a contract. All costs and liabilities arising out of the site visit shall be at bidder’s account.

The bidder is deemed to have examined and understood the tender document, obtained his own information in all matters whatsoever that might affect the carrying out the works expressly mentioned or works which may have to be carried out to fulfill his contractual obligation within the scheduled rates and to have satisfied himself to the sufficiency for his offer.

The submission of tender by a contractor implies that he has visited the site and read these instructions, conditions of the contract etc. and has himself aware of the scope, nature of works & specifications of the works to be done, General & Special Terms and Condition. GIPCL will not, therefore after acceptance of contractor’s rate, pay any extra charges for any other reason in case the contractor is found later on to have misjudged the site conditions.

Any error in description or quantity or omission in the contract document shall not vitiate the contract or release the contractor from executing the work comprised in the contract according to scope of works, magnitude of the works, requirement of materials, equipment, tools & tackles, labour, etc. Contractor has to complete the work in accordance with the contract documents irrespective of any defects, omissions or errors that may be found in the contract documents.

BIDDER shall inspect the site, examine and obtain all information required and satisfy himself regarding matters such as access to site, communication, transport, working condition including constraint of work place, working location & its distance, quantum of dusting, temperature, importance of work, round the clock working conditions, available access & approaches, safety requirements, types & approved makes of material requirements, material storage requirements, work permit system, right of way, water logging, high flood level in River, flow of water, during monsoon/dry season in the River/Nallah, the type and number of equipment & facilities required for the satisfactory completion of work, the quantity of various items of the work, the availability of local labour, accommodation, available canteen & medical facilities, requirements & availability of power supply, water supply & rates of material, local working conditions, uncertainties of weather, obstructions & hindrances that may arise, etc which may affect the work or cost thereof, etc… before submission of his Bid.

Ignorance of site conditions shall not be accepted by the GIPCL as basis for any claim for compensation. The submission of a Bid by the BIDDER will be construed as evidence that such an examination was made. Any later claims / disputes in regard to rates quoted/offered shall not be entertained nor considered by the GIPCL.

The rate quoted by BIDDER shall be based on his own knowledge and judgment of the conditions and hazards involved and shall not be based on any representations of the GIPCL Engineer.

It is also desirable to study tender documents thoroughly before site visit.

5. ELIGIBILITY CRITERIA

The following criteria will be adopted for qualifying the Bidders for consideration of the Bid for the further proceeding.

5.1 Bidder should possess minimum **Three years** of experience **during last Six years** in similar nature of jobs, various type of Civil & Infrastructure works like Civil works for (i) Construction of Industrial or Commercial Warehouse, (ii) Construction of Industrial or Commercial Storage Sheds, Construction of Industrial or Commercial Buildings, Multistoried Building, Mega Civil Constructions, etc… including Civil RCC foundations, RCC Pavements/Flooring, etc… for Power Plant, Process Industries, Corporations, Corporate, Institutes, Township and should enclose proof of the same. Bidder shall submit necessary evidence for the same like self-attested copies of work orders/Work Execution/Work Completion certificates from clients. The work completion certificate shall comprise of Order value & Executed value. Bidders should have executed the work directly. The work executed as a sub-contractor or subletting agency shall not be taken in to consideration.

5.2 Bidder should produce **evidence of having successfully completed similar works (as per above clause no. 5.1) during last Six years ending last day of the month previous to the one in which tender is invited**, satisfactory progress of ongoing works etc… secured from clients along with self-attested copies of documentary evidence preferably photo copies of work experience. The experience should be either of the following:

a. **One similar completed/executed work each costing not less than the amount equal to Rs.68,41,403/-.**

OR

b. **Two similar completed/executed works each costing not less than the amount equal to Rs.41,04,842/-.**

OR

c. **Three similar completed/executed works each costing not less than the amount equal to Rs.27,36,561/-.**

Note: For evaluation of the bid the executed value mentioned in the work completion/work in progress certificate will be considered.

Bidder should specifically mention fulfilling of above criteria in his offer along with details of work orders & work completion/execution certificates issued by clients.

5.3 **Tender fee:** The tender fee shall be submitted **through RTGS or through online payment only** as per details provided in clause no. 7 hereinunder. Demand Draft will not be accepted for Tender Fee.

5.4 **EMD:** The EMD shall be submitted in the form of DD/RTGS/online or irrevocable Bank Guarantee given by Bank as described in subsequent clause no. 7.

5.5 Bidder should have separate Employees Provident Fund code number towards registration of firm with RPF commissioner.

5.6 Attested copies of relevant documents duly signed & seal on each & every page shall be submitted. GIPCL may verify the documents, experience certificates issued by concern authority. After opening of technical Bid, if any required attested documents found missing in the Technical Bid submitted by the Bidder, the tender inviting authority may inform to that Bidder by E-mail to submit the missing required documents within stipulated time limit. If Bidder/Bidders fail to submit within stipulated time, their Bid will be declared technically disqualified and no further correspondence will be entertained.

5.7 Bidder should have average annual turnover of **Rs.41,04,842/-** during last three financial years (**average of financial years of 2024-25, 2023-24 and 2022-23**). Bidder shall furnish annual audited financial statement duly certified by Chartered Accountant for the last three financial years as above to demonstrate the financial healthiness of the company. The balance Sheet and Profit & Loss Account must be in the name of the company. Any type of MOU for this purpose will not be entertained.

Note: In case, the annual turnover is less than the statutory guideline which does not require audit, the bidder shall submit the turnover certificate from Chartered Accountant.

5.8 The Bidder has to submit INCOME TAX Permanent Account Number (PAN) and GST registration number. Copies of the same shall be submitted.

5.9 **The net worth of the bidder should be positive** as evidenced from audited accounts of **last financial year (2024-25)**, audited (or where, as per extant laws of the land, audit is not applicable, certified) by a qualified Chartered Accountant who should be a member of the Institute of Chartered Accountants of India.

5.10 In case Bidder is a Consortium/Joint deed of undertaking of company, the above requirements/credential of consortium leader/bidder shall be considered unless otherwise specifically mentioned in the tender.

5.11 If Bidder or its Partner(s) or Director(s) is /are/was Black Listed / Deregistered / Stopped or banned from dealing in the past by any Govt, of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations, Bid of that party may be liable to be rejected. Bidder agrees and undertakes to accept decision of GIPCL in this regard as final and binding on the Bidder without any demur and that no further correspondence shall be done in this regard at any stage. Bidder shall have to submit “Declaration for Contractual Litigations” as amended in Annexure-H in Section-F / Form attached.

5.12 Bidder shall have to submit the “Declaration-cum-Undertaking for Compliance of Safety Laws and Regulations” on his company letter head as amended in Annexure-G in Section-F / Form attached.

- If any Major Violation of any safety law(s) / Rule(s) is / are found during the preceding Three (3) years, Bid of that party will be liable to be rejected. Bidder agrees and undertakes to accept decision of GIPCL in this regard as final and binding on the Bidder without any demur and that no further correspondence shall be done in this regard at any stage.
- If any of the details submitted in the prescribed Annexure-G & H in Section-F / Form to the Bid is/are found to be false, incorrect at any time in future, then the Contract awarded to that Bidder / Contractor shall be liable to be terminated forthwith without any notice / correspondence and Bidder agrees and undertakes to accept decision of GIPCL in this regards as final and binding on the Bidder without any demur and that no further correspondence shall be done in this regard at any stage. Further, Performance / Security Deposit will also be liable to be forfeited. Any dues to GIPCL from the Bidder / Contractor shall be recovered from the pending bills or any other dues payable to the Bidder / Contractor, if any or otherwise through any other recourse available under the Laws.

The Bidder shall submit all the evidences, documents, attested copies of work orders & work completion certificates etc… as a proof with EMD & Tender Fee and also provide the requisite details online for meeting the prequalification requirements. GIPCL will verify the experience, performance, capability & strength of Bidders, independently for executing the job. GIPCL may visit the site & consult the owner of the industry/property where similar job is executed by the Bidder. GIPCL reserves the right to accept/cancel/reject any/all Bids without assigning any reason thereof. The tenders of qualified Bidder/Bidders shall only be considered for further evaluation.

5.13 Site Visit is mandatory prior to submission of bid to understand the scope of work, Technical requirements, working conditions, site conditions, equipments, tools & tackles, labor deployment, associated risk, surrounding etc.

5.14 Bidder shall submit all supporting documents as per tender eligibility requirements.

6. LANGUAGE OF BID

The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and the Company, shall be written in the English language. Any printed literature furnished by the Bidder, written in another language shall be accompanied by an English translation for the purpose of interpretation of the Bid.

7. EARNEST MONEY DEPOSIT (EMD) AND TENDER FEE

7.1 An EMD of **Rs.87,000/-** (Rupees Eighty-Seven Thousand only) and nonrefundable Tender fee of **Rs.2,950/-** (Rupees Two Thousand Nine Hundred Fifty only), inclusive of applicable GST shall accompany with Bid. **Tender fee shall be submitted through RTGS / online mode of payment only**.

7.2 The EMD shall be submitted in the form of DD/irrevocable Bank Guarantee in favor of Gujarat Industries Power Company Limited from all Nationalized Banks or Axis Bank, ICICI Bank, HDFC Bank, Kotak Mahindra Bank, IndusInd Bank, Federal Bank, Bandhan Bank, IDBI Bank and Karur Vysya Bank as per Performa of BG enclosed with this tender document under Section-F (Annexure-C).

Bank for EMD DD	**Payable at :**
1. Bank of Baroda	Mosali, Dist: Surat
2. State Bank of India	Nani Naroli, Branch Code: 13423
3. Any Nationalized banks	Surat

Alternatively, EMD & Tender Fee may also be submitted through RTGS mode of payment by the bidders as per the details given below:-

RTGS detail:

1. BANK NAME:- **State Bank of India**
2. BRANCH:- **Nani Naroli**
3. IFSC CODE:- **SBIN0013423**
4. BENEFICIARY NAME: **Gujarat Industries Power Company Limited**
5. A/C No.- **33514692834**

Also, EMD & Tender fee may be submitted through online payment gateway of company's website: www.gipcl.com (online Payment Form) as per detail provided in Section-F (Annexure-J) herein under.

7.3 In case EMD is paid in the form of irrevocable BG, the same shall be valid for a period of 180 days after the due date for submission of the bid

7.4 The EMD of the successful bidder will be returned after payment of Security Deposit or submission of irrevocable PBG by successful bidder. Alternatively, EMD will be converted into SD and successful bidder shall submit SD or performance bank guarantee for the balance amount.

7.5 The earnest money deposit will be refunded to the unsuccessful/disqualified BIDDER after the tender is finalized and after award of LOI/Work Order.

7.6 Any bid not accompanied with EMD and Tender fee will be rejected. Tender fees and EMD should be submitted to GIPCL.

7.7 No interest shall be payable on EMD.

7.8 The EMD will be forfeited if the BIDDER (i) withdraws his tender after acceptance or (ii) withdraws his tender before the expiry of the validity date of the tender.

7.9 SCHEDULE OF EMD, TENDER FEE & OTHER SUPPORTING DOCUMENTS

Details/receipts of EMD & Tender fee paid by RTGS/online or EMD in physical form by way of DD/BG (as applicable) with other documents duly self-attested are to be submitted in physical form in sealed cover **as per details mentioned in NIT. Bid No. shall be mentioned at the top of cover/envelope.**	Address for Submission: - **Chief General Manager (Thermal)** **GUJARAT INDUSTRIES POWER CO. LTD.,** **(Surat Lignite Power Plant)** **Village: Nani Naroli,** **Taluka: Motamiya-Mangrol,** **District: Surat.** **PIN: 394 112, Gujarat.** **Phone : 02629-261063** E-Mail: rbsoni@gipcl.com

8. SUBMISSION OF BIDS

A: MODE OF SUBMISSION

The bids shall be submitted online through website: https://tender.nprocure.com or https://gipcltender.nprocure.com within the dates specified in the NIT along with the details of tender fees, EMD in two parts as under:

(a) Pre-qualification and Techno-commercial Bid without price.
(b) Price Bid.

Further briefing of above Part (a) and (b) are as under;

(a) Pre-qualification and Techno-commercial Bid without price:

The tender document duly signed in all pages without price bid along with techno-commercial deviations, if any, shall accompany the bid. The following Information shall be provided in the techno commercial bid:

1. Qualification and experience of Site-in-charge.
2. Schedule of Deviation (Annexure-F in Section-F) Technical as well as commercial, if any.
3. Qualification & experience of Supervisors/Engineers.
4. List of available equipments, tools & tackles which are required to perform the scope of works as specified in this tender.

The following supporting documents shall also be submitted in physical form along with EMD & Tender Fee:

1. The tender documents dully signed in all pages without price bid along with techno-commercial deviations, if any.
2. Proof of experience meeting the minimum eligibility criteria as mentioned in tender document.
3. Performance certificate issued by clients.
4. Previous work order copies.
5. Details of present work order (if any).
6. Turn over for the last three years, audited annual accounts/financial statements i.e. profit & loss account and balance sheet and net worth certificate for last financial year duly certified by a practicing CA will be required as specified in clause nos. 5.7 & 5.9 above.
7. P.F. Number and Allotment Letter.
8. PAN Number / Copy of PAN card.
9. Goods & Service tax registration number/certificate copy.
10. Bidder should submit duly filled Annexure-E provided under Section-F of Tender document.
11. Bidder should submit Annexure-F (Schedule of Deviation) under Section-F either marking NIL or desired deviations.
12. Bidder should submit Declaration-cum-Undertaking for Compliance of Safety Laws & Regulations and Contractual Disputes / Litigations as per Performa Annexure-G & Annexure-H under Section-F.
13. Bidder should submit duly filled Annexure-K (List of Qualified Staff) & Annexure-L (List of available equipment, tools & tackles) as provided under Section-F of Tender document.
14. Bidder should submit Declaration-cum-Undertaking on Letterhead regarding deployment of experienced Civil Engineer as per Performa Annexure-M under Section-F.
15. Bank Mandate (if not submitted earlier) as per Annexure-N under Section-F duly signed, & stamped by bidder and respective Bank, along with original cancelled cheque.
16. Vendor Registration Form (in case of first time bid participant of GIPCL’s Tender) as per Annexure-O under Section-F.
17. **Bidders should provide his User ID for e-Reverse auction on website: https://e-auction.nprocure.com**

(b) Price Bid:

1. Percentage Rate Price Bid shall be submitted only in soft form through e- portal system.

Note: The Estimate includes the cost of all manpower (skilled, semi-skilled, unskilled), experienced / qualified Civil Engineer (site Engineer), experienced site supervisors, tools, tackles, equipment, and any hired or outsourced resources required for job-specific works.

It also covers all materials except those specifically listed / mentioned as free-issue material in the Schedule of Rates (SoR) Section-E.

In addition, it includes all consumables, fuel, maintenance, spares, transportation, loading/unloading, safe storage, mobilization and demobilization, site supervision, housekeeping, and cleaning, Temporary site

infrastructure (offices, stores, toilets, fencing, etc.), quality control and testing (including third-party testing), and insurance (CAR, Workmen Compensation, and Third-Party Liability) are also covered.

The contractor shall comply with all statutory and legal requirements, including labour laws (minimum wages, EPF, ESI, bonus, etc… as applicable), safety regulations, and environmental norms. All applicable taxes and duties, including GST, are deemed included. The total estimated SoR amount is inclusive of GST, considered at the current rate of 18%. However, GST must be shown separately in invoices, and any change in rate shall be adjusted at actuals upon submission of valid proof.

2. The bidder's percentage (%) offer shall be based on the **Total Estimated Amount, inclusive of GST**. However, at the time of billing, **GST shall be shown separately** in the invoice, with reverse calculation as per prevailing GST laws. The applicable GST rate shall be charged at actuals, subject to submission of valid documentary evidence, in line with the rates notified by the Central Government.
3. The bidder shall quote the rates in the form of a **percentage (%)** as follows: "**At Estimated Value**" or "**_____ % below the Estimated Value**" or "**_____ % above the Estimated Value**".
4. The quantities indicated in the Schedule of Rates (SoR) under Section-E are **tentative and based on preliminary concept drawings**. These quantities are subject to variation during actual execution, depending on site conditions and final approved drawings.
   The Bidder shall fill the Bid documents with utmost care in consonance with the instructions contained in the Bid documents.
5. The quoted rates shall remain **firm and fixed** throughout the contract period and any extension thereof, if required, for completion of the entire scope of work. The rates shall **not be subject to any escalation or adjustment** on any account, including but not limited to increases in the cost of materials, fuels, statutory levies, Minimum Wage Rates (MWR), overheads, idle charges for labour or machinery, or any other unforeseen expenses. **No escalation or compensation** shall be payable to the contractor for any such revisions or changes during the contract period / till completion of entire scope of work.

B: METHOD OF TENDERING/SIGNATURE ON BIDS

(i) The Bid must contain the postal address like name, residence & place of business of the person/persons submitting the Bid and must be signed & sealed by the Bidder with his/her usual signature. The name of all persons signing the documents shall also be typed or printed below the signature on each page.
(ii) Bid by a joint venture/partnership firm must be furnished with full names of all partners and be signed with the partnership name, followed by the signature and designation of one of the authorized partners or other authorized representative(s). A certified copy of the power of attorney authorizing such partner or representative shall also be submitted.
(iii) Bids by a Corporation/Company must be signed with the legal name of the Corporation/Company i.e. by the President/Managing Director/Secretary or other person or persons authorized to Bid on behalf of such

Corporation/Company. A certified copy of the board resolution/power of attorney authorizing such partner or representative shall also be submitted.

(iv) The Bidder's name stated on the proposal shall be the exact legal name of the firm.

(v) Erasures or other changes in the Bid Documents shall be initialed by the person signing the Bid.

(vi) Bids not conforming to the above requirements of signing shall be disqualified.

9. MODIFICATION AND WITHDRAWAL OF BIDS

a. The Bidder may modify or withdraw the bid prior to the deadline prescribed for submission of bids.
b. No Bid shall be modified subsequent to the deadline for submission of Bids.
c. No Bid shall be withdrawn in the interval between the deadline for submission of Bids and the expiration of the period of bid validity.

10. POLICY FOR BIDS UNDER CONSIDERATION

a. Bid shall be deemed to be under consideration immediately after opening of the bid and till official intimation of award/rejection made by the Company to the Bidders.
b. While the Bids are under consideration, Bidders and / or their representative or other interested parties are advised to refrain from contacting by any means, the Company. The OWNER, if necessary, will obtain clarifications on the Bids by requesting for such information from any or all the Bidders, in writing as may be necessary. The Bidder will not be permitted to change the price or substance of the Bid after the Bid has been opened.

11. EFFECT AND VALIDITY OF THE BID

a. The Bid should be kept valid for acceptance for a period of one hundred and eighty (180) calendar days from the last date of submission of Bids.
b. The submission of any Bid along with the required documents and specifications shall constitute an agreement that the Bidder shall have no cause of action or claim, against the Company for rejection of his Bid. The Company shall always be at liberty to reject or accept any Bid or Bids at his sole discretion and any action will not be called into question and the Bidder shall have no claim in that regard against the GIPCL.

12. OPENING OF BIDS

12.1 The GIPCL will open the pre-qualification/Technical Bid/price Bid, as the case may be, in presence of Bidder's representatives whenever such a procedure has been specified. Otherwise the tender will be opened by the authorized officers of GIPCL.

12.2 **Preliminary Examination:**

12.2.1 The Company will examine the Bids for any computational errors, for sureties furnished by bidder, for authentication of documents submitted and completeness of the Bids.

12.2.2 Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price will be corrected & will be binding to the bidders.

(a) If there is a discrepancy between the Total Bid Amount and the sum of total prices, the sum of total prices shall prevail and the Total Bid Amount will be corrected & will be binding to the bidders.

13. EVALUATION & COMPARISON OF BIDS

13.1 GIPCL shall evaluate the Bids received and accepted by it to ascertain the lowest evaluated Bid in conformity with the specifications of the tender documents.

13.2 The Technical Bids will be examined for minor matters regarding qualification of bids. Subsequent to correspondence with the respective bidders, the decision of Tender Committee will be final.

13.3 All responses to requests for clarifications shall be in writing and shall be presented to the Company through e-mail or in a sealed envelope on or before the given date requested by the Company. If the Technical clarifications sought by the Company do not reach the Company on or before due date, the Bid will be rejected.

13.4 The comparison of all the Bids shall be carried out with reference to the scope of work as per the technical specification. Any deviation/omission shall be evaluated at highest quoted price of the deviation/omission quoted by any of the Bidder. In case a separate price (for omission) is not given by any other Bidder, a reasonable price of the same shall be taken & the same shall be binding to the Bidders.

13.5 The commercial deviation, if any, shall be loaded to bring all the Bids at par. The loading shall be carried out at an interest rate of 2% above PLR of SBI.

13.6 A Bid to be substantially responsive shall be one which on evaluation confirms to all the terms, conditions and specifications of the Bid documents without any material deviation or reservation.

13.7 For the above referred purpose, a ‘material deviation’ shall be one which:

(a) Which affects in any substantial way the scope, quality or performance of the contract, or

(b) Which limits in any substantial way and in a manner inconsistent with the Bid documents, GIPCL’s right or the Bidder’s obligations, under the contract, or

(c) Whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

14. RIGHT OF REJECTION OF TENDERS

14.1 GIPCL reserves the right to accept or reject any Bid or to cancel the Bidding process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders regarding the same.

14.2 Any Tender without EMD and Tender fee will be treated as non-responsive and shall be rejected at the outset & no further correspondence shall be entertained regarding this.

14.3 GIPCL reserves the right to debar any Bidder from participation in future Bids if such Bidder has quoted an abnormally low rate in the Bid document/price Bid.

15. AWARD OF CONTRACT.

15.1 GIPCL will award the contract to that bidder whose quotation has been determined to be substantially responsive and evaluated as the lowest quotation in conformity with the requirements of the specifications and documents contained herein, provided further that the bidder is determined and evaluated to be qualified to perform the contract satisfactorily.

15.2 The successful bidder shall be intimated of his/her selection through the Letter of Intent or Letter of Award/ Work Order which shall be sent to him~~/her~~ through e-mail, courier, fax or registered mail.

15.3 GIPCL reserves the right to cancel/short close the contract during the contract period without assigning any reason.

15.4 GIPCL reserves the right to split the contract quantity between vendors.

16. CONTRACT / COMPLETION PERIOD

16.1 *The contract / completion period* for scope of works *of both the sheds shall be 06 (six) months from the date of issuance of the Letter of Intent (LoI) and/or Work Order, whichever is earlier (*except 03 months of peak Monsoon, i.e. July, August & September*)*.

16.2 *GIPCL/Consultant shall issue RCC foundation construction drawings for both the sheds within 30 days from date of LOI. Excavation, Construction of RCC Foundation, Pedestals & Beams, Backfilling, etc... for both the sheds in all respect including ready for handing over to PEB agency for erection of PEB Structure: Within 03 Months from the date of release of Construction Drawings for Foundation, Pedestals & Beams*.

16.3 Balance Civil works *for both the sheds* as per scope of work: Within 02 Months from the date of handing over of front.

16.4 GIPCL reserves the right to extend the contract period by up to an additional **03 (three) months** on the same rates, terms, and conditions, without any price escalation and without entering into a new contract on sole discretion of GIPCL only. However, delay attribute to contractor beyond above schedules will attracts penalty as LD (Liquidated Damages) as per specific clause mentioned in Special Conditions of Contract (Section-D).

16.5 If the scope of work is not completed by the Contractor, necessary LD will be deducted as per specific clause mentioned in Special Conditions of Contract (Section-D) and in the interest of work completion, GIPCL will extend the contract period appropriately (along with deduction of LD) as per contract requirement on the same rates, terms, and conditions without any price escalation or new contract on sole discretion of GIPCL.

16.6 GIPCL reserves the right to short-close the contract at any time by giving **01 (one) month's notice**, without assigning any reason.

17. ASSIGNMENT AND SUB-LETTING

The Contractor shall not directly or indirectly assign or sub-let total/any part of the contract to any other party or agency.

18. CONTRACTOR'S OBLIGATIONS

A: DEPLOYMENT & RESPONSIBILITY OF MANPOWER

(i) The Contractor shall deploy suitably qualified and sufficient manpower for timely & satisfactorily execution of the works under the contract.

(ii) The Contractor shall deploy sufficient skilled, Semi-skilled and Un-skilled manpower separately to properly complete the job in given/scheduled time.

(iii) The Contractor shall depute its own workmen/labour with proper identification to enter the plant premises after ensuring that the jobs are scheduled.

(iv) At the time of deploying manpower, the Contractor shall strictly comply all the applicable labour laws/Acts norms including but not restricted to the age of the workers, women workers and shall also ensure that a police verification, security check, pre-employment medical fitness check-ups & induction safety training for all the workmen/labour engaged at the GIPCL site is done and necessary documents regarding the same shall be submitted to the GIPCL's authorized representative/officer-in-charge. Any default in complying with the same or any misrepresentation regarding compliance of the same shall compel GIPCL to initiate appropriate civil or criminal proceedings regarding the same.

(v) The Contractor shall also comply with the safety requirements and provide his workmen/labor with safety equipment like helmets, masks, gum boots and other necessary PPEs for properly undertaking the operations involved under this contract. Following are also to be issued by contractor

   a) Safety shoes (standard approved ISI make)
   b) Safety helmet (standard approved ISI make in yellow colour only)
   c) Safety Goggles / face shield.
   d) Ear plug / Ear muff.
   e) Hand gloves like electrical hand gloves / cotton hand gloves / Chemical hand gloves.

(vi) Contractor shall nominate /authorize senior experienced person in writing as site-in-charge to co-ordinate with GIPCL engineer / operation team and who shall bear overall responsibility for performance of the contract. Such person shall remain available at site during execution of scope of work. Contractor has to submit the authority letter and documentary proof for the same.

(vii) The Contractor shall appoint minimum required site supervisors who shall co-ordinate with GIPCL's Engineer-in-Charge for daily entrusted jobs. They have to maintain daily records dully signed for the works carried out and duly certified by concern Engineer-in-Charge. The Contractor, in co-ordination with the Engineer-in-Charge, shall ensure the availability of adequate manpower, consumables, materials, tools & tackles, etc… to carry out the job satisfactorily as per GIPCL's requirements as directed by Engineer-in-charge. As per the instruction of Engineer-in-Charge, they have to allot the work and execute the same in specified time limit.

(viii) During execution of the works, one or more jobs may be required to be done simultaneously and the Contractor shall mobilize additional resources accordingly.

(ix) During emergency or similar situations, the Contractor shall be required to mobilize resources as per need within the period of 04 (four) hours or even earlier of that, depending upon criticality and also during odd hours, as directed by GIPCL. If the contractor fails to mobilize sufficient manpower to complete the job in time, GIPCL will execute the job through other agency at the risk and cost of

the contractor with 10% supervision charges, including GST & the same will be recovered from the Contractor's bill.

Important Note: Whenever any of the Unit at SLPP remains under outage due to any reason, the contractor shall mobilize sufficient work force at site within a period of four hours from the time of intimation to the site-in-charge or via mail to your office. Generation loss occurred due to want of manpower as well as resources will be viewed very seriously and will invite appropriate punitive measures as decided by competent authority.

(x) During working in high risk area like hot lines of steam/ water/ oil, the workman must wear a suitable safety apron, safety belt, safety hand gloves and goggles. It is the contractor's/contractor's supervisor's responsibility to ensure it without fail.

(xi) During unit overhauling, the contractor has to enhance the site manpower as per the requirement to ensure the timely completion of work (During overhauling period quantum of work increases substantially). For this, enhanced work shall be completed by deploying additional manpower with supervisor as per site necessity. Payment will be made on item rate basis only under respective section. The work during the overhauling period is to be carried out round the clock as per instructions of Engineer-in-charge. Contractor should mobilize sufficient number of manpower with other required equipment/resources and execute the work in all shifts with independent manpower after receipt of such instructions. Contractor should not continue the same manpower for more than 12 hours.

B: TOOLS & TACKLES:

(i) All standard tools & tackles, standard Civil construction equipment, vehicles, consumables, materials, etc… (Standard Civil construction equipment like but not limited to AJAX Machine with weighment printing facilities, 02 bags capacity Batching Mixture machines as a stand by arrangement, trimix concrete floater, poker vibration, surface vibrator, Concrete needle Vibrators, Water Tanker, Excavator, JCB, Roller, earth compactors, Heavy capacity dewatering pumps, dumpers, tractor with trolley, level machine, total station for layout etc…) as required to execute the contract are in the scope of the contractor) to execute the contract are in the scope of the contractor (except specified free issue materials as mentioned in specific items of SoR Section-E). The contractor should ensure that all such tools & tackles/equipments/vehicle are in healthy & working condition. All consumable items would be in the scope of the contractor. The scope shall include deployment of complete Vacuum Dewatered Flooring (VDF) system comprising vacuum pump, suction hoses, filter mats, screed vibrators, needle vibrators, power trowels, leveling instruments, joint cutting machines, and all ancillary equipment required for proper execution of VDF flooring.

Note: If work is suffered due to want of sufficient manpower, tools & tackles, vehicle, equipments and/or required consumables/materials then 25% of the total job cost including GST will be levied as a penalty for each and every instance.

(ii) For proper execution of the work as per the scope, the contractor is required to maintain sufficient quantity of tools & tackles, equipments, etc… in good working condition at site as per day to day work load and emergency situations to complete the work in stipulated time.

(iii) In case of breakdown of equipment, the contractor should work round the clock for putting back the area in service immediately within minimum time. In case of any emergency arising during night hours the contractor should be in a position to mobilize the manpower immediately within minimum time.

(iv) Arrangement for lighting at the work spot has to be made by the contractor. He has to arrange all lighting equipment such as power cable, hand lamps, supply boards, cables, etc… as per requirement in sufficient quantity. The contractor has to take prior approval for taking electrical power supply. The contractor should keep hand lamps of 24Volt for confined space and sufficient quantity of 240 Volt halogen lamp for other area ensuring safety at work place.

(v) Pin sockets of IS standards should be used for all connections. For any accident take place & any damage to the equipment and/or injury to human due to carelessness in loose connection, contractors will be held responsible & liable for any recovery/actions.

19. CLARIFICATION OF BIDDING DOCUMENTS

If any Bidder requires any further information or clarification in the Bidding Documents, may notify the Company before one week of last date of submission of online Bid, in writing or by E-mail at the GIPCL's mailing address rbsoni@gipcl.com as indicated in the 'Invitation to Bids'.

The GIPCL's response (including an explanation of the query) will be sent in writing or by E-mail to all prospective Bidders who have received the Bidding Documents.

20. TIME SCHEDULE

The basic considerations and the essence of the 'Contract' shall be the strict adherence to the time schedule for performing the specified 'Works'.

21. UNDERSTANDING AND CLARIFICATION ON DOCUMENTS AND SPECIFICATIONS

The Bidder is required to carefully examine the specifications & documents, all the conditions and matters work wise & cost wise. If any Bidder finds any discrepancies or omissions in the specifications and documents or is in doubt for any meaning of any part, he shall request in writing for an interpretation/ clarification to the GIPCL.

All such interpretations and clarifications shall form a part of the Bid documents.

22. PAYMENTS

All the payments against the work order shall be in Indian currency and payable through cheque or RTGS (online payment) system only based on submission of required documents like bank mandate form with original cancelled cheque.

23. POINTS TO BE CONSIDERED DURING QUOTING ONLINE PRICE BID

a. The schedule of rates (Section-E) shall be read in conjunction with Instructions to Bidders, General conditions of contract, Special conditions of contract, Technical specifications and Bid Drawings.

b. The quantities given in the schedule of rates (Section-E) are estimated and payment will be made as per actual work carried out as per the rates of work order.
c. The method of measurement of completed work for payment shall be in accordance with the method of measurement specified in the Tender in Section-D or as per standard IS practice. Mode of measurement mentioned in Tender will be prevail.
d. No separate amount shall be payable for use of auxiliary equipment incidental to or in day to day operation in the course of fulfillment of contractual obligation of the contractor.

Note: Interested bidders are requested to submit the online tender at least two days in advance from the due date set for online submission of bid in order to avoid non-participation of e-tender due to probable technical problem in e-tender system.

24. QUANTITIES

The quantities specified are estimated and for tendering purpose only. Payment will be made, based on actual work done as certified by Engineer-in-charge of GIPCL.

Quantities of individual items may be revised during the course of contract period based on any unavoidable alterations/deletions in concept as per approval of GIPCL. Contractor shall not be entitled for any compensation on ground of such alteration in given estimated quantities within overall limits of awarded contract price. GIPCL reserves the right to operate or increase/decrease quantities in each item or omit any item included in Schedule of Quantity at its discretion. Contractor shall have no claim, whatsoever, on grounds of loss of anticipated profit etc. on account of the same.

After commencement of the work, GIPCL, for any reason may not require to be carried out the whole/part of the work as specified in the tender, the ENGINEER-in-charge shall inform the fact for thereof to the CONTRACTOR and contractor shall have no claim for any payment or compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of the full amount of the work not having been carried out nor shall he have any claim for compensation by reason of any change having been made in the original specifications and instructions which shall involve any curtailment of the work as originally contemplated.

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SECTION-B
INSTRUCTIONS TO BIDDERS FOR ONLINE TENDERING & E-REVERSE AUCTION

SR. NO.	DESCRIPTION
1.	Tender documents are available only in electronic format and same can be downloaded from the website: https://tender.nprocure.com or https://gipcltender.nprocure.com and It can also be viewed from Company's website www.gipcl.com
2.	Price bid should be submitted online through the website https://tender.nprocure.com or https://gipcltender.nprocure.comonly. No physical submission of price bid will be entertained as it should be furnished on-line only
3.	Bidders who wish to participate in online tenders will have to procure / should have legally valid Digital Certificate (Class III) as per Information Technology Act-2000, using which they can sign their electronic bids. Bidders can procure the same from any of the license certifying Authority of India or can contact (n)code solutions- a division of GNFC Limited, who are licensed Certifying Authority by Government of India
4.	All bids should be digitally signed. The bidders are required to contact at the below mentioned address for detailed training on on-line tendering and also for requirement. (n) Code Solutions - A division of GNFC Ltd. 403, GNFC Info tower, S.G Road, Bodakdev, Ahmedabad – 380054 (Gujarat, India). Toll Free: **7359021663** Tel: 079-26857315/316/317 E-mail: nprocure@ncode.in, website: https://tender.nprocure.com

Interested bidders are requested to submit the online tender at least two days in advance from the due date set for online submission of bid in order to avoid non-participation in case of any technical issues (website and/or network) at last moments.

E-REVERSE AUCTION:

i. GIPCL reserves the right to conduct E-Reverse auction through (n) Procure platform.
ii. E-Reverse auction shall be conducted amongst (a) the lowest 50% eligible bidders (rounded to the next higher whole number) from the total bids received OR (b) Minimum three (03) lowest bidders, whichever is higher, shall be invited for participation in e-Reverse Auction through n-procure platform.
iii. Opening Price (including GST), Decrement value and duration for the e-Reverse Auction shall be informed to the qualified bidders before start of e-Reverse Auction.

iv. After e-Reverse Auction process, L1 bidder shall be decided on Lowest Total Contract Price (including GST).

v. To participate in e-Reverse Auction, Bidders have to create e-Auction USER ID on website: **https://e-auction.nprocure.com** that the bidder shall be allowed to participate the e-Reverse Auction.

vi. In case of any further information regarding online bidding or if a Bidder needs any assistance in accessing/ submission of online bid/ clarification or if training is required for participating in online e-reverse bidding, then the Bidder can contact the following office for assistance or training:

(n) Procure Cell, (n) code solutions-A division of GNFC Ltd.,
403, GNFC Info tower, S.G. Road,
Bodakdev Ahmedabad – 380054 (Gujarat)
Toll Free: **7359021663**
Phone No. 079-26857315 / 316 / 317,
Fax: 079-26857321 / 40007533, Email: nprocure@ncode.in

Bidder may visit https://tender.nprocure.com for information regarding e-tendering registration process.

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SECTION-C
GENERAL CONDITIONS OF CONTRACT

1. CONTRACT SECURITY DEPOSIT/ PERFORMANCE BANK GUARANTEE

As a Contract Security/Performance Bank Guarantee, the successful Bidder, to whom the work is awarded, shall be required to furnish a Performance Bank Guarantee (PBG)/Contract security deposit (SD) in favour of Gujarat Industries Power Company Limited for an equivalent amount of ten percent **(10%)** of the “Contract Price excluding taxes and duties” from all Nationalized Banks or Axis Bank, ICICI Bank, HDFC Bank, Kotak Mahindra Bank, IndusInd Bank, Federal Bank, Bandhan Bank, IDBI Bank and Karur Vysya Bank in the in the format attached in **SECTION-F**, and it shall guarantee the faithful performance of the 'Contract' in accordance with the terms and conditions specified in these documents and specifications. Contract security deposit/PBG shall be submitted strictly within twenty-one days from the date of LOI or work order, whichever is earlier.

The PBG/ Security Deposit shall be valid up to “Defect Liability Period” of 12 (Twelve) months after the date of actual contract completion/contract expiry date (whichever later) as certified by GIPCL (necessary BG extension/amendments should be carried out by contractor accordingly as desired by GIPCL). The Contract security/Guarantee amount shall be payable to the Company in Bidder's home currency without any condition whatsoever. GIPCL reserves the right to forfeit Performance Bank Guarantee (PBG)/Contract security deposit.

The Performance Bank Guarantee (initial security deposit) will be returned to the Vendor/Contractor without any interest at the end of the “Defect Liability Period” after completion of contract and on fulfilling contractual obligations throughout the “Defect Liability Period”. However, any delay in submission of SD will result in equivalent late release of entire SD after “Defect Liability Period”.

Bid security/EMD will be refunded to the successful bidder on receipt of Performance Security.

2. RECOVERY CLAUSE

(i) In case of any damage of equipment/machinery due to negligence of contractor or any other reasons attributed to contractor the decision of Engineer-in-charge regarding the amount of recovery shall be final and binding subject to a maximum of 10% of contract value, including GST. Recovery will be affected from the monthly bills and/or retention money/security deposit.

(ii) If the contractor fails to execute the work as per directions of Engineer (I/c) within the time frame given in work order and as per day to day instructions by Engineer-in-charge, GIPCL shall get the work done by third party at the risk & cost of the contractor with 10% additional overhead charges of GIPCL, including GST.

3. DEDUCTIONS FROM CONTRACT PRICE

All costs, charges or expenses that GIPCL may have paid, for which, under the contract the contractor is liable, shall be recovered by the GIPCL.
The contractor shall pay all such claims within 15 days of claim, failing which the same shall be deducted from the bills of contractor.

4. TERMINATION OF CONTRACT BY GIPCL

Contractor shall be responsible for completing the jobs within agreed time schedule and in case contractor fails to complete the given jobs related to this contract, GIPCL will engage third party and will recover expenses from contractor's R.A. bills, Security Deposit and / or whatsoever for expenses incurred to complete the job along with additional 10% overhead charges, including GST.

In case if contractor's services are not found satisfactory with respect to mobilization to meet emergency requirements, time bound activities, workmanship & safety (OH&S policy of GIPCL) then GIPCL has right to terminate the contract at any time by giving 15 days advance notice to contractor without assigning any reason and will make the alternate arrangement at the risk & cost of contractor.

GIPCL may terminate the contract after due recoveries of pending jobs/damages after giving 15 days advance notice to the contractor if any of the following events occur –

i. Contractor is adjudged as insolvent.
ii. Contractor has abandoned the contract.
iii. Contractor fails to commence the works, or has, without any lawful excuse under these conditions suspended the progress of the works for fourteen days after receiving written notice from the OWNER to proceed.
iv. Contractor fails to proceed with the work with due diligence as per requirements of the contract and failed to make such due progress as would enable the works to be completed within the time agreed upon.
v. Contractor fails to remove materials from the site or to pull down and replace works within 15 days after receiving written notice from the OWNER that the said materials or work were condemned and rejected by the OWNER under these conditions.
vi. Contractor fails to the detriment of good workmanship or in defiance of the OWNER/ENGINEER'S instructions to the contrary sublet any part of the contract.
vii. Contractor has neglected or failed persistently to observe or perform any of the acts, matters or things, which as per the contract are to be observed and performed by the contractor.
viii. Contractor repetitively violating the safety norms for more than three incidents.
ix. Any major contradiction of applicable labour laws.
x. Any major deviations from contractual terms and conditions including quality of job.
xi. GIPCL reserves the right to terminate the contract without giving any reason whatsoever and forfeit the PBG/SD.

5. FAILURE & TERMINATION

If the CONTRACTOR after receipt of written notice from the GIPCL/ ENGINEER requiring compliance, with such further drawings and / or the GIPCL /ENGINEER instructions fails within seven days to comply with the same, the GIPCL /ENGINEER may employ and pay other agencies to execute any such work whatsoever as may be necessary to give effect thereto and all costs incurred in connection therewith shall be recoverable from the CONTRACTOR by the GIPCL on a certificate by the GIPCL/ENGINEER as a debt or may be deducted by him from any money due or to become due to the CONTRACTOR.

If the contractor fails to execute the work or fails to mobilize the resources and equipments as per direction of GIPCL/ENGINEER within time frame given and/or fails to carry out progress of work as per agreed schedule of work planning and/or as per directions of GIPCL / ENGINEER within the time frame given and/or violating the GIPCL’s safety rules & regulations, GIPCL/ ENGINEER shall get the work done by third party at the risk & cost of the CONTRACTOR with additional 10% overhead charges of GIPCL, including GST and all costs incurred in connection therewith shall be recoverable from the CONTRACTOR by the GIPCL /ENGINEER as a debt or may be deducted by him from any money due or to become due to the CONTRACTOR.

In case if contractor’s services are not found satisfactory with respect to mobilization, time bound activities, workmanship & safety (OH&S policy) then GIPCL has rights to terminate the contract at any time by giving you 15 days advance notice without assigning any reason and will make the alternate arrangement at the risk and cost of the Contractor.

6. SETTLEMENT OF DISPUTES

a. Any disputes or difference of opinion between parties arising out of the contract to the extent possible shall be settled amicably between the parties. If amicable settlement cannot be reached all the disputed issues shall be resolved through arbitration before a Sole Arbitrator appointed by Managing Director, GIPCL according to the provisions of The Arbitration and Conciliation Act 1996 (Amendment 2021), as amended from time to time. The place of arbitration shall be at Vadodara/ Surat or any other place within state of Gujarat.
b. Work under the contract shall be continued by the contractor during arbitration proceedings unless GIPCL shall order suspension thereof or any part thereof in writing or unless the matter in such work cannot possibly be continued unless the decision of the Arbitration proceedings is obtained.

7. INTERPRETATION OF CLAUSE

In case of disputes as regards interpretation of any of the clauses or specification, the decision Chief General Manager (Thermal) / HoM will be final and binding on the contractor.

8. EMPLOYEE’S COMPENSATION INSURANCE

Contractor shall take all risk Insurance Policy to cover all his workmen/employees, staff applicable under the Employee Compensation Act 1923 or any amendment

thereof from time to time as also insurance cover for third party liability. The contractor shall keep the GIPCL indemnified from all liabilities arising out of his action in pursuance of this contract. The E. C. Policy should be obtained from Surat Jurisdiction and shall be assigned to GIPCL. EC policy should cover the specified contract period.

9. STATUTORY REQUIREMENTS

a. COMPLIANCE OF LABOUR LAWS

The contractor shall at his own cost comply with the provision of labour laws, rules, orders and notifications whether central or state or local as applicable to him or to this contract from time to time. These Acts/Rules include without limitation the followings.

1. Contractor shall be solely responsible and shall fully comply with all the provisions of all the labour laws applicable such as the Minimum Wages Act, 1948, Contract Labour (Regulation & Abolition) Act 1970, Factories Act, 1948, Payment of Bonus Act 1965, Employees Provident Fund and Miscellaneous Provision Act 1952, Industrial Dispute Act 1947, Workmen Compensation Act 1923, Payment of Gratuity 1972, Interstate Migrant Workmen Act 1979, Equal Remuneration Act with Rules, Order and Notifications issued/made there under and as amended from time to time.

2. All other Acts, Rules/Bye-Laws, Orders, Notifications etc. present or future applicable to the contractor from time to time for performing the contract job.

2.1. The Contractor shall provide and be responsible for payment of Wages, Salaries, Bonus, Social charges, Insurance, Food, Accommodation, Transport, Medical and Canteen facilities and other statutory privileges and facilities to his personnel as per law/rules/regulations and orders of the Central Government, State Government, Local Authorities or other authorities as are in force from time to time. All employees of the Contractor shall be employee of the Contractor.

2.2. The contractor shall have a valid license obtained from Licensing Authority under the Contract Labour (Regulation & Abolition) Act,1970 as amended from time to time at the time of execution of the contract covering all his employees working at SLPP site and furnish the same failing which GIPCL may terminate the contract at its sole discretion.

2.3. The Contractor shall at the time of execution of the contract have a EPF Code Number obtained from the Authorities concerned under the Employees Provident & Miscellaneous Provisions Act, 1952, as amended from time to time and remit contributions in respect of the employees employed by him at SLPP Site to the P.F office concerned every month failing which GIPCL will recover from the outstanding payment to the contractor from GIPCL.PF code of Gujarat region should be taken.

2.4. The Contractor shall maintain all records/registers required to be maintained by him under various labour laws mentioned above and produce the same before the Statutory Authorities whenever required.

2.5. The Contractor shall also submit periodical reports / returns to the various statutory authorities such as those under the Contract Labour (Regulation & Abolition) Act-1970, Employees Provident Fund Act, as amended from time to time, etc., under intimation to HR & Admn. Dept.

2.6. The Contractor shall not pay less than the Minimum Wages notified by the Government from time to time to his employees of corresponding categories.

2.7. The Contractor shall be responsible for payment of overtime wages to his workmen, if any, in case they are required to work beyond the prescribed hours under law as per applicable rates.

2.8. The contractor shall take Workmen Compensation Insurance Policy for all his employees working at GIPCL. The contractor shall indemnify the company against any liability due to any work injury or accident to any of its employees.

2.9. The Contractor shall in the event any of his workmen / employee sustains any injury or disablement due to an accident arising out of and in the course of his employment, provide necessary medical treatment and pay compensation as applicable, required under the Workmen’s Compensation Act, 1923 as amended from time to time.

2.10. If any of the persons engaged by the Contractor misbehave with any of the officials or the Company or commit any misconduct with regard to the property of the Company or suffer from any serious communicable disease, the Contractor shall replace them immediately.

2.11. The Contractor shall not engage / employ persons below the age of 18 years. Employment of women shall be strictly according to applicable laws.

2.12. GIPCL will have right to deduct and disburse the claims of the individual / parties being a principal employer on any account whatsoever in relation to their employment with the contractor. The Security deposit will be released to the contractor at the end of the contractual tenure subject to an undertaking by the contractor that in the event any of his workmen or the heirs of workmen puts up a claim for recovery of money due to him from the contractor before the appropriate authority under the I.D.Act 1947 or under any other labour laws or for compensation under the Workmen’s Compensation Act, 1923 as amended from time to time and the appropriate authority has given a direction for making payment the contractor will meet the same or indemnify GIPCL if in the event GIPCL pays it as Principal Employer.

2.13. The contractor shall make payment of wages to his employees on fixed date within the period specified under the applicable Law, in presence of representative of the company. He will submit a true copy of wage sheet, attendance register and P.F. remitted challans on monthly basis to HR&A dept. for verification and record.

2.14. The Contractor shall provide Safety items/kits to his employees such as safety shoes, goggle, ear plug, hand gloves, safety belt etc, if any, required under law.

2.15. The contractor shall conduct pre-induction and periodic medical checkup of his workmen as per applicable laws.

2.16. The contractor shall be solely responsible for any accident caused to his workers and should adhere to all rules / regulations as per labour laws of Government and other statutory laws as applicable.

2.17. The contractor should register himself under the Contract Labour Act, Employee Compensation Act and PF Act, as amended from time to time (Code no. to be mentioned) and submit the copy of registration certificate and should possess the same from the date of commencement of work, failing which the contract is liable to be cancelled. The E.C. Policy copy should be submitted to the GIPCL before commencement of the work and Labour License should be obtained within one week from the date of issue of form-V. Contractor should apply for Form-V immediately after receipt of LOI. A copy of Labour License shall be submitted to GIPCL, HR & A Department.

2.18. Contractor shall have to insure his workmen /supervisors etc. under Group Insurance scheme.
2.19. The Contractor shall be responsible for compliance of all statutory rules, regulation, act enforced from time framed by the government such as Factory Act, Employee Compensation Act, payment of ‘Wages Act’, Minimum Wages Act’, Provident Fund Act, All Labour Laws Act, as amended from time to time in respect of employees engaged by him for the work and shall have to maintain necessary records. In case any amount becomes due to be payable by him to his employees or to the Government under the above rules, regulation, Acts, GIPCL reserves the right to recover the same from the running bill of the contract.
2.20. Documentary evidence of deposit of PF paid shall have to be produced by the contractor along with the next bill.
2.21. Records as per the provisions of various statutory Acts will have to be maintained by the contractor and submitted as and when required.
2.22. All employees of contractor should maintain due discipline and respect local sentiments. GIPCL reserves the right to direct the contractor to remove any such person who does not comply with it.
2.23. The list is indicative in nature and not an exhaustive one. Any amendment/alteration/Notifications or addition to the existing Law or a new statute shall automatically and immediately become applicable.
2.24. All laws, rules, regulations, notifications, etc. stated in this tender document shall be applicable as amended from time to time. Where applicable self-certified true copies of the required documents to be furnished, unless stated otherwise explicitly.

b. <u>LEGAL ASPECTS</u>

1. Contractor shall maintain all register required under the Labour Laws and make the payment as per the Minimum Wages Act, as amended from time to time to the workers employed by him/her.
2. Contractor shall obtain requisite license to carry out this contract under the provisions of Contract Labour Act, 1970, as amended from time to time and maintain necessary records and registers under the said Act.
3. Contractor shall submit a copy of each of the registration certificates with respect to Employees Provident Fund and Employee Compensation Act, as amended from time to time within one week time, from the date of award of this contract.
4. Contractor’s employees, agent or sub-agent shall not smoke or light anything within the premises of the GIPCL and carry match box / lighter or any other explosive and /or inflammable material inside the plant.
5. Contractor shall abide by all the statutory rules and regulations like P.F, Labour Laws, as amended from time to time, etc.
6. Contractor shall issue an appointment order to each casual labourer stating therein the nature of job to be performed by him/her and fix time for which the concerned labourers are likely to be deployed. Contractor shall also issue a temporary identity card specifying the period for which the labourer has been deployed.
7. Contractor is fully liable for the persons engaged by him/her for above work; however, GIPCL reserves the right to deduct any amount legally justified towards any liability not fulfilled.
8. Contractor shall indemnify GIPCL from any liabilities arising out of the employment of the manpower.

9. If the contractor fails to complete the allocated job within specified time frame, GIPCL shall get the work done by third party at the risk and cost of contractor.

10. PAYMENT OF WAGES

Contractor shall be responsible for compliance of all statutory rules, regulation, act enforced from time framed by the government such as Factory Act, Employee Compensation Act, payment of ‘Wages Act’, Minimum Wages Act’, Provident Fund Act, Payment of Bonus Act, Labour Law Act, maternity benefit act, as amended from time to time in respect of employees engaged by him for the work and shall have to maintain necessary records.

In case any amount becomes due to be payable by him/her to his employees/agencies or to the Government under the above rules, regulation, Acts, GIPCL reserves the right to recover the same from the running bill of the contract.

11. ACCIDENT TO WORKMEN

Contractor shall be fully responsible for injury or death of any of your or third-party workmen due to any act omission / indiscretion on contractor part while undertaking the work and contractor shall fully abide by the statutory requirements of the employee's compensation act.

GIPCL shall not be liable for any compensation due to accident, death or injury to any of contractor’s workmen or any third party due to negligence, act or omission on contractor part.

12. LIGHTING

Contractor shall arrange & provide sufficient General area lighting as well as work area specific lighting. Contractor shall also arrange DG set of required capacity for day to day work requirements and lighting requirements in case any power supply interruption from GIPCL.

13. NIGHT/SUNDAY/HOLIDAY SHIFT

The contractor shall depute qualified and adequate resources in night shift/Sunday/holidays for any emergency job, which may come up at night/Sunday/holiday.

14. SAFETY ASPECT

Contractor shall observe all the safety and security rules and regulation of the GIPCL which are at present in force and which may come into force during the pendency of the contract. Any violation of any rules and regulations will entail immediate termination of the contract.

When contractor moves his/her lifting tools and tackles to the plant area, required test certificates as per the Factories Act 1948, as amended from time to time and the state factories rules has to be submitted to safety Dept. Safety Dept. will check the certificates and if found okay, then only materials will be allowed to enter inside the

plant. Material inward gate pass will be made only after certification from Safety Dept. Security Dept. will inform to Safety Dept., as & when such tools and tackles brought at the gate for making entry in the maintenance site.

The contractor has to submit the list of required safety gears along with safety equipments available with him/her to safety Dept. Safety Dept. will check for quantity and quality of the safety gears and then allowed permission of work. Poor quality material will not be allowed to take inside the Plant. If quantity of required safety equipments is not satisfactory, contractor will not be allowed to carry out the work using such safety gears inside the Plant for the work.

15. GENERAL SAFETY CLAUSES

1. The Contractor shall observe and comply, with regard to his workmen working at the SLPP site, the safety norms as per the safety operating standards.
2. The Contractor shall ensure that his workmen are informed and trained regarding the safety standards to be adopted while operating within the SLPP Plant & Mines premises and the Contractor shall brief them regarding the same and use of the Personal Protective Equipment ('PPE').
3. The Contractor shall issue safety shoes and safety helmet of IS standard to all his workmen immediately on execution of the work and the contractor shall ensure that his workmen wears the protective equipments at all times during the work operation. Following brand of the safety shoes and helmet shall be issued to contract workmen. Contractor shall issue safety shoes every year.

Helmet :

Sr No.	Model	Company	Specifications
01.	Tough Hat, HP-TH	Sure Safety	IS : 2925 – 1984, ANSI / ISEA Z89.1-2009
02.	V-Gard	MSA	
03.	PN 521 - Shelmet	Karam	

Safety shoes :

SR. No.	Name of Manufacturer	Model
1	Acme Fabrik Plast Co.	SSTEELE (Strom) – Double Density or TRIMAX(Adjacent) – Double Density
2	Favourite Safety Products.	Waves Nile D/D or FSP Nile DD

4. Other safety gears like ear plug, dust mask, hand gloves, safety goggles, gum boots, full body safety uniform and belts, safety net etc. shall be issued and used as per the job requirements. Safety helmet shall be of YELLOW COLOUR ONLY. Contractor will procure safety shoes & safety helmet from a reputed company with at least 12 months' guarantee and shall produce the guarantee certificate and IS standard certificate to the safety department. Contractor should purchase safety shoes of reputed brands. Safety shoes will be issued every year. IS certificate and guarantee certificate must be obtained from the vendor and submitted to the Safety department. Safety shoes should be heat, water, oil and chemical resistant, having an anti-slippery sole of 15298- 2002 make.
5. It is the duty of contractor to ensure that his workmen are wearing required PPEs as per work requirement. Contractor should ensure that their workers are wearing Safety helmet, safety shoes, dust mask, goggles, ear plug etc. at all times when they are at work throughout the contract period. The contractor may be asked to maintain the PPE issue registers with signature of workmen.

6. Contractor will reissue these PPEs in case of damage or misplacement of the same. Replacement shall be made immediately.
7. The contractor shall be responsible for providing first aid or emergency medical help and treatment to his workmen in the event of any accident or injury.
8. If it is observed that contractor is not issuing required PPEs timely and that of required quality, GIPCL will issue the required PPEs to contract workers and back charge the same with 25% overhead charges of GIPCL, including GST.
9. All lifting tools and tackles shall be duly certified by competent person in conformity with the statutory requirements and certificate in form no. 10 as per rule 60 of Gujarat Factories Rules, 1963 and section 29 of the Factories Act, 1948, as amended from time to time shall be submitted every year before using such tools and tackles. In case of purchase of new lifting tools and tackles, form no. 10 as per the said rules shall be submitted before they are taken into use. All lifting tools and tackles shall be of reputed make having International manufacturing standard and shall be maintained in proper and workable condition.
10. The Contractor shall nominate one Safety Officer with required qualification for supervising the daily job/ shutdown jobs for observing and maintaining the safety aspects at site. He is solely responsible for any safety measures during maintenance work. He has to ensure that all the workmen working at site are equipped with essential PPE’s and proper safety arrangement is made at the SLPP site.
11. After mobilization of any tools & tackles to site, which includes chain pulley blocks, D-shackles, wire ropes, winch machines, Mobile crane, Hydra etc. shall be offered for inspection with all above statutory test certificate before using at site for any work. They should use all tools and tackles only after certification by GIPCL representative/safety officer.
12. When working at height, working on ceiling or roof covered with fragile materials, full body harness safety belt, ladders and crawling boards, fall arrester, etc. shall be used to prevent accident. Further, during working on height, contractor should arrange proper scaffolding of still pipes, safety net, full body safety belt, fall arrestor system etc. Advice and instructions of Engineer-in-charge/ safety in charge shall be strictly complied with in this regard. All necessary safety precautions shall be taken by the contractor to prevent accident and personnel injuries while working on height.
13. Flash back arrestors made of reputed manufacturer shall be provided on cutting torch, on DA cylinders and on O2 cylinder. Cylinder caps also required for handling the cylinders at the work at height area. Gas cylinders shall be transferred through gas cylinder trolley only with cylinder cap and stored up right (vertical) position only. All gas cylinders shall be hydro tested / certified as per gas cylinder rules 2004. Gas cylinders shall be stored, handled as per gas cylinder rules 2004.
14. All vehicles shall be operated by licensed drivers only. All vehicles’ PUC to be tested as per Government approved RTO guidelines. All Vehicles must be parked in Parking space designated by GIPCL. If any vehicle is found inside the plant premises other than the parking area such vehicles shall be handed over to Security dept. and their entry shall be cancelled for movement inside the plant premises with immediate effect.
15. All electrical equipment shall be in good condition and free from any defect. Electrical tools & equipments i.e. welding machine, grinding and drill machine etc. may be checked by the electrical engineer of the contractors regularly, every six month at least and report to be submitted to concerned HOD and safety depts.
16. During hot work, contractor will use fire curtains like asbestos sheets or fire blankets to prevent falling and spreading of sparks and hot material on and around the work

area. Contractor will procure and use such items. ELCB / RCCB shall be provided with rating of 9-30 milli amperes on welding machine and all portable power tools.

17. The contractor shall fill – up Incident notification form (S-I), Incident Investigation form (S-II) and near miss report within time limit as specified in forms, if any accident, Incident, near miss occurred while working at SLPP site.
18. Major AMC / ARC contractor (Where the man power strength is more than 50 and above) should appoint / nominate one qualified safety officer and he shall be responsible for addressing all the safety related aspects of execution of contract jobs and he will in close co ordination with safety officer of SLPP and attend all safety related meeting such as safety committee, on job safety training etc. Where the contractual man power is less than 50, the site incharge of the contractor will act as a safety officer and he will perform all the duties of safety officer as mentioned above.
19. No loose connection / joints allowed in electrical cables during performance of any kind of job.
20. Safety shoes to be issued to female employees also.
21. All the vehicles shall be fit as per RTO guidelines and valid fitness certificate is required as per RTO guidelines.
22. The Contractor's nominated safety officer shall be imparted regular on-job safety training like tool-box talk etc. and submit a record of such training in safety dept, respective dept and HR&A dept.
23. The Contractor shall comply all the new requirements related with safety as informed by the HOD / Safety department from time to time.
24. Penalty to be imposed for Violation of safety norms is proposed as follows:-

    The Contractor & Contract workmen shall strictly adhere to Safety standards / Guidelines as per practices. The list provided below is an indicative list to explain the principles behind safety practice.

If the contract workmen fail to comply with safety standards as per category A, B & C below, penalty shall be levied on the contractor as per the table mentioned below:

Category	Classification	Examples / Cases	Penalty
A	PPEs Related	Working without helmet, shoes, safety belt, gloves etc.	Rs.100 /- per instant.
B	WI Related	Failure to adhere to HSE guidelines/plans, careless attitude in material handling, Machine being used with damaged machine guard, unsafe electrical work - workout plug top/improper electrical joints/cables lying on ground, electrical equipment working without proper earthing, machine being used without machine guard, Welding machine without ELCB / RCCB of proper rating, Gas cylinder without test certificate, Cylinder cap, NRV / Flash back arrester, Cylinder trolley etc.	• Rs.500 /- per instant. • After three incidence, Per incidence Rs.2500/- • Continuous unsafe acts will disqualify the contractor from further

		Unsafe working practices at height more than 3 meters	participation in tender of/contract with GIPCL-SLPP.
		Working without permit or non-compliance with permit conditions like hot work, height work etc. as applicable, lifting tools and tackles being used without third party inspection certificates in form no. 9/10 as per Factories Act – 1948 etc..	
C	Unsafe Practices	Breach of safe practices by a particular person repeatedly for three times.	Suspend the entry gate pass for one week. After two suspensions his gate pass will be cancelled.

Penalty so levied against the contractors and company employees will be used during the observation of National Safety Day.

The contractor, workmen following good safety practices in their work area continuously will be rewarded / honored on National safety day.

15.1 GENERAL ELECTRICAL SAFETY RULES & REGULATIONS

Electrical safety

a. All the electrical apparatus including welding machine (either 3-phase or single phase) should be provided with Earth Leakage Circuit Breaker (ELCB/RCCB/RCBO) of 30mA rating.
b. Bidder/Contractor should ensure periodic checking of ELCB provided in their electrical apparatus.
c. Bidder/Contractor should ensure that there should not be any joint in the power supply cable of any machine. All cables should be in good condition with no bare insulation or frayed wires
d. Any power supply switchboard/extension boards brought by Bidder/Contractor should have ELCB of 30mA rating and it should have sockets along with 3-pin plug.
e. Any type of cable brought by Bidder/Contractor should not have any joint and should be of sufficient capacity for the respective job.
f. Bidder/Contractor to bring their own 24V rating portable hand lamps along with cable of (apparatus should be having 230V / 24V transformer) for the temporary lighting arrangement required at site for the respective jobs.
g. Bidder/Contractor should bring sufficient quantity no. of temporary light fixtures (230V or 24 V as per requirement of job/contract), extension boards, cables to draw supply from nearest power point.
h. Hand-held and portable machines shall be equipped with a built-in switch to switch off power in case of emergency
i. Bidder/Contractor to ensure healthiness of their electrical equipment whenever brought to GIPCL site and get them tested / verified by GIPCL Electrical Department representatives before start using.

j. Bidder/Contractor to ensure - All portable electric apparatus shall be regularly examined, tested and maintained to ensure that the apparatus and leads are in good order.
k. Only three-core cable shall be used for single phase operated tools with the third core connected to earth.
l. Ensure that all metallic portable appliances are provided with 3 pin plug and socket connections with third pin be connected to the ground terminal where ever possible. Also, the metal work of the apparatus is effectively earthed.
m. All cables and connections should be sound and of adequate capacity and properly insulated while using any welding machine and other power connections.
n. The earthing arrangements should be properly made with earthing clamps or a bolted terminal while using any welding machine
o. Electric holders when not in use, should be placed on an insulated hook or the holders should be fully insulated while using any welding machine
p. Whenever the welder stops or leaves work for any appreciable time, the power supply to welding machine shall be effectively disconnected while using any welding machine
q. GIPCL will provide either single phase OR 3-phase 3 wire power supply from the nearby point at job site. Bidder/Contractor to supply the required cable between GIPCL power supply point to equipment brought by Bidder/Contractor for the specified job. Further, if Bidder’s/Contractor’s equipment requires 3-ph 4 wire supply then they should derive 3-ph 4 wire supply from GIPCL 3-ph 3 wire supply system by incorporating sufficient capacity transformer. Like for hydro jet cleaning system, mixer machine, induction heating machine, SR machine etc., GIPCL will provide 3-ph 3 wire power supply.
r. Cable between welding machine to GIPCL power supply point should have cable TOP plug towards GIPCL power supply point of Make BALS having rating as 63 Amp.

Contractors not following above electrical safety points at any point of time are liable to penalty and their machine/ apparatus shall be seized by GIPCL.

16. REJECTION OF WORK

If, as a result of inspection, examination or testing, the GIPCL’s Representative/Engineer decides that any materials, work or workmanship is defective or otherwise not in accordance with the Contract, the GIPCL/Engineer/ GIPCL’s Representative may reject such plant, materials, work or workmanship and shall notify the CONTRACTOR promptly, stating his reasons. The CONTRACTOR shall then promptly make good the defect and ensure that the rejected item complies with the Contract. If Contractor failed to rectify the rejected work or workmanship, GIPCL/Engineer reserves the right to deduct or withhold amount against rejected work or Workmanship. CONTRACTOR shall not entitle for any claim or release of hold payment until rectify the defect up to satisfactory of GIPCL. If Contractor failed to rectify any such defective work or workmanship, GIPCL reserve the right to rectify at risk and cost of the CONTRACTOR and deducted by the GIPCL from any amount due, or to become due, to the CONTRACTOR’s dues.

If the GIPCL’s Engineer/GIPCL’s Representative/Consultant requires such materials, work or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If such rejection and retesting cause the GIPCL additional costs for the traveling and lodging costs of GIPCL/Engineer’s personal for attending the

retest, such costs shall be recoverable from the CONTRACTOR by the GIPCL and may be deducted by the GIPCL from any amount due, or to become due, to the CONTRACTOR.

17. GENERAL TERMS AND CONDITIONS

a. All tools & tackles, labours, supervisors, materials **(except specifically specified free issue materials under respective items of SoR in Section-E)**, consumable items, equipments, etc… to execute the contract are in the scope of the contractor. The contractor should ensure that tools & equipments are in healthy condition.
b. The decision of the Engineer-in-charge shall be final and binding on the contractor for defining the terms and condition included in this contract.
c. If the work is not found satisfactory, Engineer-in-charge reserves the right to take suitable action.
d. Contractor shall depute full time independent experienced site-in-charge and independent site supervisors/Engineer at site. They shall co-ordinate with GIPCL engineer and shall bear overall responsibility of contract including taking daily work instructions, work permits, gate-pass, receipt of MIV & specified free issue material from GIPCL store, site executions, maintaining records of work, material, inward challans, material & manpower gate-pass, joint measurement recording, billing etc... Such person shall function from site office of contractor at SLPP.
e. Contractor shall also nominate one safety supervisor at site and shall submit nomination of safety supervisor in writing before commencement of contract. Safety supervisor shall arrange small safety talk on every day morning or whenever required with all workers working under this contract. He shall coordinate with concern Engineer-in-charge on daily basis and report daily observations, tool-box talk records etc. The work shall not be allowed without deploying/nominating safety supervisor and a penalty equal to Rs.1,000/- per day absent of nominated safety supervisor shall be levied from Contractor.
f. Contractor shall strictly follow the existing work permit system of the GIPCL and any future revisions.
g. The contractor has to take EC insurance policy for their workmen. The contractor has to submit labour license (if applicable) and PF account number to the Engineer-in-charge before start the work.
h. The contractor has to do the job timely. GIPCL shall not compromise in delay. In case of delay of work without any valid reason, the GIPCL reserves the rights to carry out the work by deploying other agencies at the risk & cost of contractor with additional 10% overhead charges.
i. Contractor shall mobilize the resources as per need within the period of four hours. If the contractor fails to mobilize sufficient resources to complete the job in time, GIPCL will execute the job through other agency at the risk and cost of the contractor with additional 10% overhead charges including GST.
j. Contractor should mobilize all resources for efficient & smooth execution of contract within seven to fifteen days from the date of issue of Letter of Intent/Work Order.
k. The prices / item rates quoted (based on quoted % above/equal or below SoR) shall remain firm till completion of the contract and any agreed extensions thereafter and shall not be subject to any escalation, idle charges for labour, machinery, overhead expenses etc… due to any reason whatsoever. No price escalation / idle charges shall be entertained due to delay in work on unavailability of work front, any changes / modification / alteration of plan, non-issue of work permit, holding of work permit for any reason, unavailability of contractor’s supervisor/Engineer, unavailability of

contractor’s safety supervisor, violation of safety rules, unsafe act by any of contractor’s worker, negligence & ignorance of safety & quality instructions of GIPCL Engineer-in-charge or any other reason whatsoever.

l. Contractor must fulfill all the safety regulations and to take safety measures to avoid hazards. Contractor shall arrange all standard adequate healthy safety PPEs like but not limited to approved quality safety shoes & safety helmets, standard dust masks, safety goggles, safety hand gloves, safety belts, fall arrestors, other required safety tools, etc… as required and shall use exclusively under this contract for all the time during working at specified locations failing which, the Engineer-in-charge may hold the work and will take necessary action including penalty as decided. If the contractor repeatedly violates safety rules/regulations (more than three successive incidents), Engineer-in-charge may take necessary action against the contractor, including appropriate financial penalty (Maximum of Rs.1,000/- per incident per man-day and as per above clause no. 15) and/or termination of contract.

m. One or more jobs may be required to be done simultaneously and contractor shall mobilize additional resources accordingly.

n. Timely completion of all jobs and works shall be the essence of this Contract. Contractor should closely monitor each activities and complete the jobs as per the time given by and under the supervision of the Engineer-in-charge and shall ensure that sufficient manpower is deployed for the same.

o. The contractor has to complete the works as per the planning schedule and their respective supervisor has to interact with Engineer-in-Charge for PTW (Permit to work), work instruction, Return of permit.

p. The contractor has to submit daily reports / information of work carried out with details of available manpower, equipments / material etc… as directed by Engineer-in-charge.

q. Any job other than the listed jobs in work order shall be executed by the contractor on instruction from GIPCL and payment shall be made to the contractor on respective item rate only.

r. The Government of India has enacted the Micro, Small and Medium Enterprises Development Act, 2006 (the “Act”) and the Act has come into force from October 2, 2006. The Bidder shall confirm whether your organization is registered under the Micro, Small and Medium Enterprises Development Act, 2006, as amended from time to time. If your organization is registered under the Act, please specify the category i.e., Micro Enterprise, Small Enterprise or Medium Enterprise under which it is registered and kindly attach a copy of your registration certificate.

s. The Bidder shall provide details of registration along with copy of the registration certificate issued by the District Industries Centre/Department of Industries, etc of the respective State Government. It is to be noted that large scale industries and trading firms have been excluded from the purview of the Act.

t. GIPCL is an ISO 9001-2015 (Quality), ISO 14001-2015 (Environment), 45001-2018 (OH&S) and 50001-2018 (EnMS) certified company, and GIPCL gives extreme importance to maintain these global standards. Contractor shall be required to observe these standards as amended time to time while working with GIPCL. Contractor should ensure that his workmen/labour work in accordance with them.

18. CONTRACTOR’S SUPERVISION

The contractor shall, during the whole time the work is in progress, employ a qualified experienced site-in-charge of the works with adequate experience in handing of jobs of this nature and with the prior approval of the GIPCL / ENGINEER. Such in-charge

shall be constantly in attendance at the site during working hours. During CONTRACTOR’S supervisory engineer absence during working hours, if unavoidable, and also beyond working hours, when it may be necessary to give directions, orders may be given by the ENGINEER / GIPCL and shall be received and obeyed by the CONTRACTOR’S superintendent or Foreman who may have charge of the particular part of the work in reference to which orders are given. If requested to do so, the ENGINEER /GIPCL shall confirm such orders in writing. Any directions, instructions or notices given by the ENGINEER / GIPCL to him, shall be deemed to have been given to the CONTRACTOR. The representative of the CONTRACTOR shall have all necessary powers to receive materials from the GIPCL, issue valid receipts for the same, engage labour or purchase materials and proceed with the work as required for speedy execution.

None of the CONTRACTOR’S Superintendents, engineers, supervisors or labour should be withdrawn from the work without due notice being given to the GIPCL / ENGINEER; further no such withdrawals shall be made if in the opinion of the GIPCL / ENGINEER such withdrawals will jeopardize the required pace of progress / successful completion of the work.

The CONTRACTOR shall employ in or about execution of the work only such persons as area careful, skilled and experienced in their respective trades, and the GIPCL shall be at liberty to object to and require the CONTRACTOR to remove any person employed by the CONTRACTOR in or about execution of works who in the opinion of the OWNER misconducts himself or is incompetent or negligent in the proper performance of his duties and all such persons shall not again be employed upon the works without the prior permission of the GIPCL. Neither the CONTRACTOR and the PURCHASER nor the ENGINEER shall hire or employ any employee of the other party except by mutual consent.

19. CONTRACTOR TO REMOVE ALL OFFENSIVE MATTER IMMEDIATELY AND CLEAN-UP

All loose materials, wastage, packing materials, empty paint drums, cut pieces or other matter of an offensive nature shall not be deposited on the surface, but shall at once be carted away by the CONTRACTOR to some pit or place provided by him away from the site of work and approved by local authorities.

As a part of the work included in this contract, the CONTRACTOR shall completely remove and satisfactorily dispose of all temporary works & remove scaffolding materials to the extent directed. He shall tear down and dispose of all temporary works, shall remove or grade, to the extent directed, all plant and equipment, shall satisfactorily dispose off all rubbish resulting from the operations under this contract and shall do all work necessary to restore the territory embraced within the site of his operations to at least as good order and conditions as at the beginning of the work under this contract.

20. FACILITIES TO BE PROVIDED BY GIPCL

A. The Company shall provide the following facilities to the Contractor at the site:

a. Electricity & water at nearest available one point as available. Further distribution to be done by contractor at their cost.

b. Quarter/room & food for supervisors/engineers on chargeable basis in GIPCL’s township as available. Food on chargeable basis at GIPCL’s Industrial Canteen as available. If not available, contractor to make his own arrangement for lodging and boarding locally or as appropriate at his cost.
c. Workshop facility as available at site only. However, contractor may visit the workshop to ensure the existing facility. For the facilities other than available, contractor has to carry out the job outside at their own cost.
d. GIPCL may also provide free hydra (based on availability) only for shifting of heavy structural plates, beams, etc… and also erection of heavy structures, etc… on discretion & directives of Engineer-in charge of GIPCL.
e. Space for contractor’s office & store as decided by GIPCL based on availability.
f. First aid facilities as available on chargeable basis. If not available contractor to make his own arrangement for the same locally or as appropriate at his cost.

Apart from the above, no other facilities shall be provided by GIPCL.

B. GIPCL shall also conduct an orientation program appraising the workmen regarding the safety norms and measures to be observed during work operations at the plant site.

21. WORK CERTIFICATION

a. The work to be performed being a specialized nature, the contractor should be fully conversant with modern practices and should be able to carry out works independently of large thermal power plant. The contractor shall therefore be required to engage qualified/ experienced personnel to undertake the work as per specifications and requirement.
b. Contractor should maintain one computer with printer for keeping daily records and maintain the data.
c. All the work measurements shall be jointly recorded in a measurement sheet/register/relevant documents by the contractor / authorized representative of the contractor and the Engineer-in-charge.
d. The measurements shall be clearly written indicating date of measurement, location, reference to drawings, if any and jointly signed.
e. The Contractor shall be required to furnish satisfactory job completion report to GIPCL. The submission of report should be on daily basis for executed works. The monthly bill payment shall be released based on the certified reports of the works.
f. Inspection of work will be done by Engineer-in-charge or his authorized representative. If the work is not found satisfactory Engineer-in-charge reserves the right to take suitable action and shall be binding to the contractor.

22. FORCE MAJEURE

i. In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under this Contract, relative obligation of the party affected by such Force Majeure shall be treated as suspended during which the Force Majeure Clause lasts.
ii. The term “Force Majeure” shall have herein mean riots (other than among the Contractor’s employee), Civil commotion, War (whether declared or not), invasion, act of foreign enemies hostilities, civil war, rebellion, revolution,

insurrection, military coup, damage from aircraft, nuclear fission, embargoes, quarantines, acts of god such as earthquake (above 7.0 magnitude on Richter scales), lightning, unprecedented floods, fires not caused by the Contractors negligence and other causes which the Contractor has no control and accepted as such by GIPCL whose decision shall be final and binding. Normal rainy season and monsoons are not Force Majeure.

iii. Upon occurrence of such causes and upon its termination, the party alleging that it has been rendered unable as aforesaid, thereby, shall notify the other party in writing by registered notice within 24 (twenty-four) hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of its claim.

iv. Time for performance of the relative obligation suspended by the Force Majeure shall stand extended by the period for which such clause lasts.

v. If works are suspended by Force Majeure conditions lasting for more than two (2) months, GIPCL shall have the option of cancelling this Contract in whole or part thereof, at its discretion.

vi. The Contractor shall not claim any compensation for Force Majeure conditions and shall take appropriate steps to insure men and materials utilized by it under the Contract well in advance.

23. INDEMNITY

The Contractor shall indemnify and keep harmless GIPCL from and against all actions, proceedings, claims, demands, losses, costs, damages and expenses whatsoever which may be brought against or suffered by GIPCL which it may sustain, pay or incur as a result of or in connection with the performance/ purported performance/ non-performance of the contract by the Contractor. In case, in any litigation pertaining to labour employed through contractor if any direction or order is issued by court at any point of time the contractor shall comply with and implement such direction or order whether passed at the time of award of contract or during the pendency of contract.

Further, the Contractor shall indemnify the GIPCL against all consequences arising and affecting GIPCL owing to the compliance of the orders by the Contractor.

24. GOVERNING LAW AND JURISDICTION

This tender document and contract shall be governed by the laws of India and the Courts at Surat shall have jurisdiction regarding the same.

25. Where any portion of the General Condition of Contract is repugnant to or at variance with any provisions of the Special Condition of Contract, then unless a different intention appears, the provision of the Special Conditions of Contract shall prevail to the extent of such repugnancy or variance.

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SECTION-D
SPECIAL CONDITIONS OF CONTRACT

1. DETAIL SCOPE OF WORK

1.1 CIVIL WORKS

The scope of work under this contract shall broadly include, but not be limited to, the execution and completion of all associated Civil works (foundations, footings, flooring, associated area development works, etc…) at Surat Lignite Power Plant (SLPP) for construction of two nos. of Pre-Engineered Building (PEB) Structural Storage Sheds near warehouse.

Scope of work includes all Civil works for construction of new 02 nos. of PEB structural storage sheds near existing warehouse at Surat Lignite Power Plant, Village; Nani Naroli, Dist. Surat, as per detailed specification, drawing and as specified in item nomenclature of Bill of Quantities.

The scope of work covered in this specification consists of collection of all site related data, supply of all materials, labours, fuel, oils, equipment/machinery, AJAX Machine with weighment printing facilities for concrete works, 02 bags capacity Batching Mixture machines as a stand by arrangement, trimix concrete floater, poker vibration, surface vibrator, Concrete needle Vibrators, Water Tanker, Excavator, JCB, Roller, earth compactors, Heavy capacity dewatering pumps, dumpers, tractor with trolley, level machine, total station for layout, cube testing machine and other laboratory equipment’s as required for field quality control, all type of consumables, approved construction materials, etc. as per detailed Technical Specifications for completion of Civil work on item rate basis. The scope shall include deployment of complete Vacuum Dewatered Flooring (VDF) system comprising vacuum pump, suction hoses, filter mats, screed vibrators, needle vibrators, power trowels, leveling instruments, joint cutting machines, and all ancillary equipment required for proper execution of VDF flooring. The scope of work also includes fixing of structural materials like insert plate, pipe sleeves, foundation bolts, etc… by using standard templates (provision for providing required size & nos. of templates is included in scope of work with no any additional payment), anchor bolt, edge angle, nuts & bolts, etc. as per details given in the tender document. The scope works shall cover for all services required for completion of Civil works in all respect. The scope will cover but not limited to the following buildings / structures / systems / facilities.

The scope of work in general comprises all types of **Civil Works**, including but not limited to:

- Area grading and site clearing,
- Excavation including dewatering, backfilling, and compaction,
- Foundations, plinth protections, drains & flooring,
- Plain and Reinforced Cement Concrete (PCC & RCC) works,
- Contractor shall explore possibility of available RMC in the vicinity (within about 20KM lead from Surat Lignite Power Plant) for major concreting as directed by Engineer-in-charge.
- Masonry works, rubble soling, flooring, plastering, and tiling,
- Civil painting,

- Laying of Hume pipes,
- Reinforcement & shuttering work for foundation, pedestal, plinth beam, lintel beam, drain, coping, column, etc
- RCC Pedestals including foundation bolt embedment / sleeve provision, Foundation bolt fixing.
- Non-shrink Grouting work.
- Anchor fastening work.
- Expansion joint work.
- Coordination with utility agencies for water and temporary power connections, if required.
- Coordination with PEB agency for proper layout marking, joint verification of layout, anchor bolt alignment/fixing/grouting, etc… for timely completion of entire project for construction of 02 nos. of PEB structural sheds near warehouse.

All works are to be carried out for construction of 02 nos. of PEB structural sheds near warehouse at **Surat Lignite Power Plant (SLPP)**, in accordance with the concept layout plan provided as Bid Drawings with this tender. However, Bid Drawings are indicative and for tendering purposes only. Final quantities will be based on approved Good For Construction (GFC) drawings by GIPCL/Consultant. Estimated quantities are indicative and may vary based on approved GFC. Bid Drawings are conceptual documents issued for bidding purposes. Final Good For Construction (GFC) drawings will be issued by GIPCL/Consultant after PEB design approval. However, grade of concrete of various items shall be as per SoR (SECTION-E).

CIVIL WORKS FOR PEB STRUCTURE (Up to Finished Floor Level and Other as per Site requirements). Civil works for the PEB sheds shall be limited up to finished floor level (FFL), except walls**, including:**

- Foundations (isolated/combined/pile, as applicable),
- Ground beams and plinth beams,
- Flooring up to finished floor level.
- Plinth protection works
- Roads & Drains work

Layout:

SHED-1

2. Purpose: Storage of heavy materials with 10 MT capacity EOT Crane.
3. Size: Length 45 Meter, Clear span 25 Meter with Gable Roof without any intermediate support. Total height about 10 Meter and working height 6-7 Meter.
5. Shed to be covered from top/roof and top sides (about 3 Meter for crane protection & to avoid rain water ingress) with Galvalume sheets. All sides open.
6. Plinth level up to 300 mm from OGL.
6. Flooring required for heavy material storage.
7. RCC foundation design required (GIPCL will arrange & provide) based on PEB structure design.
8. SBC at EL (-) 2.500 Meter is 137 KN/M2 (Kilo Newton per Square Meter).

SHED-2

2. Purpose: Only storage of heavy materials by movement of Hydra.

3. Size: Length 45 Meter, Clear span 15 Meter with Gable Roof or shed roof without any intermediate support and height 6 Meter.
4. Shed to be covered from top/roof and top sides (@ 1 Meter) with Galvalume sheets. All sides open.
5. Plinth level up to 300 mm from OGL.
6. Flooring required for heavy material storage.
7. RCC foundation design required (GIPCL will arrange & provide) based on PEB structure design.
8. SBC at EL (-) 2.500 Meter is 137 KN/M2 (Kilo Newton per Square Meter).

- **Quality Assurance & Control**

  All works shall be executed as per IS codes, CPWD specifications, and good industry practices. The contractor shall deploy qualified site engineers and provide all test reports (cube tests, compaction, material test certificates, etc.) as required.

  Contractor should submit FQP (Field Quality Plan), within 15 days of LOI and before any concrete work commences. Non-submission will force GIPCL to hold the works.

COMMON INFRASTRUCTURE & AREA DEVELOPMENT

- Construction of **internal rigid approach pavement** with fly ash filling & rubble soling.
- Fly ash filling & rubble soling works.
- Construction of associated drains.
- Provide a Plinth Protection on peripheral side of the both shed.

  The works shall include, without limitation, the following:

- Site development activities including area grading, clearing, leveling, excavation, and backfilling, fly ash filling, etc…
- Foundation works including RCC footings, pedestals, PCC, columns, beams, etc…
- Superstructure works including all RCC works, RCC grade slab, Rubble soling, masonry (brick/block) construction, and plastering.
- Any temporary works, scaffolding, formwork, shuttering, or support systems required for execution of the above.
- Transportation, handling, and storage of all materials, machinery, and tools required for execution
- All other works as specified in the technical specifications, drawings, Schedule of Rates (Section-E), and as may be reasonably inferred or directed by the Engineer-in-Charge for the satisfactory completion of the scope of works.

  The Contractor shall execute the works in full compliance with:

  - The technical specifications, drawings, standards, and codes provided in the Tender, and Prevailing IS codes.
  - Instructions from the Engineer-in-Charge, and
  - All applicable statutory and regulatory requirements.

This scope is comprehensive and inclusive of all activities required to deliver a fully functional, structurally sound, and ready-for-use, whether or not each specific item is mentioned herein but is required for the successful completion of the project.

All construction shall conform to relevant Indian Standards, CPWD norms, and GIPCL’s safety and quality requirements, ensuring durability, hygiene, and functionality of the facilities, following good standard Engineering practice for safety, quality & workmanship.

GENERAL SPECIFICATIONS FOR CIVIL WORKS

A. Dismantling Work

- All dismantling activities shall be carried out in a controlled manner strictly as directed by the Engineer-in-charge to ensure safety and minimal disruption.
- Prior written permission must be obtained from the Engineer-in-charge before commencing any dismantling work.
- In emergencies, the contractor shall arrange a compressor with a breaker within 24 hours, without claiming additional payment except for breaker supply costs.
- The dismantling rates shall be comprehensive, covering labor, materials, tools, breakers, debris disposal to designated external locations, and all associated work.

B. Earthwork, Filling, and Dressing

- The scope and rates for earthwork, filling, and dressing shall strictly follow the item nomenclature detailed in the contract.
- Rates shall be inclusive of all labor, materials, and machinery such as augers, JCBs, tractors, dumpers, dewatering equipment, and other tools as specified.
- Contractors must secure prior permits before starting excavation, ensuring protection of underground cables and personnel safety.
- Any damage to cables or pipes due to contractor negligence shall be repaired at the contractor’s cost, recoverable from their bills.
- For major excavation, contractors shall maintain accurate level records as directed by the Engineer-in-charge.
- Surplus excavated materials must be disposed of outside the premises responsibly, maintaining site cleanliness.

C. Foundation and Concrete Work

- Approved mix design shall be submitted and obtained prior to commencement of concreting work.
- Weigh batching shall be mandatory.
- The contractor’s scope for foundation and concrete works aligns with the item nomenclature, encompassing all designated locations.
- Proper curing shall be carried out for a minimum period as per IS standards, and no extra payment shall be made for the same.
- Rates include labor, materials, tools, equipment, and all necessary resources.

- Samples of materials must be approved by the Engineer-in-charge prior to supply and use at site.
- Contractor shall maintain all equipment in proper working condition, including standby arrangements to avoid delays.
- Pour cards must be prepared and signed off by the Engineer before any major concrete pours.
- Quality control equipment and testing apparatus must be available onsite to ensure compliance with standards.
- Any defective or substandard work shall be dismantled and redone by the Contractor at no extra cost.

D. Brickwork, RR Masonry, Plaster, and Flooring

- Scope and rates shall correspond to the specified item nomenclature.
- Contractor shall provide skilled masons for all brickwork, plaster, flooring, activities.
- Rates include labor, materials tools, tackles, and equipment.
- All materials must be pre-approved by the Engineer-in-charge through sample submission.
- Only standard and approved brand materials are permitted for use.

E. Flooring (including VDF/Tremix flooring):

- The Contractor shall deploy trained manpower and specialized equipment for execution of Vacuum Dewatered Flooring (VDF).
- Proper leveling, compaction, vacuum dewatering, and finishing shall be ensured to achieve a dense, smooth, and crack-free surface.
- Surface tolerances, panel layout, and joint cutting shall be carried out as per approved drawings and instructions of the Engineer-in-charge.
- Curing of flooring shall be carried out for the specified duration, and no extra payment shall be made for the same.
- Any undulations, cracks, or surface defects shall be rectified by the Contractor at no extra cost.

F. Painting

- The scope and rates shall be as per item nomenclature and include all labor, materials, tools, tackles, and equipment.
- Contractors must maintain detailed records of surface preparation and each paint coat applied.
- All painting materials require prior sample approval from the Engineer-in-charge.
- Only standard, approved brand paints and materials are allowed on site.

1.2 GENERAL SCOPE OF WORK

All works under this contract shall be executed strictly on an item rate basis as per the detailed specifications and item descriptions outlined in Section-E of the Schedule of Rates (SoR). The contractor is obligated to perform all work within the stipulated time frame provided in the tender documents, ensuring

that all activities meet the highest standards of engineering, design, workmanship, quality, and maintain proper line and level as directed by the Engineer-in-Charge. The contractor shall mobilize adequate manpower, equipment, and resources to ensure timely and efficient completion of the entire scope of work.

All materials supplied by the contractor must be procured from reputed and approved manufacturers and meet standard quality benchmarks. Prior to any supply to the site, material samples must be submitted for approval by the GIPCL Engineer-in-Charge, ensuring compliance with project requirements and preventing substandard inputs.

It is understood that the contract’s scope is comprehensive and inclusive of all works necessary for the complete and effective execution of the project, even if certain tasks are not explicitly mentioned in the tender documents. This includes any incidental or ancillary works that are essential to fulfill the contract requirements within the agreed timelines. All works shall adhere to the applicable specifications, safety norms, and legal and statutory requirements, with strict enforcement to safeguard project quality and compliance.

Additionally, the contractor shall maintain on-site all statutory and legal documentation related to the equipment, machinery, operators, and drivers deployed under this contract. This includes but is not limited to registration certificates (RC books), Pollution Under Control (PUC) certificates, vehicle insurance policies, vehicle fitness certificates (where applicable), and valid driving licenses. These documents must be readily available for inspection by the Engineer-in-Charge upon request. Furthermore, vehicles including trailers and hydraulic trolleys shall not exceed six years from the date of their RTO passing certificate, ensuring safety and reliability of the fleet used on site.

1.3 SPECIFIC REQUIREMENT

The contractor shall possess and maintain an adequate number of good quality standard machinery, equipment, tools, and tackles essential for executing scope of works.

These shall include, but are not limited to, AJAX Machine with weighment printing facilities, 02 bags capacity Batching Mixture machines as a stand by arrangement, trimix concrete floater, poker vibration, surface vibrator, Concrete needle Vibrators, Water Tanker, Excavator, JCB, Roller, earth compactors, Heavy capacity dewatering pumps, dumpers, tractor with trolley, level machine, total station for layout, cube testing machine and other laboratory equipments as required for field quality control, concrete breaker machines, hand carts or trolleys for internal movement of tools, lifting tools and tackles such as ropes and chain pulleys, field test apparatus, and other necessary equipment. The contractor is required to deploy these exclusively for this contract throughout the entire duration of the project.

A detailed list of all available machinery, equipment, and tools & tackles deployed at site shall be submitted by the contractor to the Engineer-in-Charge on a monthly basis

or as otherwise directed. This ensures transparency and enables timely monitoring of resource adequacy.

Should there be any shortfall in machinery, equipment, or tools and tackles that adversely affects the quality or progress of work, GIPCL reserves the right to impose penalties, make recoveries, or retain payments from Running Account (RA) bills. The quantum of such penalties or recoveries will be determined by the Engineer-in-Charge, based on the extent of impact on the affected works.

Furthermore, to meet the daily operational needs under this contract, the contractor must maintain a sufficient and functional set of tools and tackles in good working condition at the site at all times. The tentative list provided is indicative and not exhaustive, and the contractor shall ensure availability of all necessary equipment to ensure smooth and uninterrupted progress of work.

LIST OF REQUIRED EQUIPMENTS, TOOLS & TACKLES

Sr. No.	Description	Probable Quantity
1.	AJAX Machine with auto printing facilities of weighment	1 no.
2.	Excavator/ JCB	01 nos.
3.	Earth compactors	02 nos.
4.	Road Roller	As required
5.	Heavy capacity submersible dewatering pumps	03 nos. with sufficient hose
6.	Dumpers, tractor with trolley	04 nos.
7.	Water Tanker	01 no
8.	Total Station survey instrument with staff	01 no.
9.	Concrete mixer (2-bag capacity) with weighment system	01 no
10.	Electronic Concrete vibrator	6 nos.
11.	Vibrator needles (60 mm)	4 nos.
12.	Vibrator needles (40 mm)	4 nos.
13.	Shuttering material	150 sqm
14.	Staging & Scaffolding material	As per requirement
15.	Concrete cube mold	6 nos.
16.	Concrete drill machine	1 no.
17.	Hand trolley / Hand cart	2 nos.
18.	Hand lamp with holder & 100 Meter four core cable	2 set
19.	Plate vibrator	1 no.
20.	Concrete breaker machine	1 no.
21.	Ladder up to 10 meter	1 no.
22.	Power supply cable with extension board, ELCB	100 RM minimum
23.	Vacuum dewatering pump with water separator	4-5 nos.
24.	Vacuum mats (filter mats set)	Sufficient quantity
25.	Screed vibrator / vibrating screed	1 no.
26.	Power floater / power trowel (trimix machine)	1 no.
27.	Groove cutter / joint cutting machine	1 no.

NOTE:- The Contractor shall note that above list is not exhaustive and if any additional tools & tackles or equipment, machinery etc., are required for proper performance of the contract, the contractor shall also arrange the same immediately without any extra cost to GIPCL.

1.4 FAILURE DURING EMERGENCY

During any emergencies, contractor shall have to carry out given works by deploying additional resources within four-hour notice period failing which GIPCL reserves the right to carry out this work by engaging other party or may impose appropriate penalty in lieu of any direct or indirect losses occurred.

The expenditure occurred due to such situations, the Contractor will be held responsible and the same will be recovered from the Contractor's monthly bill / any other pending bills/available dues along with 10% overhead charges with GST.

For repetitive failure in completion of specific works in specific time line for more than three incidents, GIPCL reserve the right to terminate the entire contract by forfeiting all pending dues, Security Deposit & other retention money (if any), after giving 15 days' notice to the contractor & this will be binding to the contractor.

1.5 SPILLAGE OF MATERIAL

Contractor shall take due care to avoid any spillage of material while loading / transporting / handling. To avoid spillage of material, overloading / heaping shall be avoided by the contractors. Trolleys/trailers/Transport carrier shall be in good condition & leak proof to avoid any leakage of materials.

In case of any spillage, contractor shall have to remove such carriers immediately from site and contractor shall be responsible to clean up that area at their cost otherwise GIPCL shall get the work done by other agency at contractor's risk and cost with additional 10% overhead charges with GST.

1.6 DISPOSAL OF MATERIAL

The contractor shall be fully responsible for the removal and proper disposal of all surplus materials, debris, excavated earth, disposable scrap, and any other waste generated during the execution of the work. Disposal shall be carried out strictly outside the premises or at locations designated by relevant authorities, in full compliance with prevailing **GPCB (Gujarat Pollution Control Board)** norms and other applicable environmental regulations. GIPCL expressly disclaims any liability for consequences arising from improper disposal by the contractor.

All other scrap materials shall be disposed of in GIPCL's designated scrap yard as instructed by the Engineer-in-Charge. The contractor shall maintain a record of such scrap disposals in the prescribed standard format, duly authorized by GIPCL, to ensure traceability and accountability.

Prior to final bill submission, the contractor is required to furnish a written undertaking affirming that all materials have been disposed of responsibly outside the plant premises or at designated sites in accordance with prevailing government guidelines.

This undertaking shall indemnify and hold GIPCL harmless against any future liabilities, claims, or consequences arising from improper disposal. The contractor’s final payment shall be withheld until the receipt and acceptance of this undertaking by GIPCL.

1.7 SCOPE OF CONTRACTOR

1. The contractor shall provide and be fully responsible for all tools, tackles, materials (except for any specifically identified free-issue materials as per the Schedule of Rates), manpower, equipment, and other resources necessary to execute the contract. The contractor must ensure that all tools, tackles, and equipment are in sound working condition and maintained in a safe and serviceable state throughout the contract period. The contractor has to arrange transportation for lifting/shifting the materials at their own.
2. All consumable items required for the execution of work, including but not limited to cloth, cotton waste, kerosene, gas, diesel, petrol, lubricants, welding electrodes, fixtures, fasteners, and spare parts, shall be procured and supplied by the contractor at no extra cost to the owner.
3. The contractor shall arrange and provide all necessary safety equipment and Personal Protective Equipment (PPE) to their personnel for compliance with applicable safety standards and to ensure safe working conditions on site.
4. It is the sole responsibility of the contractor to provide necessary facilities, including accommodation, for their laborers and workforce at their own cost. No additional claims related to labor accommodation shall be entertained by the owner.
5. The contractor shall deploy qualified and experienced full-time site-in-charge personnel along with adequate supervisors and engineers to manage day-to-day execution of work. These personnel will be responsible for ensuring work complies with specifications, coordinating with the Engineer-in-Charge, obtaining necessary work permits, receiving and verifying materials issued by GIPCL, supervising daily work progress, recording joint measurements and work reports, preparing bills, managing manpower gate passes, and maintaining all statutory and legal compliance records.
6. A separate contract shall be awarded for the fabrication and erection of the Pre-Engineered Building (PEB) and associated structures above plinth or finished floor level. The Civil contractor of this tender shall fully cooperate and coordinate with the PEB contractor to ensure conformity with line and level requirements at the plinth level.
7. The Civil contractor of this tender shall provide all necessary support, coordination, and cooperation to the PEB contractor, Electrical agency, Mechanical Agency, Staff & Workers associated to Warehouse/Store of GIPCL, Security Personnel, etc… without any additional cost implications to GIPCL, ensuring smooth interface and integration of works between all working agencies.

1.8 TO REMEDY DEFECTIVE WORK

If any part of the work, or the entire work, is found to be damaged or defective—except when such damage arises solely from the actions or negligence of GIPCL—or if latent defects that were not readily detectable through proper inspection appear before final completion and acceptance, the contractor shall promptly and at their

own cost repair, replace, or rectify such damage or defects to the full satisfaction of the Engineer/GIPCL.

Under no circumstances shall defective or substandard work be accepted or retained, even if the contractor claims adherence to technical specifications. GIPCL maintains a strict no-compromise stance regarding the quality of materials, workmanship, and overall execution.

The contractor’s liability under this clause shall remain effective and enforceable despite any certification, whether interim or final, or the passing of accounts by GIPCL. This ensures that quality and durability are safeguarded beyond routine project closeout processes.

Third party testing:-
Contractor shall arrange third party testing of his materials supplied at GIPCL-SLPP for jointly collected random samples of materials and also concrete cubes as directed by Engineer-in-charge. All cost towards testing shall be borne by the contractor. The testing laboratory shall be as decided by GIPCL.

1.9 SAFE STORAGE OF MATERIALS

Contractor shall make all arrangement including construction of safe storage of all his materials, shuttering & scaffolding, consumable items, tool & tackles, equipments, PPEs, etc… whatsoever. Contractor shall be responsible for safe storage and security of all his belongings including materials and may depute full time guard for the security of all the items / materials to avoid pilferage, loss, damage & theft and he shall be responsible for safety & security. In any case, GIPCL will not be responsible for security & safety of items / materials / effects of contractor.

1.10 DAILY DIARY AND PROGRESS REPORT

A daily progress shall be provided to Engineer-in-charge. The CONTRACTOR will supply general information every day at 9:00 hours for the day preceding. Day to day instructions will be conveyed by GIPCL concern Engineer-in-charge to contractor’s authorized site-in-charge / supervisor/s and contractor shall acknowledge same and submit compliance on it as per requirement. A work instruction book may be maintained by contractor for proper accounting & follow-ups. The CONTRACTOR’S representative shall report every day to see these instructions and acknowledge them. Such instructions / reports may also be executed / maintained digitally if desired. The CONTRACTOR shall supply all information regarding availability of manpower, equipments, tools, etc… and progress of work, as is required by the OWNER for compiling the ongoing progress of work.

1.11 PLANNING & MONITORING OF WORK PROGRESS

1. After award of the work, Contractor has to submit schedule of work planning for completion of work with resources (i.e. manpower and material) mobilization planning within seven days.
2. Contractor shall mobilize the resources at site within 15 days from the date of LoI or work order whichever is earlier. GIPCL will closely monitor the agreed schedule against actual progress of work at site. If contractor failed to carry out work as per

agreed schedule and if contractor failed to mobilize required resources (manpower & materials) within given / allowed time line by written communication, GIPCL will execute the job through other agency at the risk and cost of the contractor with additional 10% overhead charges including GST.

3. The owner of contractor / proprietor / partner should be present for periodic progress review meeting & for further planning at office of GIPCL Surat Lignite Power Plant as desired by Engineer-in-charge (probable on weekly basis).

It is not the intent to specify herein all the works in the scope of this contract. The scope also includes all works necessary, which are not specifically mentioned here but required, for completion of entire scope of work in all respect within time bound period and are deemed to be included in the scope of the CONTRACTOR. All works shall conform to the specification. The works shall conform to high standards of quality and workmanship.

2. PRICE & RATES

This tender is based on the Schedule of Rates (SoR), and the final item rates will be determined based on the lowest gross total price offered through the e-Reverse Auction process, inclusive of GST.

Following the price discovery through the e-Reverse Auction, a pro-rata reduction will be applied to the quoted prices of all SoR items. The resulting item rates shall be comprehensive and inclusive of all costs, including but not limited to skilled and unskilled labor, supervisors, engineers, safety supervisors, insurance, safety PPEs, site safety arrangements, provision for site storage/site office, approved safety equipment, all necessary tools, tackles, equipment, machinery, spares and maintenance, staging, shuttering and scaffolding materials, hiring of specialized equipment and outsourcing to experienced agencies, all materials except those specifically issued free under the respective SoR items in Section-E, survey works, site visits for work identification, transportation, communication, mobilization and demobilization, loading, unloading, safe storage of materials, security and safety, fuel and consumables, and idle charges for labor, operators, drivers, machinery, and equipment due to unavailability of the work front, holding of work permits, or any unavoidable circumstances. The rates also include all applicable taxes, duties, royalties, rents, stamp duties, and other statutory levies imposed by Central, State, Local, or Municipal authorities. (Note: Item rates exclude GST, which is accounted for separately at 18% in the total estimated SoR value).

The item rates shall be deemed to cover all work as per specifications, including all leads and lifts, contractor overheads, profits, and any other costs necessary for the satisfactory and timely completion of the contract. Mobilization and demobilization costs for manpower, equipment, and materials shall also be included. The rates shall remain firm and fixed throughout the entire contract period and any extensions granted, without any escalation, including idle charges for labor, machinery, or overhead expenses, regardless of the reasons for delay, non-availability of work front, or other circumstances.

The contractor shall comply with all applicable labor and industrial laws and regulations at their own cost. In case of any default or non-compliance, GIPCL reserves the right to withhold payments until all legal liabilities are resolved.

The offered price must account for full mobilization of all required manpower, tools, tackles, materials, equipment, vehicles, and consumables necessary for the timely and satisfactory completion of the entire scope of work.

The contract quantity may increase or decrease based on day-to-day requirements; however, the item rates will remain unchanged. Payments will be made based on the actual quantities executed, as certified by GIPCL representatives.

3. CONTRACT / COMPLETION PERIOD AND LIQUIDATED DAMAGES

3.1 The contract / completion period *for scope of works* of both the sheds shall be 06 (six) months from the date of issuance of the Letter of Intent (LoI) and/or Work Order, whichever is earlier (*except 03 months of peak Monsoon, i.e. July, August & September*).

3.2 GIPCL/Consultant shall issue RCC foundation construction drawings for both the sheds within 30 days from date of LOI. Excavation, Construction of RCC Foundation, Pedestals & Beams, Backfilling, etc... for both the sheds in all respect including ready for handing over to PEB agency for erection of PEB Structure shall be within 03 Months from the date of release of Construction Drawings for Foundation, Pedestals & Beams. Foundation bolts with all required accessories will be issued to Civil work agency by PEB agency: within 70 days for both the sheds from the date of LoI.

3.3 Balance Civil works for both the sheds as per scope of work: Within 02 Months from the date of handing over of front.

3.4 GIPCL reserves the right to extend the contract period by up to an additional 03 (three) months on the same rates, terms, and conditions, without any price escalation and without entering into a new contract on sole discretion of GIPCL only. However, delay attribute to contractor beyond above schedules will attracts penalty as LD (Liquidated Damages) as per LD clause mentioned herein under.

3.5 If the scope of work is not completed by the Contractor, necessary LD will be deducted as per LD clause mentioned herein under and in the interest of work completion, GIPCL will extend the contract period appropriately (along with deduction of LD) as per contract requirement on the same rates, terms, and conditions without any price escalation or new contract on sole discretion of GIPCL.

3.6 GIPCL reserves the right to short-close the contract at any time by giving 01 (one) month’s notice, without assigning any reason.

3.7 The Contractor should prepare a detailed activity wise detail time schedule jointly with the Engineer-in-Charge within 07 days of receipt of LOI/Work Order as per contract period with each milestone. The WORK shall be executed strictly as per the time schedule which includes the time required for mobilization, testing, rectification (if any) and completion of given scope of work in all respects in accordance with Contract Document to the entire satisfaction of the Engineer-in-Charge.

3.8 The above detail time schedule (PERT/BAR network) shall be reviewed periodically and reports shall be submitted by the Contractor as directed by the Owner/Consultant. At any time, if contractor fails to execute the work or fails to mobilize the resources and equipments as per agreed schedule of work planning and/or as per directions of GIPCL / ENGINEER within the time frame, GIPCL shall get the work done by third party at the risk & cost of the CONTRACTOR with additional 10% overhead charges of GIPCL, including GST and all costs incurred in connection therewith shall be recoverable from the CONTRACTOR by the GIPCL

/ENGINEER as a debt or may be deducted by him from any money due or to become due to the CONTRACTOR.

3.9 In any case, contractor shall not be eligible to claim any compensation or reimbursement or price escalation which attributed to poor progress, poor quality work, rework, holding the work by GIPCL in case of decision or modification in proposed layout or due to any whatsoever reason.

3.10 Contractor shall not have any right for time extension or compensation or price escalation on account of delay due to late handing over of particular front by the GIPCL or any other reason whatsoever. However, GIPCL at its sole discretion may grant time extension only against the justifications submitted by the contractor in writing.

3.11 In order to complete the works timely as per approved completion schedule, contractor shall mobilize sufficient nos. of manpower & required material, resources, tools & tackles etc at locations simultaneously, including independent site supervisors.

3.12 DELAY AND EXTENSIONS OF TIME

3.12.1 The time allowed for carrying out the work as entered in the contract shall be strictly observed by the CONTRACTOR and shall be deemed to be of the essence of the contract on the part of the CONTRACTOR. The CONTRACTOR shall be allowed admittance to the site on the ‘Date of Commencement’ and he shall there upon and forthwith begin the work and shall proceed with the work with due diligence.

3.12.2 The CONTRACTOR agrees that the work shall be commenced and carried on at such points and in the order of precedence and at such times and seasons as may be directed by the OWNER/ ENGINEER in accordance with the schedule for completion of the work as outlined elsewhere. The CONTRACTOR declares that he has familiarized himself with the site and rights-of-way, with all the local conditions, and with all the circumstances which may, or are likely to affect the performance and completion of the work, and that he has allowed for such conditions. However, if a time schedule is submitted by the CONTRACTOR so as to keep the phasing of work generally in line with the time schedule drawn up and such time schedule after approval from the OWNER/ENGINEER shall be accepted and complied with by the CONTRACTOR and it shall form a part of the contract. The progress of work will be checked at regular monthly intervals and the percentage progress achieved shall be commensurate with the time elapsed after the award of the contract.

3.12.3 If the CONTRACTOR shall desire an extension of time for completion of work on the grounds of his having been unavoidably hindered in its execution or any other ground, he shall apply in writing to the OWNER within 7 days of the date of hindrance on account of which he desires such extension as aforesaid. This application shall invariably be accompanied by sufficient supporting valid documentation giving reasons for seeking such extension. No application for such extension shall be entertained if it is not received in sufficient time to allow the OWNER / ENGINEER to consider it and the CONTRACTOR shall be responsible for the consequences arising out of such negligence.

3.12.4 No necessity for an extension of time is anticipated but if untoward or extra-ordinary circumstances beyond the control of the CONTRACTOR should

arise, which in the opinion of the OWNER/ENGINEER should entitle the CONTRACTOR to a reasonable extension of time; such extension may be granted but shall not operate to release the CONTRACTOR from any of his obligations. For purpose of this clause, untoward and extraordinary circumstances are defined under clause 22.0 of General Condition of Contract. Under above circumstances, only extension of time may be granted but the CONTRACTOR will not be entitled to any additional compensation. In case of strike or lockout, the CONTRACTOR shall, as soon as possible, give written notice to the OWNER / ENGINEER, but the CONTRACTOR shall delay and shall do all that may reasonably be required to the satisfaction of the OWNER / ENGINEER to proceed with the work.

3.12.5 The OWNER shall have the right to require the discontinuance of the work, in whole or in part, for such time as may be necessary, should the condition of the weather or of flood or other contingencies make it desirable to do so in order that the works shall be well and properly executed. The CONTRACTOR shall have no claim for idle time, escalation etc. However, the OWNER will grant such extension of time for completion of the contract as he may think proper and sufficient in consequence of such delay.

3.13 LIQUIDATED DAMAGES (LD) FOR DELAY

3.13.1 In the event of the contractor failing to comply with the approved time schedule and if failing to complete all Civil foundations (as specified in clause no. 3.2 of special condition of contract), he shall be liable to pay as compensation, a sum equal to half percent (1/2%) of the “Total Contract Value” per week of delay as Liquidated Damages (LD). Even if foundation works completed as per above clause no. 3.2 but total works not completed within stipulated contract completion period, LD at 0.50% of Total Contract Value per week of delay will be recovered. However, the above amount of LD will be subject to maximum of 10% of the Total Contract Value. The LD from R.A bill will be deducted based on total contract value. However, at the end of contract, the LD will be calculated based on the executed value as per final bill & excess amount of LD deduction, if any, will be refunded back to the contractor.

3.13.2 The OWNER may without prejudice to any other method of recovery, deduct the amount of such damages from any money due or which may become due to the CONTRACTOR. In the event of extension of time being granted by the OWNER in writing for completion of work, this penalty clause will be applicable after the expiry of such extension period.

3.13.3 All sums payable by way of Liquidated Damages shall be considered as reasonable compensation to be applied to the use of the OWNER without reference to the actual loss or damage sustained and whether or not any damage has been sustained.

3.14 RISK & COST CLAUSE - ENGAGEMENT OF THIRD PARTY FOR CIVIL FOUNDATION WORKS ON CONTRACTOR'S DEFAULT

3.14.1 APPLICABILITY

This clause shall apply in the event the Contractor fails to complete the RCC civil foundation works (including column pedestals, ground beams, and all associated embedments/anchor bolts for both Shed-1 and Shed-2) within the stipulated completion

period of Three (03) months from the date of issue of Good-for-Construction drawings by GIPCL/Consultant, as specified under Cl. 3.2 of this Section-D, or within any extended period duly granted in writing by GIPCL.

This clause is without prejudice to and operates cumulatively with: (a) the Liquidated Damages provisions under Cl. 3.13 of this Section-D; (b) the Security Deposit/Performance Bank Guarantee provisions under Section-C; and (c) any other rights and remedies available to GIPCL under this Contract, at law, or in equity.

3.14.2 NOTICE OF DEFAULT AND CURE PERIOD

Upon the Contractor's failure to achieve the foundation completion milestone within the stipulated period, GIPCL shall issue a formal written Notice of Default (Notice-01) to the Contractor by official email / registered post / speed post / courier with acknowledgement due, specifying:

a. The nature and extent of the default, including the quantum of work remaining incomplete;
b. A Cure Period of Seven (07) calendar days from the date of receipt of Notice-01, within which the Contractor must demonstrate satisfactory progress — defined as completion of not less than fifty percent (50%) of remaining foundation work within the Cure Period - or submit an acceptable recovery programme with resource deployment plan duly approved by GIPCL/Consultant.
c. GIPCL's intention to engage a Third Party at the Contractor's risk and cost if the default is not remedied within the Cure Period.

If the Contractor remedies the default to GIPCL's satisfaction within the Cure Period, GIPCL may, at its sole discretion, refrain from invoking this clause for that specific instance of default. Such forbearance shall not constitute a waiver of GIPCL's rights for any subsequent default.

3.14.3 ENGAGEMENT OF THIRD PARTY AT CONTRACTOR'S RISK AND COST

If the Contractor fails to remedy the default within the Cure Period specified in Cl. 3.14.2 above, GIPCL shall be entitled, but not obligated, to engage a Third Party agency (hereinafter referred to as "Third Party Agency" or "TPA") to carry out all or part of the remaining civil foundation works, including but not limited to:

a. RCC column footings and pedestals for Shed-1 and/or Shed-2;
b. Ground beams and grade slab as required;
c. Setting, fixing and grouting of foundation bolts, sleeves and anchor bolt embedments;
d. Non-shrink grouting under base plates after PEB column erection, if not completed by the original Contractor;
e. Any other civil work directly associated with enabling the commencement of PEB structural erection by the PEB Contractor.

The engagement of a Third Party Agency shall be at GIPCL's sole discretion and shall be conducted through an appropriate procurement process as per GIPCL's rules and prevailing financial powers. The Contractor shall have no right to object to the identity, terms, or rates of the Third Party Agency engaged by GIPCL under this clause.

3.14.4 CONTRACTOR'S FINANCIAL LIABILITY — RISK & COST RECOVERY

All costs and expenses incurred by GIPCL in engaging and executing the said works through the Third Party Agency shall be entirely at the risk and cost of the original Contractor (hereinafter in this clause referred to as "Defaulting Contractor"). The total amount recoverable from the Defaulting Contractor under this clause shall be computed as follows:

TOTAL RECOVERABLE AMOUNT =
[Actual Additional Cost to Third Party Agency (A)]
+
[10% of (A) = GIPCL Overhead / Supervisory Charges (B)]
+
[GST applicable on (A + B) at prevailing statutory rate (C)]
i.e., Total Recovery = A + B + C = A + 10%(A) + GST on (A + B)

For the purpose of this clause:

(a) "Actual Additional Cost of Third Party Agency" (A) shall mean the total extra amount (over and above payable as per original contractor’s order rate/s) certified and paid / payable by GIPCL to the Third Party Agency for the completed scope, including any mobilization, testing, or incidental costs directly related to the works undertaken by the TPA under this clause. It shall NOT include any amount attributable to work within the Defaulting Contractor's own completed scope.

(b) "GIPCL Overhead / Supervisory Charges" (B) at the rate of Ten Percent (10%) of the Actual Additional Cost (A) shall be levied by GIPCL to compensate for the additional management, supervision, coordination, and administrative burden borne by GIPCL as a result of the Contractor's default. This charge is not subject to negotiation or reduction by the Contractor.

(c) "GST" (C) means Goods and Services Tax (including CGST + SGST or IGST as applicable) levied on the gross taxable value of (A + B) at the rate prevailing on the date of GIPCL's invoice / debit note to the Defaulting Contractor. The Defaulting Contractor shall bear the full GST liability and shall not be entitled to input tax credit on amounts recovered under this clause.

(d) The amount computed under this clause is in addition to and shall not be reduced or offset against Liquidated Damages recovered under Cl. 3.13 of this Section-D. Both recoveries operate independently and simultaneously.

Illustration (for reference only — not a cap on recovery):

Recovery Component	Illustration (Example Figures)	Remarks
(A) Actual Additional TPA Cost	₹ 15,00,000	*Certified payments to TPA*
(B) GIPCL Overhead @ 10% of (A)	₹ 1,50,000	*10% of ₹15,00,000*
Subtotal (A + B)	₹ 16,50,000	*Base for GST*
(C) GST @ 18% on (A + B)	₹ 2,97,000	*At prevailing rate*

Recovery Component	Illustration (Example Figures)	Remarks
TOTAL RECOVERABLE from Defaulting Contractor	**₹ 19,47,000**	*Recovered from pending bills / SD; independent of LD*
(D) LD (simultaneously under Cl.3.13.1 @ 0.5% / week)	**₹ (0.50% of Total contract value per week in line with Cl. 3.13)**	*Computed separately per LD clause; also recovered*
CUMULATIVE RECOVERY (Cl.3.14 + Cl.3.13)	**₹ 19,47,000 + (D)**	*Both operate simultaneously*

3.14.5 RECOVERY MECHANISM AND ORDER OF PRIORITY

GIPCL shall recover the amount computed under Cl. 3.14.4 from the Defaulting Contractor through the following mechanisms, applied in the order listed below:

(i) First, by deduction from any pending Running Account (RA) bills / or other amounts payable to the Contractor under this Contract at the time of or subsequent to the risk & cost engagement - without any further notice, consent, or judicial order;
(ii) Second, if pending bills are insufficient to cover the full recovery, by invocation and appropriation of the Contractor's Security Deposit / Performance Bank Guarantee (PBG) furnished under Section-C of this Contract, to the extent of the outstanding recovery amount;

3.14.6 TERMINATION OF CONTRACT AND FORFEITURE OF SECURITY DEPOSIT

Without prejudice to the recoveries effected under Cl. 3.14.4 and Cl. 3.14.5, GIPCL shall further be entitled to terminate this Contract if any one or more of the following conditions exist:

(a) The Defaulting Contractor has failed to remedy the foundation completion default even after expiry of the Cure Period under Cl. 3.14.2 and GIPCL has been compelled to engage a Third Party Agency under Cl. 3.14.3; OR
(b) The Contractor has abandoned the works or failed to mobilize resources within Seven (07) days of a written direction by GIPCL/Engineer-in-Charge to recommence; OR
(c) Accumulated Liquidated Damages under Cl. 3.13.1 have reached the maximum cap of Ten Percent (10%) of the Contract Value and the delay continues beyond such cap; OR
(d) In the reasonable opinion of GIPCL/Engineer-in-Charge, the Contractor is not in a position to complete the remaining civil works within a time that would permit commencement of PEB structural erection without causing further compensable delay to the PEB contractor.

Before exercising the right of termination, GIPCL shall issue a formal Termination Notice to the Contractor by official email / registered post / speed post, providing a final cure period of Fifteen (15) calendar days from the date of receipt of such notice. If the Contractor fails to remedy the default within said fifteen days, GIPCL may, without any further notice or formality, terminate this Contract by written order.

Upon termination of this Contract under this clause, the following consequences shall automatically ensue:

(i) The ENTIRE Security Deposit / Performance Bank Guarantee furnished by the Contractor under Section-C shall stand forfeited in full forthwith — unconditionally, without any deduction or apportionment, and without any requirement for further notice, demand, or legal proceedings. The forfeiture of the Security Deposit shall be in ADDITION to, and shall not be adjusted against, any Liquidated Damages already recovered or recoverable under Cl. 3.13 or any Risk & Cost amounts already recovered or recoverable under Cl. 3.14.4;
(ii) GIPCL shall take possession of the site, all temporary works, all materials brought to site and paid for under RA bills, all shuttering, scaffolding, and plant & machinery deployed at site by the Contractor, without any obligation to make further payment to the Contractor for the same. Materials not paid for under RA bills may be used by GIPCL/TPA at site without further payment to the Contractor to the extent of their assessed value against the outstanding recovery;
(iii) Any amounts remaining payable to the Contractor (if any) after full deduction of: (a) Risk & Cost amounts per Cl. 3.14.4; (b) Liquidated Damages per Cl. 3.13.1; (c) any other outstanding dues, deficiencies, or liabilities under this Contract - shall be paid to the Contractor within Ninety (90) days of issue of the final account, subject to submission of a “No-Claim No-Arbitration” Certificate, Indemnity Bond and clearance of all labour dues as per applicable statutory requirements, as per tender terms.
(iv) Termination under this clause shall be without prejudice to GIPCL's right to recover any additional losses caused to GIPCL.

3.14.7 GIPCL'S OBLIGATION TO MITIGATE

GIPCL shall use reasonable commercial efforts to procure the Third Party Agency's services at competitive market rates commensurate with the prevailing SoR / market rates applicable for civil works of similar nature in the region. GIPCL's obligation to mitigate shall, however, not extend to conducting a full public tender process for the Third Party engagement if, in GIPCL's reasonable judgment, the exigency of the situation (particularly the impact on the PEB Contractor's schedule) does not permit the time required for such process. In such cases, GIPCL may engage the TPA through limited tender or negotiated procurement as per its applicable financial powers and procurement procedures.

The Defaulting Contractor shall not dispute the reasonableness of GIPCL's procurement procedure for the TPA on the ground that a cheaper alternative could have been found through open tender, provided GIPCL can demonstrate that the procurement was carried out in good faith and in the interest of timely completion of the Project.

3.14.8 NON-WAIVER

No delay or failure by GIPCL in exercising any right under this clause, and no partial exercise of any right, shall constitute a waiver of that right or any other right of GIPCL under this Contract. GIPCL's right to invoke this clause shall survive any extensions of time granted to the Contractor under this or any other clause of this Contract.

3.14.9 CONTRACTOR'S OBLIGATIONS DURING THIRD PARTY ENGAGEMENT

During the period of TPA's operations under this clause, the Defaulting Contractor shall:

a. Not obstruct, interfere with, or delay the Third Party Agency's access to the site, materials, or any portion of the works;
b. Immediately remove, upon GIPCL's written direction, any of its own plant, materials, or personnel from areas where the Third Party Agency is required to operate;
c. Continue to be responsible for the safety and security of any works already completed by it, to the extent not taken over by GIPCL or the TPA;
d. Provide to GIPCL/Engineer-in-Charge all drawings, specifications, mix designs, purchase orders, and other contract documents relating to the works, within Forty-Eight (48) hours of GIPCL's written request, to enable seamless handover to the TPA;
e. Remain jointly and severally liable with the TPA for the quality and completeness of works that were jointly measured and certified by GIPCL - to the extent attributable to materials or work previously supplied by the Defaulting Contractor.

Any failure by the Defaulting Contractor to comply with its obligations under this sub-clause shall constitute a further breach entitling GIPCL to issue the Termination Notice under Cl. 3.14.6 without further Cure Period.

CROSS-CONTRACT COORDINATION NOTE (Section-D, Cl. 3.14.10):
GIPCL reserves the right, upon termination or risk & cost engagement under this clause, to assign the balance civil foundation works directly to the PEB Turnkey Contractor (appointed under Bid No. SLPP/Civil/WH/PEB Sheds/2026) or any other agency - at negotiated rates based on this Contract's SoR, without the requirement of a fresh public tender. Any costs so incurred shall be recovered from the Defaulting Contractor under Cl. 3.14.4 above. The Defaulting Civil Contractor shall have no claim whatsoever against GIPCL or the PEB Contractor arising from such assignment.

Further, any delay costs imposed by the PEB Contractor on GIPCL, directly attributable to Civil Contractor's failure to provide civil foundations within the stipulated period, shall be recoverable from the Defaulting Civil Contractor as part of GIPCL's losses under this clause - over and above the LD cap and Security Deposit forfeiture.

3.15 REQUIREMENTS TO ADHERE TIME SCHEDULE

The CONTRACTOR shall, within two weeks of receipt of the Letter of Intent, submit to the OWNER for his approval, a detailed work schedule showing how he proposes to carry out the work, specifically mentioning time periods as well as dates of commencement and completion of each activity including mobilization schedule for manpower & materials, equipment (as per requirements of scope & specifications) and such approved schedules must be strictly adhered by the CONTRACTOR. The schedules are to be reviewed periodically with the OWNER to ensure that the completion date will be met or to institute corrective steps (at no extra cost to the OWNER) to adhere to the completion dates.

The OWNER reserves the right to revise the schedule at his discretion in order to keep up to the completion date and to suit the project requirement and such alterations shall not entitle the CONTRACTOR to any extra payment.

Further following points to be adhered & followed as per requirements and directed by Engineer-in-charge.

- The whole works must be proceeded with, within such sections and at such times and in such order and manner as described in these specifications and as directed by the ENGINEER-in-charge. No extra payment or relaxation in the rates will be permitted on account of this.
- The CONTRACTOR should furnish the ENGINEER-in-charge with weekly progress reports on the Saturday of every week in the following format or format jointly finalized:-

Item / activity of work	Schedule for the week	Actual Progress	Reasons for short fall, if any	Steps taken to make up the short fall

- Extension of contract period only under force majeure conditions for completion of work shall be granted by the OWNER, equal to the time ‘Force Majeure’ conditions were in existence and as applicable to this contract (refer clause no. 22 of General Conditions of Contract.
- Idle time charges or price escalation for any reason whatsoever shall not be entertained by the OWNER.
- If the CONTRACTOR fails to maintain the stipulated time of completion specified herein above, he shall be liable to pay penalty as set out in above clause no. 3.13 of LD. It shall be clearly understood that failure to meet interim completion dates shall also attract penalty as per conditions of contract laid down in this document.
- Work / mobilization shall commence at the site within 15 days from the date of receipt of the Letter of Intent or work order, whichever is earlier by arranging & mobilizing required resources and materials and maintain necessary number of machinery and equipment to guarantee the agreed rate of progress of the work as per schedule.
- Work covered under this specification shall be completed in all respects within stipulated time of 06 months from the date of Letter of Intent (LOI), except 03 months of peak monsoon.

4. TERMS OF PAYMENT

A. Conditions of Payment:

The contractor shall raise the running invoices on monthly/quarterly basis in duplicate, one original in physical form and soft copy in MS Excel format (soft copy of measurement sheets & bill abstract with original joint measurement records shall be submitted one week prior to submission of bill/invoice) as directed by Engineer-in-charge in respect of the work performed or completed along with the documents as mentioned hereinafter & in subsequent clauses.

However, respective R.A. Bill of contract shall only be entertained for 100% payment as per following terms, only if contractor provides satisfactory progress of Civil foundation works (minimum pro-rata completion of Civil foundation works for both sheds with respect to actual quantities in line with GFC drawings and stipulated completion period of foundations). GIPCL may decide & recommend for release of partial payment of such R.A. bill/s as deemed to suit based on review of ongoing progress of foundation works.

On receipt of the invoice complete in all respects and with all the said documents, the payment in respect of the same shall be made within 21 days of such receipt of a complete invoice as per the following terms of payment:

(i) 100% of monthly RA bill along with 100% taxes shall be released against the work executed duly certified by GIPCL. Income Tax (IT) will be deducted at source from monthly RA bills as per the rules in force.

(ii) Contract Security deposit/irrevocable PBG at 10% of contract value (excluding GST) shall be submitted as per clause no.: 1 of Section-C.

(iii) GST shall be paid along with bills after fulfillment of following terms.
   (a) Submission of copy of registration certificate issued by GST Authority (to be furnished only once).
   (b) Citing the GST Registration no., HSN/SAC Code and the date of issue of registration certificate on invoices.
   (c) Citing GIPCL’s GST no. along with contractor’s GST registration no. and the date of issue of registration certificate on invoices.
   (d) Claim of GST amount with percentage (%) separately shown on the invoices.
   (e) The contractor shall be required to submit the proof of payment of GST of previous month/quarter, as may be applicable as & when demanded by GIPCL/Owner/company.
   (f) Contractor shall inform the GIPCL in the event of its registration certificate is cancelled or discontinued for whatsoever reason.
   (g) The contractor shall also mention on their invoice the HSN/SAC code as applicable under the GST laws under which GST is levied and a self-certified authentic third-party evidence (www.cbic-gst.gov.in) shall be adduced to that effect by the contractor.

(iv) At the time of submission of the first RA Bill, the Contractor shall submit a certificate from Engineer-in-charge regarding availability of tools & tackles, equipments, vehicles, etc at site as per requirement of contract. The Contractor shall also furnish the checklist as per **ANNEXURE-A** enclosed with the Section-F of tender document along with the RA bill of respective month as applicable.

(v) While making running account payment, the following deductions may be made by GIPCL, if applicable:
   a. Cost of materials issued, if any, by GIPCL and to the extent consumed in the work.
   b. Security deposit recoverable if any.
   c. Advance on materials / work progress advance payments, if any.
   d. LD/Penalty for delayed delivery, penalty for delayed execution of work, recovery of charges for the work done by other contractor due to delay or any other reason, if applicable.
   e. Any other dues recoverable by GIPCL from the contractor under the contract.

(vi) The contractor, along with monthly RA/final bill shall submit copy of P.F. Challan, wages register, attendance sheet & ECR statement indicating the employee and employer's P.F contribution with respect of employees employed by him for the contract at GIPCL site along with format for submission of these documents provided in Section-F (Annexure-I).

(vii) The Contractor shall submit his Final Bill within a period of four months of the expiration or earlier termination of the contract or any extensions that may be

granted by GIPCL to the Contractor. GIPCL shall not entertain any bill for any work item after expiration of period of four months. After the final bill amount is certified by GIPCL for payment and the same is made known to the contractor by GIPCL & accepted by contractor, "No claim - No arbitration certificate" to be submitted to GIPCL to release the Final Bill.

(viii) The Contractor shall include all his claims in the Final Bill submitted by him and accordingly the final bill submitted by the Contractor shall be deemed to be inclusive of all and whatsoever the claims that the Contractor may have from GIPCL. The Contractor shall not be entitled to claim any amounts which are not mentioned in the Final Bill and the Contractor shall be deemed to have waived any claims not mentioned in the Final Bill and shall not be entitled to recover the same from GIPCL subsequent to the submission of the Final Bill on any account and GIPCL shall stand absolved of all its liabilities in respect of any such claims not raised by the Contractor in his Final Bill.

B. Validity and Uniformity of Rates

The rates shall be valid and shall remain unaltered and firm for the Contract Period and for any agreed extension thereof.

5. SUBMISSION OF TECHNICAL DOCUMENTS TO THE ENGR-IN-CHARGE

Contractor shall submit following documents to the Engineer-in-charge for verification purpose of the bill:-

(i) **Measurement sheet along with joint record of work done (JMR) & bill abstract** duly signed by authorized representative of contractor and GIPCL Engineer in **standard Measurement Book / sheet**.
(ii) Contractor's Material Inward challan copies, duly signed & stamped by GIPCL material Gate security personnel.
(iii) Material test reports, field test reports etc… as per GIPCL's approved quality plan for specific major works or as directed by Engineer-in-charge.
(iv) Any other required documents and/or records in support of claim made by contractor in his bill as directed by Engineer-in-charge.

The bill will not be entertained without submission of above documents.

6. SUBMISSION OF STATUTORY COMPLIANCES WITH EACH BILL

Contractor shall submit the bill/s of work carried out along with following documents.

(i) Copy of statutory compliance like labour license, wages payment register, EC Policy, PF paid Challan with ECR, TRRN confirmation by EPFO/Bank, Bank statement, etc… along wage certificate pertaining to respective bill period / previous month/s of bill period with Annexure-I provided in Section-F.
(ii) Notarized Indemnity Bond in case of Final bill.
(iii) No claim - No arbitration certificate as per PRO-FORMA (Annexure-D in Section-F), after the final bill amount is certified by GIPCL for payment and the same is made known to the contractor by GIPCL & accepted by the contractor.

Bill submitted without any of the above documents shall not be processed for payment.

7. MEASUREMENT & DAILY REPORTS

Measurement Standards:

All work shall be measured as **completed (finished) work** in accordance with the item nomenclature defined in the SoR (Schedule of Rates in Section-E), Detailed Technical Specifications (Section-G) and as per relevant **IS codes and standard industry practices**.

Where there is repugnant to or at variance with any provisions of the relevant IS codes and this tender document, then unless a different intention appears, the provision of the conditions & specifications of this Tender documents / contract shall prevail to the extent of such repugnancy of variance.

Joint Measurement Recording (JMR):

- Joint measurements shall be **recorded immediately** upon completion of each identifiable and measurable scope item of work.
- These measurements must be signed jointly by GIPCL's Engineer-in-Charge (or authorized representative) and the contractor's site representative.
- The **original signed Joint Measurement Records (JMRs)** shall be submitted along with each RA bill. Bills without original JMRs will not be processed for payment.

Theoretical Weight Consideration (for Steel Items):

- For fabricated structural steel and reinforcement steel, **standard theoretical unit weights** (as per IS standards) shall be adopted for measurement and billing purposes.
- **No rolling tolerance** or weight variation from supplier shall be considered for additional payment.

Daily Records & Reporting Infrastructure:

To ensure timely and accurate billing, the contractor shall:

- Maintain a **computer system with a printer** at the site for keeping daily logs, measurement data, manpower deployment, and work progress.
- Submit **daily work progress reports** and **job completion/measurement reports** as and when required by GIPCL.
- Ensure that monthly/RA billings are strictly based on **certified measurements** recorded through JMRs.

Inspection and Quality Review:

- All executed works are subject to inspection by the **Engineer-in-Charge or their authorized representatives**.
- If any work is found **unsatisfactory or deviating from approved specifications**, GIPCL reserves the right to:
    - Reject the work,
    - Withhold payment,
    - Or initiate rectification at the contractor’s cost and risk.

- Such decisions shall be **binding on the contractor**.

 Dispute Resolution on Measurement:

In case of any **dispute or disagreement** regarding the mode or basis of measurement for any item, the decision of the **Engineer-in-Charge shall be final and binding** on the contractor.

8. MOBILIZATION AND EXECUTION

a) **Timely Mobilization:**

The contractor shall **mobilize necessary manpower, tools, equipment, and materials** within **24 hours** of receiving intimation or requirement from GIPCL for any assigned work. **Delays in mobilization shall attract suitable action**, including penalties, at the discretion of GIPCL.

b) **Deployment of Qualified Supervision Team:**

The contractor shall deploy an adequate number of **experienced site supervisors and engineers**, responsible for:

- Execution of the assigned works within the stipulated time and as per approved technical specifications,
- Ensuring compliance with safety and quality norms,
- Coordinating closely with GIPCL’s Engineer-in-Charge and respective area representatives,
- Obtaining daily work certification and clearance for measurements.

c) **Scalable Resource Mobilization:**

The volume and nature of work may vary significantly throughout the contract. The contractor shall be prepared to **scale up or down resources (manpower, equipment, etc.)** promptly as per GIPCL’s instructions and site requirements, without any delay or additional cost implication to GIPCL.

d) **Accommodation of Contractor’s Workforce:**

The contractor shall make **adequate accommodation and welfare arrangements** for all personnel deployed by them at their **own cost**. GIPCL shall not be responsible for providing or arranging accommodation, transportation, or any logistical support for the contractor’s manpower.

9. ENGINEER-IN-CHARGE / OWNER TO DIRECT WORK AND ORDER ALTERATIONS, MODIFICATIONS, DELETIONS

9.1 The Engineer-in-charge shall have the right to direct the manner in which all work under this contract shall be conducted in so far as may be necessary to

secure the safe and proper progress and the specified quality of work, and all work shall be done and all material shall be furnished to the satisfaction and approval of the OWNER.

9.2 Additional drawings and explanations to exhibit or illustrate details may be provided by the OWNER and shall be so provided whenever necessary and if consistent with the drawings and specifications shall be binding upon the CONTRACTOR. The written decision of the OWNER as to the true construction and meaning of the drawings and specifications and of such additional drawings and explanations shall be binding upon the CONTRACTOR.

9.3 If at any time the CONTRACTOR’S methods, materials, or equipment appear to the OWNER to be unsafe, inefficient or inadequate for securing the safety of the workmen or the public, the quality of work or the rate of progress required, he may order the CONTRACTOR to increase their safety, efficiency and adequacy, and the CONTRACTOR shall comply with such orders. If at any time the CONTRACTOR’S working force and equipment are, in the opinion of the OWNER, inadequate for securing the necessary progress, as herein stipulated, the CONTRACTOR shall, if so directed, increase the working force and equipment to such an extent as to give reasonable assurance of compliance with the schedule of completion. The failure of the OWNER to make such demands shall not relieve the CONTRACTOR of his obligations to secure the quality, the safe conducting of the work, and the rate of progress required by the contract, and the CONTRACTOR alone shall be and remain liable and responsible for the safety, efficiency, and adequacy of his methods, materials, working force, equipment and timely completion of job irrespective of whether or not he makes any change as a result of any order or orders received from the OWNER.

9.4 The OWNER / ENGINEER shall have the power to make any alteration in, omissions from, additions to the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work and the CONTRACTOR shall be bound to carry out the work in accordance with any instructions that may be given to him in writing by the OWNER / ENGINEER and such alterations, omissions, additions or substitutions shall not invalidate the contract. Any altered, additional or substituted work which the CONTRACTOR may be directed to do in the manner above specified as part of the work, shall be carried out by the CONTRACTOR on the same conditions in all respects on which he agreed to do the main work and at the same rates as are specified in the tender for the main work, unless such alterations are not identical with items of work and form extra items.

9.5 The time for completion of the work shall be extended in the time proportion that the altered, additional or substituted work bears to the original contract and the decision of the OWNER shall be conclusive and binding on the CONTRACTOR.

10 SETTING OUT WORKS

10.1 The CONTRACTOR shall set out the works and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions and alignment of all parts thereof. If at any time, any error shall appear during the progress of any part of the work, the

CONTRACTOR shall at his own expenses rectify such error, if called upon, to the satisfaction of the OWNER.

10.2 The CONTRACTOR shall provide all facilities, instruments and attendance to the OWNER or his deputed representative to check his work. Instruments brought by the CONTRACTOR shall be in good working condition and are subject to approval of the OWNER. Checking in part or full or any setting out or any line or level by the OWNER shall not in any way relieve the CONTRACTOR of his responsibility o for the correctness thereof.

10.3 The CONTRACTOR shall establish and maintain base lines and bench marks adjacent of the various sections of work. All such marks and stakes must be carefully preserved by the CONTRACTOR, and in case of their destruction by him or any of his employees, they will be replaced at the CONTRACTOR’S expenses.

10.4 The CONTRACTOR shall be responsible for the accuracy of all dimensions within the various sections of the work according to the figures of dimensions on the drawings/actual.

11. DEFECT LIABILITY PERIOD

Even after checking, supervising, witnessing and approving the works, materials, test results, etc… whatsoever by GIPCL Engineer and / or consultant in part or full or any setting out or any line or level by the OWNER shall not in any way relieve the CONTRACTOR of his responsibility for the correctness thereof and for his obligations during Defect Liability Period and Contractor will be fully liable till successful completion of Defect Liability Period.

 The **Defect Liability Period** for the entire scope of work shall be **one (01) year** from the date of **completion and acceptance** of the work, as certified in writing by the Engineer-in-Charge.

 During this period, if any **defect, deficiency, settlement, or failure** in workmanship, materials, or performance arises in any part of the work already executed, the contractor shall, upon receiving written intimation from GIPCL, **rectify the same at no additional cost**, within **seven (07) calendar days**.

 If the contractor **fails to attend to or complete the rectification** within the stipulated 7-day period, GIPCL reserves the right to:

- **Carry out the rectification through a third party** or departmentally,
- Recover the **full cost incurred** for such rectification from any dues payable to the contractor or from the **Security Deposit**, and/or
- Impose other contractual remedies as deemed fit.

 In case of **delays beyond 7 days**, GIPCL shall have the right to:

- **Delay the release of the Security Deposit** by an equivalent number of days until satisfactory rectification is completed,
- Or withhold a proportionate amount of the security deposit equivalent to the estimated cost of pending rectification works.

 The contractor shall remain **fully liable** for all such defects arising due to poor workmanship, non-compliance with specifications, use of substandard materials, or any negligence attributable to him or his subcontractors, vendors, or labour.

12. CONSTRUCTION DRAWINGS

12.1 One set of the drawings and specifications shall be furnished by the OWNER to the CONTRACTOR, and OWNER shall furnish, within such time as he may consider reasonable, one copy of any additional drawing/s which in his opinion may be necessary for the execution of any part of the work. Such copies shall be kept on the works and the OWNER and their representatives shall at all reasonable times have access to the same, and they shall be returned to the OWNER by the CONTRACTOR before the issue of the certificate for the balance of his account under the contract. This contract and the signed drawings shall remain in the custody of the OWNER, and shall be produced by him at his office as and when required by the OWNER or by the CONTRACTOR.

12.2 Whenever final drawings, plans and complete details are not ready, the CONTRACTOR will have to proceed with the work as and when drawings are released. The CONTRACTOR will have absolutely no claim whatsoever on the score of delay in the issue of drawings. The CONTRACTOR shall have no claim for any compensation due to delay in the issue of drawings. In case the work is retarded or even stopped temporarily for lack of details and construction drawings to proceed with, the CONTRACTOR would be given extension of time to the extent his work has been held up for want of drawings. The OWNER/ENGINEER decision in regard to time allowed on this account shall be final and binding.

13. CERTIFICATE OF VIRTUAL COMPLETION

The works shall not be deemed to be completed in any respect until a formal **Certificate of Virtual Completion** is issued in writing by the Engineer-in-Charge/Owner. This certificate will only be issued **after the contractor has fulfilled the following** conditions to the satisfaction of GIPCL:

1. **Substantial Completion of All Works:** All scope items as per the contract and SoR must be completed in accordance with technical specifications, drawings, and quality standards.
2. **Clearing of Site:** The site must be cleared of all debris, surplus materials, construction waste, tools, equipment, and temporary facilities not required for DLP.
3. **Submission of Required Documents:** The contractor must submit all statutory documents, test reports, as-built drawings, material reconciliation statements, and any other documentation required under the contract.
4. **Engineer’s Inspection & Approval:** GIPCL’s Engineer-in-Charge shall inspect the completed works and, upon being satisfied that the works meet contractual obligations (excluding minor items not affecting occupancy or use), shall issue the Certificate of Virtual Completion.
5. **Start of Defect Liability Period:** The **Defect Liability Period shall commence** from the **date of issue** of the Certificate of Virtual Completion and not before.

Note: Issuance of this certificate does not relieve the contractor of any responsibilities related to correction of defects or contractual liabilities under other clauses.

14. QUANTITY OF WORK

The quantities specified in the Schedule of Rates (SoR) are indicative and meant for tendering purposes only. Payment will be made based strictly on the actual work executed and certified by the Engineer-in-Charge at the agreed item rates, irrespective of the initially estimated quantities.

GIPCL reserves the unrestricted right to increase, decrease, or omit any item in the SoR at its discretion, and the contractor shall have no claim for loss of anticipated profits, overheads, or compensation arising from such changes.

The contractor is required to deploy adequate skilled, semi-skilled, and unskilled manpower, tools, tackles, materials, and consumables as per the workload and emergency requirements throughout the contract period to complete the work satisfactorily. The quantities of individual items may vary to any extent depending upon project requirements; however, the item rates shall remain firm and unchanged throughout the contract duration and any extensions granted. It is the contractor’s responsibility to execute the entire scope of work to the full satisfaction of the Engineer-in-Charge, adhering to all specifications, safety norms, quality standards, and timelines, regardless of any variation in quantities.

15. GENERAL CONDITIONS OF CONTRACT

General Conditions of Contract (Section-C) and detail specification prepared by the company will be applicable for this contract. The same is enclosed herewith. Bidders are advised to go through the same.

Where any portion of the general conditions of contract is repugnant to or at variance with any provisions of the special conditions of contract, then unless a different intention appears, the provision of the special conditions of contract shall prevail to the extent of such repugnancy of variance.

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SECTION-E
SCHEDULE OF RATE & PRICE BID
(Bidder’s offer in % to be quoted online only through website: https://tender.nprocure.com)

SoR Item No.	BRIEF ITEM DESCRIPTION	Estimated Quantity	UNIT	Estimated Item Rate without GST (Rs.)	Estimated Amount (Rs.)
A	**CIVIL WORKS FOR PEB SHED-1**				
1	Area grading in all type of soil up to grade level/required level, including cutting of unwanted vegetations as directed by Engineer-in-charge by manual means and transportation and disposal of excavated material to the dump sites within the lead up to 03 (three) kms. Including maximum lift of 1.0 mtr. Clearing and grubbing includes uprooting rank vegetation grass bushes, shrubs, sapling and trees girth up to 300 mm removal of stumps of trees cut earlier and disposal of unserviceable materials all including and also as per detailed specifications.	1683.000	SQM	14.76	24,841.08
2	Earthwork in excavation in all kinds of soil for foundations, flooring, forming drains, excavation in trenches, etc (including hard rock requiring chiselling or blasting if any) including all lifts, in both wet and dry conditions, dewatering of surface and subsurface water, shoring, planking and strutting (if required) disposal / stacking of surplus excavated soil etc. within a lead of 5000 m and as per specifications and directions of the Engineer-in-charge (The measurement for payment shall be the theoretical excavation volume only as per drawing i.e. for the volume of the block of the bottom excavation having the depth and maximum dimensions of the foundation structures including mud mat as per drawing. The contractor shall take into account in his offer, the provision for any excess excavation for necessary working space, steps, sloping etc. required for excavation safely and other & re-filling the side slope/working space etc) for depth up to avg. 1.50 m all including and also as per detailed specifications (Depth of excavation is to be measured from existing avg. ground level).	752.000	CUM	200.00	1,50,400.00
3	Same as above for Excavation for b) depth from 1.5 m to 3.0 m	216.000	CUM	235.00	50,760.00

4	Providing and laying about 230mm thick rubble soling to proper line, level and slope below beam, flooring including hand packing, wedging, binding/filling all joints using bed materials, watering, ramming, manually compacting, dressing, etc. complete as per drawing, specification and instruction of the Engineer-in-charge and also as per detailed specifications (Bed material / fly ash of required quantity shall be issued at free of cost from silo of GIPCL-SLPP on specific request as available. The rate is including loading, unloading and necessary transportation of fly ash up to work site in truck mounted closed container and the remained/unused quantity of fly ash shall be removed from site by the contractor as directed).	315.000	CUM	1,695.68	5,34,139.20
5	Providing and laying in position plain cement concrete as levelling course under foundations, Plinth Beam, trenches, concrete bedding, plinth protection etc... at any depth and at elevation as per drawing including preparing and ramming the base before placing the concrete, curing, compacting, dewatering (if required), including form work etc. all complete as per drawing and as directed by Engineer-in-charge for the Nominal Mix 1:3:6 (1 cement : 3 sand : 6 graded stone aggregates 40 mm nominal size) all including and also as per detailed specifications.	162.000	CUM	4,100.00	6,64,200.00
6	Providing and laying reinforced cement concrete Grade M25 (Design Mix - minimum cement content 390 kg per CUM) with graded stone aggregates 20 mm nominal size confirming to IS 456 for RCC Works including preparing the base before placing of concrete and finishing smooth, including mixing & placing concrete in position, watering, compacting, vibrating, curing, dewatering (if required), embedment, edge angles, insert plates, pipe sleeves, anchor bolts etc... wherever necessary, providing construction joints, leaving cut-outs / pockets including all labours, supervision, materials, equipments, tools & tackles etc. all complete as per detail technical specifications, drawings and as directed by Engineer-in-Charge, all including and also as per detailed specifications (Supply of cement and all other construction materials shall be in the scope of contractor, however, excluding cost of formwork and reinforcement for RCC and shall be paid in specific respective item as under) for reinforced concrete work in Foundations, footings, Base of columns and Mass concrete (finish type F1).	141.000	CUM	5,900.00	8,31,900.00

7	Same as above item of RCC Grade M25 for Beams, Girders etc… up to finished floor level (finish type F2).	37.000	CUM	5,800.00	2,14,600.00
8	Same as above item of RCC Grade M25 (Design Mix - minimum cement content 390 kg per CUM) for Columns, Pedestals, Pillars posts and struts, up to finished floor level (finish type F2).	6.000	CUM	5,800.00	34,800.00
9	Providing formwork of ordinary timber planking so as to give a rough finish including centring, shuttering, strutting and propping, providing, provision for required openings/ cut-outs/ pockets, etc. complete as per detailed specifications and as directed by Engineer-in-charge etc. Height of propping and centring below supporting floor to ceiling not exceeding 4 M and removal of the same for in-situ reinforced concrete and plain concrete work in Foundations, Footings Bases of Columns etc. and Mass concrete.	358.000	SQM	300.00	1,07,400.00
10	Providing formwork to give fair & smooth finish for exposed concrete surface using sheeting formed from tongued and grooved boards/plywood / steel sheets for column, beams, pedestals, walls, coping, facias, fins, etc. including centring, shuttering, strutting and propping, providing, provision for required openings/ cut-outs/ pockets, etc. complete as per detailed specifications and as directed by Engineer-in-charge etc. Height of propping and centring below supporting floor to ceiling not exceeding 4 M and removal of the same for in-situ reinforced concrete and plain concrete work in Sides and soffits of Beams, Beam Haunchings, cantilevers, Girders Bressumers and Lintels not exceeding 1 M in Depth.	212.000	SQM	300.00	63,600.00
11	Earthwork in backfilling around foundation, pits, trenches, filling under floors and other substructures with selected available excavated material, compacting / watering the backfilling in layers of about 20 cm at desired locations including carting of backfill material from areas where it is stacked, spreading evenly the unused excavated material in the stacking yard after backfilling complete as per detailed specifications and directed by Engineer-in-charge. The measurement for payment shall be the theoretical excavation volume paid in item no. 2 & 3 less volume of concrete as per drawing. The contractor shall consider in his rate the provision for any excess backfilling for excavated area for necessary working space, steps, sloping etc. required for excavation safely and other & re-filling the side slope/working space etc.	114.000	CUM	124.72	14,218.08

12	Providing and laying machine laid Trimix (Vacuum Dewatered) Concrete Flooring M30 grade (Design Mix - minimum cement content 410 kg per CUM) with 20mm downgraded stone aggregates confirming to IS 456 in correct line & level and finishing the surface of placed concrete by poker vibration and surface vibrator, adding of Fosroc make Nito floor hardener at the rate of 1.00 Kg/Sqm at top of finished surface, making of construction joint for size about 10mm wide and 50mm deep (average) at about 5mx4m interval in longitudinal and transverse direction respectively or as per drawings or as appropriately site suitable as directed by Engr-in-charge (by cutting groove in hardened concrete by cutter machine and filling bitumen mixed with sand in cut groove) curing etc. complete for all lead & lift as directed by Engineer-in-charge, all including and also as per detailed specifications. The rate shall be including cost of all the construction materials (except Reinforcement which will be paid in respective item), labours, supervision, materials, equipments and tools & tackles. Shuttering, side channels shall be included.	255.000	CUM	6,450.00	16,44,750.00
13	Providing and fixing TMT/HYSD (FE 500D CRS) bar reinforcement for R.C.C. work including supplying of bars of required diameter, straighten, handle, cut bend, crank, fix and tie in position as per approved drawings or as directed by Engineer-in-charge with the using of cover blocks of same grade of concrete in all RCC items of work including cost of GI binding wire 18SWG double knot, including cost of all required labours, supervision, materials and equipments, tools & tackles, etc., all complete as directed by Engineer-in-charge, all including and also as per detailed specifications.. Measurement shall be done according to standard IS practice including authorized lapping at theoretical weight for different sections including bending, binding and placing in position etc. complete for RCC works. No payment shall be made for reinforcement used for chairs, spacers & fixing bolts. No payment for binding wires.	39.000	MT	71,000.00	27,69,000.00
14	Brick masonry work using common burnt clay building bricks having crushing strength not less than 35 kg/Sq.Cm. in foundation, plinth, walls including provision of standard metallic scaffolding in cement mortar 1:1.5 (1- cement :1.5 -fine sand) including scaffolding wherever necessary, curing, raking joints, etc. complete as per detailed specifications and drawings or as directed by Engineer-in-charge.	1.000	CUM	5,650.00	5,650.00

15	Providing & Laying cement plaster with cement mortar 1:4 (1 cement, 4 sand), 15mm average thick to interior/exterior faces of walls, beams, bends, moulds, etc... including providing and applying lime punning with properly slaked fat lime @ 2.2kg/sq.m to the plaster work when it is still green and finishing the area to a smooth and even finish. Rate should also include provision of grooves, including provision of standard metallic scaffolding, curing and finishing smooth complete all including and also as per detailed specifications. Rate also includes hacking of RCC surfaces and providing and fixing chicken mesh at junction of RCC and masonry and for electrical conduits (actual area shall be measured).	74.000	SQM	225.00	16,650.00
16	Finishing wall with 100% acrylic weatherproof exterior emulsion paint 2 coat (Asian Paints - Apex Weatherproof or Berger - Weather Coat) of approved colour and shade, over a coat of compatible exterior grade primer/sealer on newly plastered surfaces to give required shape even shade after thoroughly brushing the surface to remove all dirt, and remains of loose powdered materials, etc... complete including provision of standard metallic scaffolding, etc as per detailed specifications.	74.000	SQM	220.00	16,280.00
17	Providing & filling expansion joints in between RCC elements by 25 mm thickness SILFEX pre molded compressible filler board in black colour, of approved make (Supreme industries or equivalent) confirming MORTH specification (Clause 1015), having minimum density of 95 Kg/ Cum, non staining with less than 1% water absorption & compression recovery of 93% minimum as per the detailed specifications and filling with bitumen tar and sand mixture to finish the top surface including all material, labour, transportation, tools & tackles etc complete as directed by Engr-in-charge.	6.000	SQM	3,154.00	18,924.00
18	Labour charge for placing, aligning, fixing in position to correct lines and levels all types of mild steel embedment such as plate inserts, pipe sleeves, foundation bolt/assemblies, edge protection angles, etc, in RCC, all as per specifications and as shown in construction drawings and as directed by the Engr-in-charge and also as per detailed specifications using steel templates, etc. as required (providing required size & nos. of templates is included in scope of work and same shall be used for fixing inserts and will not be measured and not be paid). Threaded part of bolt shall be protected by using Grease & solid plastic bags. Transportation of Foundation bolt form godown etc. shall be in the scope of contractor.	3300.000	KG	45.00	1,48,500.00

19	Grouting of the bases of equipment/stanchions including anchor bolt pocket/ pipe sleeves etc. with using ready mix approved make non-shrinkage free flow grout (CONBEXTRA GP2 ready mix grout) as per manufacturer’s instructions, including labour, tools, plant, shuttering, curing, roughening/ chipping of concrete to required level where necessary etc. complete as per detailed specifications and as directed by Engr-in-charge.	2.000	CUM	67,700.00	1,35,400.00
20	Supplying and fixing anchor fasteners of HILTI or Fischer or other approved make in RCC beams, columns and slabs including scaffolding, drilling holes etc. complete as per manufacturer's specification and as directed by the Engineer-in-charge as per specifications for 12 mm dia. standard anchor fasteners.	11.000	EACH	265.00	2,915.00
21	Supplying and fixing anchor fasteners of HILTI or Fischer or other approved make in RCC beams, columns and slabs including scaffolding, drilling holes etc. complete as per manufacturer's specification and as directed by the Engineer-in-charge as per specifications for 16 mm dia. standard anchor fasteners.	11.000	EACH	380.00	4,180.00
	TOTAL TENDER COST FOR SHED-1 CIVIL WORKS (A)				**74,53,107.36**
B	**CIVIL WORKS FOR PEB SHED-2**				
22	Area grading in all type of soil up to grade level/required level, including cutting of unwanted vegetations as directed by Engineer-in-charge by manual means and transportation and disposal of excavated material to the dump sites within the lead up to 03 (three) kms. Including maximum lift of 1.0 mtr. Clearing and grubbing includes uprooting rank vegetation grass bushes, shrubs, sapling and trees girth up to 300 mm removal of stumps of trees cut earlier and disposal of unserviceable materials all including and also as per detailed specifications.	1189.000	SQM	14.76	17,549.64

23	Earthwork in excavation in all kinds of soil for foundations, flooring, forming drains, excavation in trenches, etc (including hard rock requiring chiselling or blasting if any) including all lifts, in both wet and dry conditions, dewatering of surface and subsurface water, shoring, planking and strutting (if required) disposal / stacking of surplus excavated soil etc. within a lead of 5000 m and as per specifications and directions of the Engineer-in-charge (The measurement for payment shall be the theoretical excavation volume only as per drawing i.e. for the volume of the block of the bottom excavation having the depth and maximum dimensions of the foundation structures including mud mat as per drawing. The contractor shall take into account in his offer, the provision for any excess excavation for necessary working space, steps, sloping etc. required for excavation safely and other & re-filling the side slope/working space etc) for depth up to avg. 1.50 m all including and also as per detailed specifications (Depth of excavation is to be measured from existing avg. ground level).	371.000	CUM	200.00	74,200.00
24	Same as above for Excavation for b) depth from 1.5 m to 3.0 m	114.000	CUM	235.00	26,790.00
25	Providing and laying about 230mm thick rubble soling to proper line, level and slope below beam, flooring including hand packing, wedging, binding/filling all joints using bed materials, watering, ramming, manually compacting, dressing, etc. complete as per drawing, specification and instruction of the Engineer-in-charge and also as per detailed specifications (Bed material / fly ash of required quantity shall be issued at free of cost from silo of GIPCL-SLPP on specific request as available. The rate is including loading, unloading and necessary transportation of fly ash up to work site in truck mounted closed container and the remained/unused quantity of fly ash shall be removed from site by the contractor as directed).	179.000	CUM	1,695.68	3,03,526.72
26	Providing and laying in position plain cement concrete as levelling course under foundations, Plinth Beam, trenches, concrete bedding, plinth protection etc... at any depth and at elevation as per drawing including preparing and ramming the base before placing the concrete, curing, compacting, dewatering (if required), including form work etc. all complete as directed by Engr-in-charge for the Nominal Mix 1:3:6 (1 cement : 3 sand : 6 graded stone aggregates 40 mm nominal size) as per detailed specifications.	90.000	CUM	4,100.00	3,69,000.00

27	Providing and laying reinforced cement concrete Grade M25 (Design Mix - minimum cement content 390 kg per CUM) with graded stone aggregates 20 mm nominal size confirming to IS 456 for RCC Works including preparing the base before placing of concrete and finishing smooth, including mixing & placing concrete in position, watering, compacting, vibrating, curing, dewatering (if required), embedment, edge angles, insert plates, pipe sleeves, anchor bolts etc.. wherever necessary, providing construction joints, leaving cut-outs / pockets including all labours, supervision, materials, equipments, tools & tackles etc. all complete as per detail technical specifications, drawings and as directed by Engineer-in-Charge, all including and also as per detailed specifications (Supply of cement and all other construction materials shall be in the scope of contractor, however, excluding cost of formwork and reinforcement for RCC and shall be paid in specific respective item as under) for reinforced concrete work in Foundations, footings, Base of columns and Mass concrete (finish type F1).	63.000	CUM	5,900.00	3,71,700.00
28	Same as above item of RCC Grade M25 (Design Mix - minimum cement content 390 kg per CUM) for Beams, Girders etc… up to finished floor level (finish type F2).	25.000	CUM	5,800.00	1,45,000.00
29	Same as above item of RCC Grade M25 (Design Mix - minimum cement content 390 kg per CUM) for Columns, Pedestals, Pillars posts and struts, up to finished floor level (finish type F2).	3.000	CUM	5,800.00	17,400.00
30	Providing formwork of ordinary timber planking so as to give a rough finish including centring, shuttering, strutting and propping, providing, provision for required openings/ cut-outs/ pockets, etc. complete as per detailed specifications and as directed by Engineer-in-charge etc. Height of propping and centring below supporting floor to ceiling not exceeding 4 M and removal of the same for in-situ reinforced concrete and plain concrete work in Foundations, Footings Bases of Columns etc. and Mass concrete.	201.000	SQM	300.00	60,300.00

31	Providing formwork to give fair & smooth finish for exposed concrete surface using sheeting formed from tongued and grooved boards/plywood / steel sheets for column, beams, pedestals, walls, coping, facias, fins, etc. including centring, shuttering, strutting and propping, providing, provision for required openings/ cut-outs/ pockets, etc. complete as per detailed specifications and as directed by Engineer-in-charge etc. Height of propping and centring below supporting floor to ceiling not exceeding 4 M and removal of the same for in-situ reinforced concrete and plain concrete work in Sides and soffits of Beams, Beam Haunchings, cantilevers, Girders Bressumers and Lintels not exceeding 1 M in Depth.	167.000	SQM	300.00	50,100.00
32	Earthwork in backfilling around foundation, pits, trenches, sewer lines, filling under floors and other substructures with selected available excavated material compacting / watering the backfilling in layers of about 20 cm at desired locations including carting of the backfill material from areas where it is stacked, spreading evenly the unused excavated material in the stacking yard after backfilling complete as per detailed specifications and directed by Engineer-in-charge. The measurement for payment shall be the theoretical excavation volume paid in item no. 23 & 24 less volume of concrete as per drawing. The contractor shall take into account in his rate the provision for any excess backfilling for excavated area for necessary working space, steps, sloping etc. required for excavation safely and other & re-filling the side slope/working space etc.	84.000	CUM	124.72	10,476.48

33	Providing and laying machine laid Trimix (Vacuum Dewatered) Concrete Flooring M30 grade (Design Mix - minimum cement content 410 kg per CUM) with 20mm downgraded stone aggregates confirming to IS 456 in correct line & level and finishing the surface of placed concrete by poker vibration and surface vibrator, adding of Fosroc make Nito floor hardener at the rate of 1.00 Kg/Sqm at top of finished surface, making of construction joint for size about 10mm wide, 50mm deep at about 5mx4m interval in longitudinal and transverse direction respectively or as per drawings or as appropriately site suitable as directed by Engineer-in-charge (by cutting groove in hardened concrete by cutter machine and filling bitumen mixed with sand in cut groove) curing etc. complete for all lead & lift as directed by Engineer-in-charge, all including and also as per detailed specifications. The rate shall be including cost of all the construction materials (except Reinforcement which will be paid in respective item), labours, supervision, materials, equipments and tools & tackles. Shuttering, side channels shall be included.	117.000	CUM	6,450.00	7,54,650.00
34	Providing and fixing TMT/HYSD (FE 500D CRS) bar reinforcement for R.C.C. work including supplying of bars of required diameter, straighten, handle, cut bend, crank, fix and tie in position as per approved drawings or as directed by Engineer-in-charge with the using of cover blocks of same grade of concrete in all RCC items of work including cost of GI binding wire 18SWG double knot, including cost of all required labours, supervision, materials and equipments, tools & tackles, etc., all complete as directed by Engineer-in-charge, all including and also as per detailed specifications.. Measurement shall be done according to standard IS practice including authorized lapping at theoretical weight for different sections including bending, binding and placing in position etc. complete for RCC works. No payment shall be made for reinforcement used for chairs, spacers & fixing bolts. No payment for binding wires.	20.000	MT	71,000.00	14,20,000.00
35	Brick masonry work using common burnt clay building bricks having crushing strength not less than 35 kg/Sq.Cm. in foundation, plinth, walls including provision of standard metallic scaffolding in cement mortar 1:1.5 (1 cement :1.5 fine sand) including scaffolding, curing, raking joints, etc. complete as per detailed specifications, drawings as directed by Engr-in-charge.	1.000	CUM	5,650.00	5,650.00

36	Providing & Laying cement plaster with cement mortar 1:4 (1 cement, 4 sand), 15mm average thick to interior/exterior faces of walls, beams, bends, moulds, etc... including providing and applying lime punning with properly slaked fat lime @ 2.2kg/sq.m to the plaster work when it is still green and finishing the area to a smooth and even finish. Rate should also include provision of grooves, including provision of standard metallic scaffolding, curing and finishing smooth complete all including and also as per detailed specifications. Rate also includes hacking of RCC surfaces and providing and fixing chicken mesh at junction of RCC and masonry and for electrical conduits (actual area shall be measured).	64.000	SQM	225.00	14,400.00
37	Finishing wall with weather proof exterior emulsion paint on wall surface (two coats) to give an required shape even shade after thoroughly brushing the surface to remove all dirt, and remains of loose powdered materials, etc... complete. This includes two coats of 100% acrylic weatherproof exterior emulsion paint such as Asian Paints - Apex Weatherproof or Berger - Weather Coat, of approved colour and shade, over a coat of compatible exterior grade primer/sealer on newly plastered surfaces including provision of standard metallic scaffolding, all including and also as per detailed specifications.	64.000	SQM	220.00	14,080.00
38	Providing & filling expansion joints in between RCC elements by 25mm thick SILFEX premolded compressible filler board in black colour (Supreme or equivalent) confirming MORTH Clause 1015), having minimum density of 95 Kg/ Cum, non-staining with less than 1% water absorption & compression recovery 93% minimum as per the detailed specifications and filling with bitumen tar and sand mixture to finish the top surface etc complete as directed by Engineer-in-charge.	6.000	SQM	3,154.00	18,924.00
39	Labour charge for placing, aligning, fixing in position to correct lines and levels all types of mild steel embedment such as plate inserts, pipe sleeves, foundation bolt/assemblies, edge protection angles, etc, in RCC, all as per specifications and as shown in drawings as directed by the Engr-in-charge using steel templates, etc. as required (providing required size & nos. of templates is included in scope of work and same shall be used for fixing inserts and will not be measured and not be paid). Threaded part of bolt shall be protected by using Grease & solid plastic bags. Transportation of Foundation bolt form godown etc. shall be in the scope of contractor.	3300.000	KG	45.00	1,48,500.00

40	Grouting of the bases of equipment/stanchions including anchor bolt pocket/ pipe sleeves etc. with using ready mix approved make non shrinkage free flow grout (CONBEXTRA GP2 ready mix grout) as per manufacture’s instructions, including labour, tools, plant, shuttering, curing, roughening/ chipping of foundation concrete to required level where necessary etc. complete as per detailed specifications and as directed by Engineer-in-charge.	2.000	CUM	67,700.00	1,35,400.00
41	Supplying and fixing anchor fasteners of HILTI or Fischer or other approved make in RCC beams, columns and slabs including scaffolding, drilling holes etc. complete as per manufacturer's specification and as directed by the Engineer-in-charge as per specifications for 12 mm dia. standard anchor fasteners.	11.000	EACH	265.00	2,915.00
42	Supplying and fixing anchor fasteners of HILTI or Fischer or other approved make in RCC beams, columns and slabs including scaffolding, drilling holes etc. complete as per manufacturer's specification and as directed by the Engineer-in-charge as per specifications for 16 mm dia. standard anchor fasteners.	11.000	EACH	380.00	4,180.00
	TOTAL TENDER COST FOR SHED-2 CIVIL WORKS (A)				**39,64,741.84**
C	**AREA DEVELOPMENT WORKS**				
43	Earthwork in excavation in all kinds of soil for foundations, flooring, forming drains, road, pavements, area development works, etc (including hard rock requiring chiselling or blasting if any) including all lifts, in both wet and dry conditions, dewatering of surface and subsurface water, shoring, planking and strutting (if required) disposal / stacking of surplus excavated soil etc. within a lead of 5000 m and as per specifications and directions of the Engineer-in-charge (The measurement for payment shall be the theoretical excavation volume only as per drawing i.e. for the volume of the block of the bottom excavation having the depth and maximum dimensions mentioned in drawing including mud mat as per drawing. The contractor shall take into account in his offer, the provision for any excess excavation for necessary working space, steps, sloping etc. required for excavation safely and other & re-filling the side slope/working space etc) for depth up to avg. 1.50 m all including and also as per detailed specifications (Depth of excavation is to be measured from existing avg. ground level).	275.000	CUM	200.00	55,000.00

44	Filling of dry fly ash/bed ash up to required level on prepared surface of road, foundation, drain, area development works, etc... at all depth including loading, unloading transportation, spreading in a layer of about 300mm thick or as directed, dressing, watering, compacting and levelling in required line & level etc. complete as per detailed specification and as directed by Engineer-in-charge. Fly ash of required quantity shall be issued at free of cost from silo of GIPCL-SLPP on specific request as available. The rate is including loading, unloading and necessary transportation of fly ash up to work site in truck mounted closed container and the remained/unused quantity of fly ash shall be removed from site by the contractor as directed.	110.000	CUM	250.00	27,500.00
45	Providing and laying about 230mm thick rubble soling to proper line, level and slope below beam, flooring including hand packing, wedging, binding/filling all joints using bed materials, watering, ramming, manually compacting, dressing, etc. complete as per drawing, specification and instruction of the Engineer-in-charge and also as per detailed specifications (available rubbles from LHS/ELHS areas will be allowed to use at free of cost. The rate is including loading, unloading, necessary transportation at work place & segregation of suitable size stone/breaking to required size stone etc. and the remained/unused quantity of rubbles shall be removed from site by the contractor as directed. Also, Bed material will be issued at free of cost, as per availability, near work site up to possible extent. Fly ash / bed ash of required quantity shall be issued at free of cost from silo of GIPCL-SLPP on specific request as available. The rate is including loading, unloading and necessary transportation of fly ash/bed ash up to work site in truck mounted closed container and the remained/unused quantity of fly ash shall be removed from site by the contractor as directed).	127.000	CUM	750.00	95,250.00
	TOTAL TENDER COST FOR AREA DEVELOPMENT WORKS (C)				**1,77,750.00**
	TOTAL ESTIMATED VALUE OF TENDER-1 (A + B + C) without GST				**1,15,95,599.20**
	GST at 18%				**20,87,207.86**
	TOTAL ESTIMATED SOR VALUE TENDER-1 with 18% GST				**1,36,82,807.06**

Note: Bidders have to quote their offer in % (+, - or equal) on above total estimated SoR value in online Price Bid only. The quoted percentage rate on above SoR item rates (Section-E of this tender) shall be inclusive of all labour cost, equipments, materials (except specified free issue materials by GIPCL in respective items), supervision, consumables, tools, tackles, profit & overheads, all taxes & duties (including GST), etc… Item rate shall be firm for entire duration of contract period and any approved extensions.

My rates are as under (<u>only to be quoted online on (n)Procure</u>).

At estimated value

OR _____ %age above the estimated value

OR _____%age below the estimated value.

Note:- (1) Percentage rate offer/bid price on SoR value including GST shall be quoted through online (n)-Procure only. Hard copy of price bid shall not be considered/accepted.

(2) Evaluation of tender & E-Reverse Auction will be done on gross total quoted amount with GST.

NAME OF TENDERER : _____
SEAL & SIGNATURE OF TENDERER : _____
NAME OF AUTHORISED PERSON : _____
ADDRESS : _____
PHONE NO. _____ FAX No. _____
MOBILE NO. _____ Email ID. _____

SECTION-F
LIST OF ANNEXURES & FORMS

1.0 ANNEXURE-A

CHECKLIST FOR PASSING THE BILLS

For the month of :

1)	Work Order / P.O. No. & Contract value	:	
2)	Nature of work	:	
3)	Duration of Work Order	:	From to
4)	Maxi. No. of manpower per day deployed in the month.	:	M F Total
5)	Details of Labour License	:	Valid up to for Persons.
6)	Details of E.C Policy	:	Valid up to for Persons.
7)	Documents attached for verification for the previous month.	:	Wage & Attendance Sheets. Yes/No
			P.F Challan Yes/No
8)	Documents attached for verification (in case of Final Bill)	:	Bonus Payment Register Yes/No
		:	Leave wage register Yes/No
9)	Security Deposit / Retention Money lying with Co.	:	Yes / No if yes, Rs.

Date :

Signature of Contractor
with official stamp

2.0 ANNEXURE-B

PROFORMA FOR CONTRACT SECURITY-CUM-PERFORMANCE GUARANTEE BY SELLER / CONTRACTOR

(To be executed on non-judicial stamped paper of approximate value)

B. G. No.----------Date: ……

1. WHEREAS Gujarat Industries Power Company Limited having its office at PO: Ranoli, Dist. Vadodara – 391 350, Gujarat State, India (hereinafter referred to as “The Company/Owner” which expressions shall unless repugnant to the subject or context includes its legal representatives, successors and assigns) has entered into a contract with M/s. …….. ……(hereinafter referred to as “Contractor(s)/ Seller(s)” which expression shall unless repugnant to the subject or context includes their legal representatives, successors and assigns) for ……on the terms and conditions as set out inter alia, in the Company’s contract No./ work order No……..date ……and various documents forming part thereof hereinafter referred to as the “said contract” which expression include all amendments, modifications and/ or variations thereto and where as the Contractor(s)/ Seller(s) has agreed for due execution of the entire contract and guarantees its performance including any parts executed through any other agencies/ subcontractors

   AND WHEREAS one of the conditions of the “said contract” is that “contractor(s)/seller(s) shall furnish to the owner a Bank Guarantee from a bank for….% (…….percent) of the total value of the “said contract” against due and faithful performance of the “said contract” including performance guarantee obligations of the contractor(s)/seller(s) for execution/ supplies made under the “said contract.”
2. We ……Bank having its branch office at ……..do hereby agree and undertake to pay the amount due and payable under this guarantee without any demur merely on a demand from the Company stating that in the opinion of the Company, which is final & binding, the amount claimed is due by reason of default made by the Contractor(s)/ Seller(s) in performing any of the terms & conditions of the said Contract including defect liability obligations, in fulfilling the performance guarantee obligation or loss or damage caused to or would be caused to or suffered by the Company by reason of any breach by the said Contractor (s)/ Seller(s) of any of the terms & conditions of the contract. Any such demand made on the Bank by the owner shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However our liability under this guarantee shall be restricted to Rs.----------(Rs ……only)
3. We undertake to pay to the Company any money so demanded not withstanding any dispute or disputes raised by the contractor(s)/ Seller(s) in any suit or proceeding pending before any office, court or tribunal relating thereto our liability under this present guarantee being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under. Our liability to pay is not

dependent or conditional on the owner proceeding against the Contractor(s)/ Seller(s).

4. The guarantee herein contained shall not be determined or affected or suspended by the liquidation or winding up, dissolution or change of constitution or insolvency of the said Contractor(s)/ Seller(s) but shall in all respect and for all purposes be binding and operative until payment of all money due or liabilities under the said contract(s)/ Order(s) are fulfilled.
5. This guarantee will remain valid up _____ days or _____ whichever is earlier. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the OWNER/PURCHASER and further agrees that if this guarantee is extended for a period as mutually agreed between contractor & owner/purchaser, the guarantee shall be valid for a period so extended provided that a written request for such extension is received before the expiry of validity of guarantee.
6. We ……Bank further agree with the Company that the company shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract(s)/ Order(s) or to extend the time of performance by the said Contractor(s) Seller(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the said Contractor(s)/ Seller(s) and to forbear or enforce any of the terms and conditions relating to the said Contract(s)/ Order(s) and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor (s) / Seller(s) or for any forbearance, act or omission on the part of the Company or any indulgence by the Company to the said Contractor(s)/ Seller(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have affect of so relieving us.
7. Notwithstanding anything contained herein before, our liability shall not exceed Rs…….(Rupees……only) and shall remain in force till..……..Unless a demand or claim under this Guarantee is made on us within three months from the date of expiry we shall be discharged from all the liabilities under this guarantee.

Date _____

……. Bank
Corporate Seal of the Bank

By its constitutional Attorney
Signature of duly Authorized person
On behalf of the Bank

With Seal & Signature code

3.0 ANNEXURE-C

PROFORMA FOR BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

(To be executed on non-judicial stamped paper of approximate value)

B. G. No.----------Date: ……

1. WHEREAS M/s.Gujarat Industries Power Company Limited having its Corporate Office at PO: Ranoli, Dist. Vadodara – 391 350, Gujarat State, India (hereinafter called “The Company Owner” which expression shall unless repugnant to the subject or context includes its legal representatives, successors and assigns) has issued tender paper vide its Tender No……for ---------- (hereinafter called “the said tender”)to M/s.……(hereinafter called the said Tenderer(s)” which expression shall unless repugnant to the subject or context includes their legal representatives, successors and assigns and as per terms and conditions of the said tender, the tenderer shall submit a Bank guarantee for Rs.……. (Rupees……..only) towards earnest money in lieu of cash.
2. We ……..Bank having its branch office at …… do hereby undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Company stating that in the opinion of the company which is final and binding, the amount claimed is due because of any withdrawal of the tender or any material alteration to the tender after the opening of the tender by way of any loss or damage caused to or would be caused or suffered by the Company by reason of any breach by the said tenderer(s) of any of the terms and conditions contained in the said tender or failure to accept the letter of Intent Agreement or that the amount covered under this Guarantee is forfeited. Any such demand made on the Bank by the owner shall be conclusive as regards the amount due and payable by the Bank under this guarantee, However, our liability under this guarantee shall be restricted to an amount not exceeding Rs……..(Rupees……..only).
3. We undertake to pay to the Company any money so demanded not withstanding any dispute or disputes raised by the tenderer (s) in any suit or proceeding pending before any office, court or tribunal relating thereto our liability under this present guarantee being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under. Our liability to pay is not dependent or conditional on the owner proceeding against the tenderer.
4. The guarantee herein contained shall not be determined or affected or suspended by the liquidation or winding up, dissolution or change of constitution or insolvency of the said tenderer(s) but shall in all respect and for all purposes be binding and operative until payment of all money due or liabilities under the said contract(s)/ Order(s) are fulfilled.
5. We ……..Bank Ltd. further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the finalization of the said tender and that it shall continue to be enforceable till the said tender is finally decided and order placed on the successful tenderer(s) and or till all the dues of the company under or by virtue of the said tender have been fully paid and its claims satisfied or discharged or till a duly authorized officer of the company certifies that the terms and conditions of the said tender have been fully and properly carried out by the said tenderer (s) and accordingly discharges the guarantee.

6. That the Owner Company will have full liberty without reference to us and without affecting this guarantee to postpone for any time or from time to time the exercise of any of the power of the owner under the tender.
7. Notwithstanding anything contained herein before, our liability shall not exceed Rs…… (Rupees……only) and shall remain in force till…….. (Date to be filled up shall be 180 days from the date of submission of Bid).

Date _____ ……. ……..Bank
Corporate Seal of the Bank

By its constitutional Attorney
Signature of duly Authorized person
On behalf of the Bank

With Seal & Signature code

4.0 ANNEXURE-D

PRO-FORMA CERTIFICATE
(No claim, No arbitration)

To,
Chief General Manager (Thermal)
Gujarat Industries Power Company Limited,
Surat Lignite Power Plant,
Village: Nani Naroli, Ta. Mangrol,
Dist. Surat – 394110 (Gujarat).

Dear Sir,

Subject:_____

Ref: Work Order No.:_____Dated_____

We hereby confirm with free consent as under:-

1. The measurements certified in final bill is full and final. We accept all the certified measurements and no claim related to the measurement is left.
2. The payment certified in that or above referred LoI / contract is full and final. We accept this, and no claim related to payment is left.
3. The rates of the LoI / contract and its amendments are firm till completion of contract and extension period. We shall not claim any escalation against these rates.
4. Along with the contract referred, the ARBITRATION CLAUSE also perishes i.e. we will not resort to arbitration.
5. No extra items are left to be settled.
6. We do not have any claims against any item related to the LoI than those items certified in the bills.
7. We are accepting the recoveries or hold amount from our bills, if any, made by GIPCL against non compliance or as decided by GIPCL within terms & conditions of contract.
8. We have paid royalties, taxes for all the materials procured by us, for carrying out the works for above LoI and we indemnify GIPCL from any liability arising thereof.
9. In case of any disputes arising in future related to payment of royalties, all liabilities of settlement of dispute and its payment if any, will be borne by us.
10. We have paid wages to all the workmen who were deployed by us for carrying out above referred work as per prevailing Minimum wages act. We have also fulfilled all requirements of the P.F. Act. We have maintained all records necessary as per the statutory requirements. We hereby indemnify GIPCL from any disputes arising in future related to payment of labours, Provident Fund, etc.. and confirm that all liabilities of settlements of disputes and their payment is our responsibility.

The above confirmation will come into effect as soon as payment from final bill after due recoveries will be received by us.

For, M/S._____

Signature, Stamp and date.

5.0 ANNEXURE-E

PARTICULARS OF THE BIDDER

Sr. No.	Particulars	Please provide information here.
1.	Name of Bidder	
2.	a. Registered Office Address: b. Address for Correspondence: c. E-mail ID:	
3.	Contact Details: Contact Person Name Telephone No. : Mobile No.:	
4.	Year of establishment PAN No. GST No	
5.	User ID for e-reverse auction on website: https://e-auction.nprocure.com	

COMPANY SEAL

SIGNATURE ……

NAME ……

DESIGNATION ……..

COMPANY ……

DATE ……..

6.0 ANNEXURE-F

GUJARAT INDUSTRIES POWER COMPANY LIMITED
(Surat Lignite Power Plant)

Schedule of Deviation from Technical Specification and Commercial Terms and Conditions

All the deviations from the terms & conditions of contract shall be filled by BIDDER clause by clause in this schedule.

Sr. No	SECTION	CLAUSE NO	AS PER TENDER DOCUMENT	DEVIATION
COMPANY SEAL				
SIGNATURE-----				
NAME-------				
DESIGNATION---				
COMPANY----				
DATE ----				

The bidder here by certifies that the above mentioned are the only deviations from OWNER’s Tender enquiry. The bidder further confirms that in the events any other data and information presented in the BIDDER’s proposal and accompanying documents are at variance with specific requirements laid out in the OWNER’s Tender Document, then the latter shall govern and will be binding on the BIDDER for quoted price.

7.0 ANNEXURE-G

Declaration cum Undertaking for Safety Laws and Regulations Compliance
(To be submitted on Company's Letter Head)

I _____ on behalf of ……Name of Party/Company……..hereby confirm, agree and undertake that all the Statutory and Safety Laws and Regulations of the applicable Authority/ies shall be strictly followed for all types of works at the site during the period of the Contract, if awarded to me.

PLACE:
DATE:

Signed and Stamped by the
Authorized Signatory of the Bidder

8.0 ANNEXURE-H

Declaration for Contractual Litigations
(To be submitted on Company's Letter Head)
Please Tick (√) whichever is correct option

I _____ on behalf of ……Name of Party/Company……..hereby confirm that I /We have

a. Not invoked legal recourse e.g. litigation against any Govt, of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations for the last three(03) years. There are no ongoing/pending legal matter(s) with any of the Govt. of Gujarat Undertakings / GoG supported Companies, including GIPCL.

Please Tick ( )

OR

b. Invoked legal recourse e.g. litigation against any Govt, of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations for the last three(03) years.

Please Tick ( )

If **"b"** is applicable, please submit the details for the same.

The above is true, as on date, to the best of my knowledge. Any breach/ false statement in this regard shall amount to disqualification of the Bid being submitted herein.

PLACE:
DATE:

Signed and Stamped by the
Authorized Signatory of the Bidder

9.0 ANNEXURE-I

CERTIFICATE OF COMPLIANCE BY CONTRACTOR

(To be submitted with each monthly bill on letter head along with labour compliance records)

Certified that M/s.....has been awarded BRC / BMC for ..... for the period of.....to ..... at Gujarat Industries Power Company Limited – Surat Lignite Power Plant, Nani Naroli. I undertake to be bound by all the provisions of the Contract Labour (Regulation & Abolition) Act 1970 and the Contract Labour (Regulation & Abolition) Rules 1972, The Employees’ Provident Funds and Miscellaneous Provisions Act 1952, Minimum Wages Act 1948, Payment of Wages Act 1936 and Payment of Bonus Act 1965 and all other applicable labour laws in so far as the provisions are applicable to me in respect of the employment of contract labour by me for the month of .....

For M/s. .....
Authorized Signature with Stamp

Place: Nani Naroli
Date :

Through : HoD

To,
GM (HR&A)

10.0 ANNEXURE-J

PROCEDURE FOR MAKING ONLINE PAYMENT OF EMD/SD/TENDER FEE

1. For making online payment, first go to the website: **www.gipcl.com**

2. Then, click on the caption/link as can see like:

"Click here for Making Online Payment of EMD/SD, Advance for Ash, Advance for DM water etc."
(The link is visible as horizontal highlighted in "Blue" shade below Tenders - News & Update Section).

3. After clicking the link the new page will open. On this page, no need to enter User Name and Password. Directly click on "Payment Form" given below the sign in option.

4. After clicking the "Payment Form", the vendor has to enter the details asked which will be self-explanatory. It is desired that all the information may be filled correctly so that the payment made can be tracked.

If the some required fields are not known/available, vendor may write "Not Available" and then proceed. E.g. some information like Party code is not available to vendor or GST No. not available with vendor.

Optional Note: Although mentioned as above can be proceeded with "Not available", It will be appreciated that regular vendors may obtain the party code from Materials Dept. or Concerned Person, so that the vendor can be identified. The same party code may be used for future transactions also.
After entering the details, click on SUBMIT Button.

5. The vendor/Party will be redirected to Payment Gateway.
   By selecting the desired payment mode, payment can be made:

6. After making the payment, the receipt will be generated which has to be shared with Concerned Person of GIPCL.

Important Note: Please note that for making online payment through the above gateway, the charges* as below will be applicable, which has to be borne by Vendor/Party making the Payment:

Payment Mode	Charges
Net Banking	Rs.9 + GST
Debit Card	NIL
Credit Card	0.75% + GST
International Card	3.00% + GST
UPI	NIL

11.0 ANNEXURE-K

List of qualifying staff to be submitted with physical documents

Sr. No.	**Name of Supervisor/Engineer**	Qualification	Experience

Contractor / Authorized Representative’s
Signature, Company’s / Organization’s Seal & Date

12.0 ANNEXURE-L

List of Tools & Tackles to be submitted with physical documents

Sr. No.	**Description**	Nos.	Status

Contractor / Authorized Representative’s
Signature, Company’s / Organization’s Seal & Date

13.0 ANNEXURE-M

(To be submitted on Company's Letter Head)

To,
Shri C. S. Jadeja
Chief General Manager (Thermal),
Surat Lignite Power Plant,
Gujarat Industries Power Company Limited (GIPCL),
At: Nani Naroli, Taluka – Mangrol, Dist. Surat – 394110, Gujarat.

Subject: Undertaking for Deployment of Full-Time Site Civil Engineer for Bid No.: SLPP/Civil/WH/Sheds/2026.

Dear Sir,

With reference to the above-mentioned Tender Bid No. SLPP/Civil/WH/Sheds/2026 issued by Gujarat Industries Power Company Limited (GIPCL) for "Civil works for Construction of foundations, flooring & associates General Civil works for 02 nos. of new Structural Storage Sheds (Pre-Engineered Building - PEB) near existing Warehouse (Year: 2026-27)", we, the undersigned, hereby submit this Undertaking in the manner and to the extent set forth herein.

DECLARATION BY THE BIDDER

We hereby unconditionally and irrevocably undertake that:

If the work under the above Bid No. SLPP/Civil/WH/Sheds/2026 is awarded to us, we shall deploy, **on a full-time basis, at least one (1) experienced Civil Engineer** exclusively at the Project Site, **GIPCL Surat Lignite Power Plant, Nani Naroli, Surat,** for the entire duration of the execution of the scope of work assigned to us under the Contract, until the issuance of the Project Completion Certificate by GIPCL / acceptance of work by GIPCL.

SPECIFIC COMMITMENTS

1. **Full-Time Deployment:** The Civil Engineer proposed to be deployed shall be present at the Project Site on all working days throughout the construction phase of the Project. Any absence exceeding **three (3) consecutive working days** shall require prior written approval from GIPCL.
2. **Qualification & Experience:** The Civil Engineer so deployed shall possess the following minimum qualifications and experience:
   - Degree / Diploma in Civil Engineering from a recognized University / Institute.
   - Minimum 03 (three) years of post-qualification experience in execution and supervision of Civil construction projects / similar works (RCC foundation, flooring, etc… in proper line & level as per constructions drawings, quality control, following Technical specifications, etc…).
   - Prior experience in similar projects shall be preferred.
3. **Scope of Responsibility:** The deployed Civil Engineer shall, inter alia, be responsible for following:

- Day-to-day supervision and quality control of civil construction activities at site.
- Co-ordination with GIPCL's Site Engineer / Engineer-in-Charge on all technical and site matters.
- Ensuring compliance with approved GFC Drawings, specifications and IS Codes.
- Reviewing and approving contractor's construction methodology and shop drawings.
- Maintaining site records, inspection registers, material approval logs and quality documents.
- Reporting progress and raising flagging any non-conformances or deviations to Owner.

4. **Substitution:** In the event it becomes necessary to substitute the deployed Civil Engineer due to compelling circumstances, the replacement personnel shall be of **equivalent or higher qualification and experience**. Such substitution shall be made only with prior written intimation and approval of GIPCL, and the replacement shall be deployed without any gap in site coverage.
5. **Additional Deployment:** The above commitment is for a **minimum** of one (1) full-time Civil Engineer. We acknowledge that GIPCL may, depending on the volume and pace of construction activities, request deployment of additional site personnel, and we shall comply with such requests within a reasonable timeframe.
6. **Proposed Civil Engineer (if identified at Bid Stage):** We provide below the details of the Civil Engineer proposed to be deployed at site (if available at this stage). This information is indicative; GIPCL's approval shall be obtained prior to deployment.

Sr.	Particulars	Details
1	Full Name	
2	Qualification (Degree / Diploma)	
3	Specialization	
4	Total Experience (Years)	
5	Experience in Similar Projects (Years)	
6	Current Employer	
7	Contact Number & Email ID	

7. **Breach of Undertaking:** We understand and agree that failure to deploy the committed full-time Civil Engineer at site after award of the Contract shall constitute a **breach of Contract**, and GIPCL shall be entitled to invoke the remedies available under the Contract, including deduction from the Running Account Bills, invocation of Performance Bank Guarantee and / or termination of the Contract, as GIPCL may deem appropriate.
8. **Confirmation:** We confirm that the above commitment is unconditional, is not subject to any precondition or qualification, and shall form part of the Contract between GIPCL and ourselves upon award of the work.

DECLARATION

We, the undersigned, solemnly declare and confirm that the above undertaking is made in good faith, that all information provided herein is true and correct to the best of our knowledge and belief, and that we are fully authorized to execute this Undertaking on behalf of the Bidder.

Yours faithfully,

For and on behalf of:

(Name of Firm: _____)

Signature: _____ Name: _____

Designation: _____

Date: _____ Place: _____

Official Seal / Stamp of the Firm:

INSTRUCTIONS TO BIDDERS:

- This Undertaking must be submitted on the official letterhead of the Bidder.
- It must be signed by the Authorized person only.
- This document must be included in the Technical Bid (Part-1) envelope.
- Any Undertaking that is unsigned, undated, unstamped, or submitted on plain paper shall be treated as non-compliant and may result in disqualification of the Bid.

14.0 ANNEXURE-N

BANK MANDATE FORM FOR ONLINE PAYMENT

MANDATE FORM

ELECTRONIC CLEARNING SERVICE (CREDIT CLEARING) / REAL TIME GROSS SETTLEMENT (RTGS) FACILITY FOR RECEIVING PAYMENTS

A. DETAILS OF ACCOUNT HOLDER

NAME OF ACCOUNT HOLDER	
COMPLETE CONTACT ADDRESS	
MOBILE/ TELEPHONE NUMBER	1) MOBILE NO.: 2) LANDLINE TELEPHONE:
EMAIL	
PARTY CODE	

B. BANK ACCOUNT DETAILS :

BANK NAME	
BRANCH NAME WITH COMPLETE ADDRESS TELEPHONE NUMBER AND EMAIL.	
BRANCH'S IFSC CODE	
TYPE OF BANK ACCOUNT (SB/CURRENT/CASH CREDIT/SALARY)	
COMPLETE BANK ACCOUNT NUMBER	
MICR CODE OF BANK	

We hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information we would not hold the user Institution responsible. We have read the option of e-payment and agree to discharge responsibility expected from us.

Date :

Authorized Signatories
Company Name

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

Date :
Encl : Hard copy of cancelled Cheque. (Bank Stamp) Signature

15.0 ANNEXURE-O

GUJARAT INDUSTRIES POWER CO LTD

H.O: P.O. Ranoli-391350 District: Vadodara Email: corporatepurchase@gipcl.com Phone No: 0265-2230028/2230182/2230850

VENDOR REGISTRATION FORM (for 1st time participant bidders of GIPCL’s Tender)

(*Mandatory field)

1.	Registered Name of the Firm*	
2.	Legal Status of the firm* - Proprietor/Partnership/ Public/Private	
3.	Year of Establishment Registration Date	
4.	H.O/Registered/Regional Office	
a.	Address*	
b.	Name of the Contact person*	
c.	Phone No. (Off.)	
d.	Phone No. (Resi)	
e.	Mobile No.*	
g.	E-mail*	
5.	Item Manufactured/Item Stocked/Import Dealership/Services offered*	
6.	Factory/Godown	
a.	Address	
b.	Name of the Contact person	
c.	Phone No. (Off.)	
d.	Phone No. (Resi)	
e.	Mobile No.*	
g.	E-mail*	

7.	a. MSME Registration (Yes or No) *	
	b. MSME Registered, then submit	
	registration certificate*	
8.	Correspondence Address*	
9.	Items offering to GIPCL	
a.	Details of Machinery/ Instrument & Other equipments, etc.	
b.	Lab & Testing Facilities	
10.	Whether able to submit Test Certificate along with each consignment	
11.	C.S.T.No.	
12.	VAT No.	
13.	GST Registration No.*	
14.	Income Tax/PAN No.*	
15.	IEX code (in case of import export vender)	
16.	a) Name & Address of the Bankers* b) Account No.* c) IFSC Code: * d) Copy of Cancelled cheque) *	
17.	Last Three years Annual financial Turnover	
18.	Name & Address of Chief Executive/ Directors/Partners/Proprietors	
19.	Name of Associate Companies (if applicable)	

20.	Please provide credentials as well as list of customers (enclose PO COPIES of reputed companies)	
21.	Please provide performance and completion certificate from customer	
22.	Submit authorization certificate in case Of being a dealer*	

*	*** field are mandatory to create vendor code.**

DECLARATION

I declare that the information furnished above are correct to the best of my knowledge. Signature & Seal of the Authorized person. (By Vendor)

Name: Place
Date

Remarks: by Recommended Dept.	

Checked/Verify by Respective Department Approved by Respective HOD

To,
HOD (M&C): For Vendor approval

For GIPCL M&C Office Use Only:

Supplier Code	Date of Registration

Authorized Person Name and Signature:
(Vendor code creator)

****

SECTION-G
GENERAL TECHNICAL SPECIFICATIONS

NOTE: Where any portion of the Section-G is repugnant to or at variance with any provisions of the Section-A to Section-E, then unless a different intention appears, the provision of the Section-A to Section-E shall prevail to the extent of such repugnancy of variance.

LIST OF APPROVED MAKES OF FOLLOWING MATERIALS

1.	Lime	Shell lime of approved quality
2	Cement	Cement (OPC 53 Grade only) shall be from Ultratech / Adani / Sanghi / Sidhhi/ JK Lakhmi
3	Reinforcement steel HYSD/TMT BARS (FE 500D CRS)	SAIL / RINL / RNRL/ TATA / ESSAR / JSW
4	Bricks	Approved make RED bricks
	WATER PROOFING COMPOUNDS/ADMIXTURES	Fosroc, SIKA
5	Non-shrink Grouting Material	Fosroc

GENERAL NOTES:

MATERIALS GENERALLY

1. Quality

All materials for incorporation into the works shall be of the best quality of their respective kinds as specified herein and shall be obtained from sources and suppliers approved by the Engineer or his Representative and shall comply strictly with the tests prescribed hereinafter or, where tests are not laid down in this Specifications, with the requirements of the latest issue of the relevant Indian Standards approved by the Engineer.

2. Inspection and Testing

All materials before being incorporated into the works shall be subjected to inspection and testing as provided in the Conditions of Contract and elsewhere in the Specifications. The cost of all samples, all third party testing requirement by this Specification as directed by GIPCL Engineer-in-charge or the approved Standards shall be deemed to be included in the Contract rates.

3. Approval of Materials

No materials shall be used in the works unless they have first been approved by the GIPCL Engineer or his Representative of consultant.

4. Samples

Samples of all materials proposed to be used or incorporated in the works and to be supplied by the Contractor may be called for at any time by the GIPCL Engineer or his Representative.

5. Independent Test Analysis

Independent tests and analysis of any of the materials may be made from time to time by a Testing House or Analyst appointed by the Engineer or his representative in order to check the supplier’s works tests and analysis. The Contractor shall at his own expense supply and deliver to a Testing House or Analyst such materials and also testing of materials as may be directed by the GIPCL Engineer. Should the

result of any test of analysis be unsatisfactory to the GIPCL Engineer or his Representative, the materials represented will be rejected. The cost of all such testing shall be borne by the Contractor. Further, the testing of concrete cubes shall be governed by the specific terms set out hereinafter in these Specifications.

SECTION 1.00 EARTHWORK

SCOPE

This specification covers the general requirements of earthwork in excavation in different materials, site grading, filling in areas as shown in drawing, filling back around foundations and in plinths, conveyance and disposal of surplus soils or stacking them properly as shown on the drawings and as directed by the Engineer and all operations covered within the intent and purpose of this specification without any additional cost implication.

APPLICABLE CODES

The following Indian Standard Codes, unless otherwise specified herein, shall be applicable. All Codes and Standards referred to shall be the latest version on the date of offer made by the Bidder unless otherwise indicated.

1.	IS 783-1985	-	Code of practice for laying of concrete pipes.
2.	IS 1200	-	Method of measurement of building and civil engineering works.
	(Part 1)		Part 1- Earthwork
	(Part 27)		Part 27- Earthwork done by mechanical appliances.
3.	IS 3764-1992	-	Excavation work-code of safety.
4.	IS 2720	-	Methods of test for soils:
	(Part 1)-1973	-	Part 1 Preparation of dry soil samples for various tests.
	(Part 2)-1986	-	Part 2 Determination of water content.
	(Part 4)-	-	Part 4 Grain size analysis.
	(Part 5)	-	Part 5 Determination of liquid and plastic limit.

(Part 7)	-	Part 7 Determination of water content-dry density relation using light compaction.
Part (9)	-	Part 9 Determination of dry density - moisture content relation by constant weight of soil method.
(Part 14)	-	Part 14 Determination of density index (relative density) of cohesionless soils.
(Part 28)	-	Part 28 Determination of dry density of soils in place, by the sand replacement method.
(Part 33)	-	Part 33 Determination of the density in place by the ring and water replacement method.
(Part 34)	-	Part 34 Determination of density of soil in place by rubber balloon method.
(Part 38)	-	Part 38 Compaction control tests (Hilf Method).

DRAWINGS

The Engineer will furnish drawings wherever, in his opinion, such drawings are required to show areas to be excavated/ filled grade level, sequence of priorities etc. The Contractor shall follow strictly such drawings.

GENERAL

The Contractor shall furnish all tools, plants, instruments, qualified supervisory personnel, labour, materials any temporary works, consumables, any and everything necessary, whether or not such items are specifically stated herein for completion of the job in accordance with the specification requirements.

The Contractor shall carry out the survey of the site before excavation and set properly all lines and establish levels for various works such as earthwork in excavation for grading, basement, foundations, plinth filling, roads, drains, cable trenches, pipelines etc. Such survey shall be carried out by taking accurate cross sections of the area perpendicular to established reference/ grid lines at 8 m. intervals or nearer as determined by the Engineer based on ground profile. These shall be checked by the Engineer and thereafter properly recorded.

The excavation shall be done to correct lines and levels. This shall also include, where required, proper shoring to maintain excavations and also the furnishing, erecting and maintaining of substantial barricades around excavated areas and warning lamps at night for ensuring safety.

The rates quoted shall also include for dumping of excavated materials in regular heaps, bunds, riprap with regular slopes as directed by the Engineer, within the lead specified and levelling the same so as to provide natural drainage. Rock/ soil excavated shall be stacked properly as directed by the Engineer. As a rule, all softer material shall be laid along the center of heaps, the harder and more weather resisting materials forming the casing on the sides and the top. Rock shall be stacked separately.

CLEARING

The areas in the site to be excavated / filled shall be cleared of fences, trees, plants, logs, stumps, bush, vegetation, rubbish, slush, etc. and other

objectionable matter. Any unwanted material lying in the area including ash, debris, etc. shall be removed up to natural GL / grade level and disposed off to suitable locations. If any roots or stumps of trees are met during excavation, they shall also be removed. The material so removed shall be burnt or disposed off as directed by the Engineer. Where earth fill is intended, the area shall be stripped of all loose/soft patches, top soil containing objectionable matter/ materials before fill commences. Any structure or services existing at the site shall be removed / re-routed with the permission of the OWNER. Existing wells, pits, marshy areas etc shall be filled up with earth of approved quality.

PRECIOUS OBJECTS, RELICS, OBJECTS OF ANTIQUITY, ETC.

All gold, silver, oil, minerals, archaeological and other findings of importance, trees cut or other materials of any description and all precious stones, coins, treasures, relics, antiquities and other similar things which may be found in or upon the site shall be the property of the Owner and the Contractor shall duly preserve the same to the satisfaction of the Owner and from time to time deliver the same to such person or persons as the Owner may from time to time authorize or appoint to receive the same.

CLASSIFICATION

All materials to be excavated shall be classified by the Engineer, into one of the following classes and shall be paid for at the rate tendered for that particular class of material. No distinction shall be made whether the material is dry, moist or wet. The decision of the Engineer regarding the classification of the material shall be final and binding on the Contractor and not be a subject matter of any appeal or arbitration.

Any earthwork will be classified under any of the following categories:

(a) Ordinary and Hard Soils

These shall include all kinds of soils containing kankar, sand, silt, murrum and/or shingle, gravel, clay, loam, peat, ash, shale, etc., which can generally be excavated by spade, pick axes and shovel, and which is not classified under "Soft and Decomposed Rock" and "Hard Rock" defined below. This shall also include embedded rock boulders not longer than 1 metre in any one direction and not more than 200 mm in any one of the other two directions.

(b) Soft and Decomposed Rock

This shall include rock, boulders, slag, chalk, slate, hard micaschist, laetrile and all other materials which in the opinion of Engineer is rock, but does not need blasting and could be removed with picks, hammer, crow bars, wedges, and pneumatic breaking equipment. The mere fact that the Contractor resorts to blasting for reasons of his own, shall not qualify for classification under 'Hard Rock'.

This shall also include excavation in macadam and tarred roads and pavements. This shall also include rock boulders not longer than 1 metre in any direction and not more than 500 mm in any one of the other two directions. Masonry to be dismantled will also be measured under this item.

(c) Hard Rock

This shall include all rock occurring in large continuous masses which cannot be removed except by blasting for loosening it. Harder varieties of rock with or without veins and secondary minerals which, in the opinion of the Engineer require blasting shall be considered as hard rock. Boulders of rock occurring in such sizes and not classified under (a) and (b) above shall also be classified as hard rock. Concrete work both reinforced and unreinforced to be dismantled will be measured under this item, unless a separate provision is made in the Schedule of Quantities.

EXCAVATION

All excavation work shall be carried out by mechanical equipment unless, in the opinion of the Engineer, the work involved and time schedule permit manual work.

Excavation for permanent work shall be taken out to such widths, lengths, depths and profiles as are shown on the drawings or such other lines and grades as may be specified by the Engineer. Rough excavation shall be carried out to a depth 150 mm above the final level. The balance shall be excavated with special care. Soft pockets shall be removed even below the final level and extra excavation filled up as directed by the Engineer. The final excavation if so instructed by the Engineer should be carried out just prior to laying the mud-mat.

The Contractor may, for facility of work or similar other reasons excavate, and also backfill later, if so approved by the Engineer, at his own cost outside the lines shown on the drawings or directed by the Engineer. Should any excavation be taken below the specified elevations, the Contractor shall fill it up, with concrete of the same class as in the foundation resting thereon, upto the required elevation. No extra shall be claimed by the Contractor on this account.

All excavation shall be done to the minimum dimensions as required for safety and working facility. Prior approval of the Engineer shall be obtained by the Contractor in each individual case, for the method he proposes to adopt for the excavation, including dimensions, side slopes, dewatering, disposal, etc. This approval, however, shall not in any way relieve the Contractor of his responsibility for any consequent loss or damage. The excavation must be carried out in the most expeditious and efficient manner. Side slopes shall be as steep as will stand safely for the actual soil conditions encountered. Every precaution shall be taken to prevent slips. Should slips occur, the slipped material shall be removed and the slope dressed to a modified stable slope. Removal of the slipped earth will not be paid.

Excavation shall be carried out with such tools, tackles and equipment as described hereinbefore. Blasting or other methods may be resorted to in the case of hard rock; however not without the specific permission of the Engineer.

The Engineer may also direct that in some extreme case, the rock may be excavated by heating and sudden quenching for splitting the rock. Fire-wood shall be used for burning and payment shall be made for such work as called for in the schedule of quantities

STRIPPING LOOSE ROCK

All loose boulders, semi detached rocks (along with earthy stuff which might move therewith) not directly in the excavation but so close to the area to be excavated as to be liable, in the opinion of the Engineer, to fall or otherwise endanger the workmen, equipment, or the work, etc., shall be stripped off and removed away from the area of the excavation. The method used shall be such as not to shatter or render unstable or unsafe the portion which was originally sound and safe.

Any material not requiring removal as contemplated in the work, but which, in the opinion of the Engineer, is likely to become loose or unstable later, shall also be promptly and satisfactorily removed as directed by the Engineer. The cost of such stripping will be paid for at the unit rates accepted for the class of materials in question.

FILL, BACK FILLING AND SITE GRADING

General

All fill material will be subject to the Engineer's approval. If any material is rejected by the Engineer, the Contractor shall remove the same forthwith from the site at no extra cost to the Owner. Surplus fill material shall be deposited/ disposed off as directed by the Engineer after the fill work is completed at no extra cost to the Owner.

No earth fill shall commence until surface water discharges and streams have been properly intercepted or otherwise dealt with as directed by the Engineer.

Material

To the extent available, selected surplus soils from excavated materials/flyash/bed ash shall be used as backfill. Fill material shall be free from clods, salts, sulphates, organic or other foreign material. All clods of earth shall be broken or removed. Where excavated material is mostly rock, the boulders shall be broken into pieces not larger than 150 mm size, mixed with properly graded fine material consisting of murrum or earth to fill up the voids and the mixture used for filling.

Filling in pits and trenches around foundations of structures, walls etc.

As soon as the work in foundations has been accepted and measured, the spaces around the foundations, structures, pits, trenches etc. shall be cleared of all debris, and filled with earth in specified layers, each layer being watered, rammed and properly compacted before the succeeding one is laid. Each layer shall be compacted to the satisfaction of the Engineer. Earth shall be compacted with approved mechanical compaction machines. Usually no manual compaction shall be allowed unless the Engineer is satisfied that in some cases manual compaction by tampers cannot be avoided. The final backfill surface shall be trimmed and levelled to proper profile as directed by the Engineer or indicated on the drawings.

FILL DENSITY

The compaction, only where so called for, in the schedule of quantities/ items shall comply with the specified (Standard Proctor/ Modified Proctor) density at moisture content differing not more than 4 percent from the optimum moisture content. The Contractor shall demonstrate adequately at his cost, by field and laboratory tests that the specified density has been obtained.

LEAD

Lead for deposition/ disposal of excavated material, shall be as specified in the respective item of work. For the purpose of measurement of lead, the area to be excavated or filled or area on which excavated material is to be deposited/ disposed off shall be divided into suitable blocks and for each of the blocks, the aerial distance between centerlines shall be taken as the lead which shall be measured by the shortest straight-line route on the plan and not the actual route taken by the Contractor. No extra compensation is admissible on the grounds that the lead including that for borrowed material had to be transported over marshy or 'katcha' land/ route.

MEASUREMENT AND PAYMENT

Earth work in Excavation :-

All excavation shall be measured net dimensions for purpose of payment shall be reckoned on the horizontal area of the excavation at the base considering PCC width for foundations of the walls, columns, footings, pedestal, plinth beam, tanks, rafts or other foundations/ structures to be built, multiplied by the mean depth from the surface of the ground in accordance with the drawings. Excavation in side slopes & working space shall not be paid for. The Contractor may make such allowance in his rates to provide for excavation in side slopes keeping in mind the nature of the soil and safety of excavation, working space for shuttering and other purpose, any excess excavation for necessary, steps, sloping etc.

No over-excavation below founding level given drawing will be permitted. In such cases over-excavation shall be made good by the Contractor with concrete of the same class as in the foundations at his cost. Depth of excavation is to be measured from existing ground level.

Unless otherwise specified, the unit rates quoted for excavation in different types of material shall also account for a basic lead of 3500 meters/100 meters for disposal as specified in item nomenclature or as directed.

Earth work in Backfilling :-

As per specification the sides of foundations of columns, footings, structures, pedestal, plinth beam, walls, tanks, rafts, pits, trenches, pipe lines, filling under floors and other substructures etc. shall be backfilled using with stacked excavated materials by compacting the backfilling in layers to 95% modified proctor density including carting of the backfill material from areas where it is stacked.

Filling of fly ash or bed material or mixture of the both, in foundations, plinth beam, under floors, trenches and other places, at all lead, depth, lift and locations including watering and compacting or flooding with water, dressing & leveling etc. complete as per drawing, specification and instruction of the engineer. Further, fly ash and bed

material of required quantity shall be free issue from fly ash/bed ash silos, however, necessary transportation by fully covered dumper/truck shall be in the scope of contractor and the remained/unused quantity of fly ash shall be removed from site by the contractor as directed.

The measurement for payment of total backfilling (i.e. including backfilling using stacked excavated materials and flay/bed ash) shall be the theoretical excavation volume paid in item of excavation less volume of concrete as per drawing. The contractor shall take into account in his rate the provision for any excess backfilling for excavated area for necessary working space, steps, sloping etc. required for excavation safely and other & re-filling the side slope/working space etc.

The quoted rate shall include all operations such as clearing, excavation, lead and transport, fill, compaction etc. as specified in respective item. Actual quantity of consolidated filling shall be measured and paid for in cubic metres. The lead, lift etc. shall be as indicated in the schedule of quantities.

13. Filling in plinth and ground with Fly ash/bed ash .

(A) Filling shall be carried out with approved material. The contractor shall make necessary access roads to those areas and maintain the same at his cost, if such access road does not exist,

(B) If any material is rejected by owner/consultant, Contractor shall remove the same forthwith from the site at no extra cost to the owner. Surplus fill material shall be disposed off by uniform spreading within the site as instructed by the Engineer.

(C) The compaction shall be carried out as specified in the item description of respective items.

14 . TIMBERING AND SHORING

Close timbering shall be done by completely covering the sides of the trenches and pits generally with short, upright members called 'polling boards'. These shall be of minimum 25 cm x 4 cm sections or as directed by Engineer. The boards shall generally be placed in position vertically side by side without any gap on each side of the excavation and shall be secured by horizontal walings of strong wood at maximum 1.2 metres spacings, strutted with ballies or as directed by Engineer. The length of the ballie struts shall depend on the width of the trench or pit. If the soil is very soft and loose, the boards shall be placed horizontally against each side of the excavation and supported by vertical walings, which in turn shall be suitably strutted. The lowest boards supporting the sides shall be taken into the ground and no portion of the vertical side of the trench or pit shall remain exposed, so as to render the earth liable to slip out.

Timber shoring shall be 'close' or 'open' type, depending on the nature of soil and the depth of pit or trench. The type of timbering shall be as approved by Engineer. It shall be the responsibility of Contractor to take all necessary steps to prevent the sides of excavations, trenches, pits, etc., from collapsing.

Timber shoring may be required to keep the sides of excavations vertical to ensure safety of adjoining structures or to limit the slope of excavations, or due to space

restrictions or for other reasons. Such shoring shall be carried out, except in an emergency, only under instructions from Engineer.

The withdrawal of the timber shall be done very carefully to prevent the collapse of the pit or trench. It shall be started at one end and proceeded with systematically to the other end. Concrete or masonry shall not be damaged during the removal of the timber. No claim shall be entertained for any timber which cannot be withdrawn and is lost or buried.

In the case of open timbering, the entire surface of the side of trench or pit in not required to be covered. The vertical boards of minimum 25 cm x 4 cm sections shall be spaced sufficiently apart to leave unsupported strips of maximum 50 cm average width. The detailed arrangement, sizes of the timber and the spacings shall be subject to the approval of Engineer. In all other respects, specification for close timbering shall apply to open timbering.

In case of large pits and open excavations, where shoring is required for securing safety of adjoining structures or for any other reasons and where the planking for sides of excavations/pits cannot be strutted against, suitable inclined struts supported on the excavated bed shall be provided. Load from such struts shall be suitably distributed on the bed to ensure no yielding of the strut. If, however, Engineer directs any timbering to be left-in, keeping in mind the type of construction or any other factor, Contractor shall be paid for at the scheduled item-rate for such left-in timbering.

This specification covers the general requirements of dewatering excavations in general.

15.0 DEWATERING

All excavations shall be kept free of water. Grading in the vicinity of excavation shall be properly closed to prevent surface water running into excavated areas. Contractor shall remove by pumping or other means approved by Engineer any water inclusive of rain water and subsoil water accumulated in excavation and keep all excavations dewatered until the foundation work is completed and backfilled. Sumps made for dewatering must be kept clear of the excavations / trenches required for further work. Method of pumping shall be approved by Engineer; but in any case, the pumping arrangement shall be such that there shall be no movement of subsoil or blowing in due to differential head of water during pumping. Pumping arrangements shall be adequate to ensure no delays in construction.

When there is a continuous inflow of water and quantum of water to be handled is considered in the opinion of Engineer, as large, well point system - Single stage or multi stage, shall be adopted. Contractor shall submit to Engineer his scheme of well point system including the stages, the spacing, number and diameter of well points, headers etc., and the numbers, capacity and location of pumps of approvals. The cost of dewatering shall be included in the item rate for excavation. No additional payment shall be made for dewatering.

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SECTION 2.00 CONCRETE AND ALLIED WORKS

2.01

I. Applicable Codes

The following codes and standards are made a part of the Specifications. All standards, codes of practices referred to herein shall be the latest edition including all applicable official amendments and revisions.

In case of discrepancy between this specification and those referred to herein, this specification shall prevail.

(a) Materials

1.	IS 269	:	Specification for ordinary, rapid hardening and low heat Portland cement.
2.	IS 455	:	Specification for Portland blast furnace slag.
3.	IS 1489	:	Specification for portland-pozollana cement.
4.	IS 4031	:	Methods of physical tests for hydraulic cement.
5.	IS 650	:	Specification for standard sand for testing of cement.
6.	IS 383	:	Specification for coarse and fine aggregate from natural sources for concrete.
7.	IS 2386 (parts I to VIII)	:	Methods of test for aggregate for concrete.
8.	IS 516	:	Methods of test for strength of concrete.
9.	IS 1199	:	Methods of sampling and analysis of concrete.
10.	IS 2396(I) IS 5640	:	Flakiness Index of aggregate.
11.	IS 3025	:	Methods of sampling and test (Physical and chemical water used in industry).
12.	IS 432 (part I & II)	:	Specification for mild steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement.
13.	IS 1139	:	Specification for hot rolled mild steel and medium tensile steel deformed bars for concrete reinforcement.
14.	IS 1566	:	Specification for plain hard drawn steel wire fabric for concrete reinforcement.
15.	IS 1785	:	Specification for plain hard drawn (Part I) steel wire for pre stressed concrete.
16.	IS 1786	:	Specification for cold twisted steel bars for concrete reinforcement.
17.	IS 2090	:	Specification for high tensile steel bars used in pre stressed concrete.
18.	IS 4990	:	Specification for plywood for concrete shuttering work.
19.	IS 2645		Specification for integral cement water-proofing Compounds.

(b) Equipment

1.	IS 1791	:	Specification for batch type concrete mixers.
2.	IS 2438	:	Specification for roller pan mixer.
3.	IS 2505	:	Specification for concrete vibrators immersion type.
4.	IS 2506	:	Specification for screed board concrete vibrators.
5.	IS 2514	:	Specification for concrete vibrating tables.
6.	IS 3366	:	Specification for pan vibrators.
7.	IS 4656	:	Specification for form vibrators for concrete.
8.	IS 2722	:	Specification for portable swing weigh-batchers for concrete (single and double bucket type).
9.	IS 2750	:	Specification for steel scaffolding.

(c) Codes of Practice

1.	IS 456-2000	:	Code of practice for plain and reinforced concrete
2.	IS 1343	:	Code of practice for prestressed concrete.
3.	IS 457	:	Code of practice for general construction of plain and reinforced concrete for dams and other massive structures.
4.	IS 3370 (Part I to IV)	:	Code of practice for concrete structures for storage of liquids.
5.	IS 3935	:	Code of practice for composite construction.
6.	IS 3201	:	Criteria for design and construction of precast concrete trusses.
7	IS 2204	:	Code of practice for construction of reinforced concrete shell roof.
8.	IS 2210	:	Criteria for the design of RC shell structures and folded plates.
9.	IS 2751	:	Code of practice for welding of mild steel bars used for reinforced concrete construction.
10.	IS 2502	:	Code of practice for bending and fixing of bars for concrete reinforcement.
11.	IS 3658	:	Code of practice for use of immersion vibrators
12.	IS 3414	:	Code of practice for design and installation of joints in buildings.
13.	IS 4014 (Part I & II)	:	Code of Practice for steel tabular, scaffolding
14.	IS 2571	:	Code of practice for laying in-situ cement concrete flooring

(d) Construction Safety

1. IS 3696 : Safety code for scaffolds and ladders

(e) Measurement

1.	IS 1200	:	Method of measurement of building works.
2.	IS 3385	:	Code of practice for measurement of civil engineering works.

The above mode of measurements shall be applicable only if it is not given specifically in the tender document.

II. General

The quality of materials, method and control of manufacture and transportation of all concrete work irrespective of mix, whether reinforced or otherwise shall conform to the applicable portions of this specification.

OWNER shall have the right to inspect the source/s of material/s the layout and operation of procurement and storage of materials, the concrete batching and mixing equipment, and the quality control system. Such an inspection shall be arranged and engineer's approval obtained, prior to starting of concrete work.

III. Materials

The ingredients to be used in the manufacture of standard concrete shall consist solely of standard type Portland cement, clean sand, natural coarse aggregate, clean water and admixtures.

A. Cement

a) If the contractor is instructed to supply cement, then the following points shall be applicable.

i) Unless otherwise specified the cement shall be ordinary Portland cement in 50kg bags. The use of bulk cement will be permitted only with the approval of Engineer.

ii) A certified report attesting to the conformance of the cement to IS specifications by the cement manufacturer's chemist shall be furnished to engineer if demanded.

iii) Cement held in storage for a period of ninety (90) days or longer shall be tested. Should at any time OWNER have reasons to consider that any cement is defective then irrespective of its origin, and/or manufacturers test certificate, such cement shall be tested immediately at contractor's cost at a National Test Laboratory/approved laboratory and until the results of such tests are found satisfactory, it shall not be used in any work. Contractor shall not be entitled to any claim of any nature on this account.

(B) Aggregate

a) Aggregate in general designates both fine and coarse inert materials used in the manufacture of concrete. Fine aggregate is aggregate all of which passes through 4.75 mm IS sieve. Coarse aggregate is aggregate most of which is retained on 4.75 mm sieve.

b) All fine and coarse aggregates proposed for use in the work shall be subject to Engineer's approval and after specific materials have been accepted the source of supply of such materials should not be changed without prior approval of Engineer.

c) Aggregates shall, except as noted above, consist of natural sands, crushed stone and gravel from a source known to produce satisfactory aggregate for concrete and shall be chemically inert, strong, hard durable against weathering of limited porosity and free from deleterious materials that may cause corrosion of the reinforcement or may impair the strength and/or durability of concrete. The grading of aggregates shall be such as to produce a dense concrete of specified strength and consistency that will work readily into position without segregation and shall be based on the mix design and preliminary tests on concrete specified later.

d) Sampling and testing

Samples of the aggregates for mix design (mix design if specified or instructed) and determination of suitability shall be taken under the supervision of Engineer and delivered to the laboratory, well in advance of the scheduled placing of concrete. Records of tests which have been made on proposed aggregates and on concrete made from this source of aggregates shall be furnished to Engineer in advance of the work for use in determining aggregate suitability. The costs of all such test, sampling etc. shall be borne by contractor.

e) Storage of Aggregates

All coarse and fine aggregates shall be stacked in stock separately in stock piles in the material yard near the work site in bins properly constructed to avoid inter mixing of different aggregates. Contamination with foreign materials and with earth during storage and while heaping the materials shall be avoided. The aggregates must be of specified quality not only at the time of receiving at site but more so at the time of loading into mixer. Rackers shall be used for lifting the coarse aggregates from bins or stock piles. Coarse aggregate shall be piled in layers not exceeding 1.20metres in height to prevent coning or segregation. Each layer shall cover the entire are of the stock pile before succeeding layers are started. Aggregates that have become segregated shall be rejected.

f) Specific Gravity

Aggregate except as noted above and for other than light weight concrete shall consist of natural or crushed sand shall conform to IS 383. The sand shall be clean sharp, hard, strong and durable and shall be free from dust, vegetable substances, adherent coating, clay, alkali, organic matter, mica, salt or other deleterious substances, which can be injurious to the setting qualities / strength / durability of concrete.

(C) Machine made Sand

Machine made sand will be acceptable, provided the constituent rock/gravel composition shall be sound, hard dense, non-organic uncoated and durable against weathering and with the prior approval of the Engineer.

i) Screening and Washing

Sand shall be prepared for use for such screening or washing, or both, as necessary, to remove all objectionable foreign matter while separating the sand grains to the required size fractions.

ii) Foreign Material Limitations

The percentage of deleterious substances in sand delivered to the mixer shall not exceed the following:

i)	Material finer than 75 micron IS sieve	3.00	15.00
ii)	Shale	1.00	-
Iii)	Coal and lignite	1.00	1.00
iv)	Clay lumps	1.00	1.00
v)	Total of all above substances including items (i) to (iv) for uncrushed sand and items (iii) and (iv) for crushed sand	5.00	2.00

iii) Gradation

IS Sieve Designation	percentage passing for			
	Grading Zone-I	Grading Zone II	Grading Zone III	Grading Zone IV
10mm	100	100	100	100
4.75mm	90-100	90-100	90-100	90-100
2.36 mm	60-95	75-100	85-100	95-100
1.18 mm	30-70	55-90	75-100	90-100
600 micron	15-34	35-59	60-79	80-100
300 micron	5-20	8-30	12-40	15-50
150 micron	0-10	0-10	0-10	0-15

Where the grading falls outside the limits of any particular grading zone of sieves other than 600 micron IS sieve, by total amount not exceeding 5 percent, it shall be regarded as falling within that grading zone. This tolerance shall not be applied to percentage passing the 600 micron IS sieve or to percentage passing any other sieve on the coarser limit of grading zone I or the finer limit of grading zone IV.

iv) Fineness Modulus

The sand shall have a fineness modulus of not less than 2.2 or more than 3.2. The fineness modulus is determined by adding the cumulative percentages retained on the following IS sieves sizes 4.75mm, 2.36mm, 1.18mm 600 micron, 300 micron and 150 micron and dividing the sum by 100.

(D) Coarse Aggregate

a) Coarse aggregate for concrete, except as noted above and for other than light weight concrete shall conform to IS 383. This shall consist of natural or crushed stone and gravel and shall be clean and free from elongated, flaky or laminated pieces adhering

coatings, clay lumps, coal residue, clinkers slag, alkali, mica, organic matter or other deleterious matter.

b) Screening and Washing

Natural gravel and crushed rock shall be screened and/or washed for the removal of dirt or dust coating, if so demanded by Engineer.

c) Grading

Coarse aggregate shall be graded in both cases the grading shall be within the following limits.

IS Sieve Designation	%passing for single sized aggregate of nominal size				
	40mm	20mm	16mm	12.5mm	10mm
63mm	100	-	-	-	-
40mm	85-100	100	-	-	-
20mm	0-20	85-100	100	-	-
16mm	-	-	85-100	100	-
12.5mm	-	-	-	85-100	100
10mm	0-5	0-20	0-30	0-45	85-100
4.75mm	-	0-5	0-5	0-10	0-20
2.36mm	-	-	-	-	0-5

IS Sieve Designation	% passing for graded aggregate of nominal size			
	40mm	20mm	16mm	12.5mm
63mm	100	-	-	-
40mm	95-100	100	-	-
20mm	30-70	95-100	100	-
16mm	-	-	90-100	-
12.5mm	-	-	-	90-100
10mm	10-35	25-55	30-70	40-85
4.75mm	0-5	0-10	0-10	0-10
2.36mm	-	-	-	-

The pieces shall be angular in shape and shall have granular or crystalline surfaces, friable, flaky and laminated pieces, mica and shale, if present, shall be only in such quantities that will not, in the opinion of Engineer affect adversely the strength and/or durability of concrete. The maximum size of coarse aggregate shall as specify in each item description. The maximum size of coarse aggregate shall be the maximum size specified above, but in no case greater than 1/4 of the minimum thickness of the member, provided that the concrete can be placed without difficulty so as to surround all reinforcement thoroughly and fill the corners of the form. Plums above 150mm and upto any reasonable size can be used in plain mass concrete work of large dimensions upto a maximum limit of 20% of volume of concrete when specifically approved by Engineer. For heavily reinforced concrete members the nominal maximum size of the aggregate shall be 5mm less than the minimum clear distance between the reinforcing main bars or 5mm less than the minimum cover to the reinforcement

whichever is smaller. The amount of fine particles occurring in the free state or as loose adherent shall not exceed 1% when determined by laboratory sedimentation tests as per IS 2386. After 24 hours immersion in water, a previously dried sample shall not have gained more than 10% of its oven dry weight in air, as determined by IS 2386.

d) Foreign Materials Limitations

The percentage of deleterious substance in the coarse aggregate delivered to the mixer shall not exceed the following:

		Percent by weight Uncrushed	crushed
i)	Material finer than 75micron IS sieve	3.00	3.00
ii)	Coal and lignite	1.00	1.00
iii)	Clay lumps	1.00	1.00
iv)	Soft fragments	3.00	-
v)	Total of all the above substances	5.00	5.00

(E) Water

a) Water used for both mixing and curing shall be free from injurious amounts of deleterious materials. Potable waters are generally satisfactory for mixing and curing concrete.

b) In case of doubt, the suitability of water for making concrete shall be ascertained by the compressive strength and initial setting time test specified in IS-456. The sample of water taken for testing shall be typical of the water proposed to be used or concreting, due account being paid to seasonal variation. The sample shall not receive any treatment before testing other than that envisaged in the regular supply of water proposed for use in concrete. The sample shall be stored in a clean container previously rinsed out with similar water.

c) Average 28 days compressive strength of at least three 15cm concrete cubes prepared with water proposed to be used shall not be less than 90% of the average strength of three similar concrete cubes prepared with distilled water.

d) The initial setting time or test block made with the appropriate set cement and the water proposed to be used shall not be less than 30 minutes and shall not differ by more than plus minus 30 seconds from the initial setting time of control test block prepared with the appropriate test cement and distilled water. The test blocks shall be prepared and tested in accordance with the requirements of IS 4031.

e) Where water can be shown to contain an excess of acid, alkali sugar or salt, engineer may refuse to permit its use. As a guide, the following concentrations represent the maximum permissible values:

i) To neutralize 200ml sample of water, using phenolphthalein as indicator, it should not require more than 2 ml of 0.1 normal NaOH. The details of test shall be as given in IS 3025.

ii) To neutralize 900ml sample of water using methyl orange as an indicator it should not require more than 10 ml of 0.1 normal HCl. The details of test shall be given in IS 3025.

iii) Percentage of solids when tested in accordance with the method indicated below shall not exceed the following:

	percent	method of test (ref. to clause no. in IS 3025-1964.
Organic	0.02	10 and 11 (organic solids=total solids minus ignited residue)
Inorganic Sulphate (as SO4)	0.30	11 (Ignited residue)
Alkali Chlorides (as Cl)	0.05	20
	0.10	24

(F) Brick aggregates

The brickbats shall be of new bricks well burnt, hard, durable and broken to sizes, well graded. It shall be free from dust, the size shall be of 37mm and down. It shall be free from earth and other impurities.

(G) Reinforcement Steel

a) Reinforcement bars, if supplies are arranged by contractor, shall be of approved supplier and as per following codes :

High Yield Strength Deformed bars : IS 1786, Fe 500
Mild steel bars : Grade I of IS 432
Welded wire fabric : IS : 1566

b) Plain round mild steel bars grade II as per IS:432 (part I) may be used with prior approval of Owner in writing and with 10% increase in the reinforcement area but its use shall not be permitted in structures located in earthquake zones subjected to severe damage (as per IS:1895) and for structures subject to dynamic loading (other than wind loading), such as frames supporting rotary or reciprocating machinery etc.

c) All reinforcement shall be clean, free from grease, oil, paint, loose mill scale, loose rust, dust, bituminous material or any other substances that will destroy or reduce the bond. All rods shall be thoroughly cleaned before being fabricated. Pitted and defective rods shall not be used.

Mix Design

a) All concrete in the works shall be of volumetric or design mix if specified and as defined in IS 456, Whether reinforced or otherwise, all design mix concrete works to be carried out under this specification shall be divided into the following classifications:

MINIMUM COMPRESSIVE STRENGTH OF 15 CM CUBES AT 7 AND 28 DAYS AFTER MIXING, CONDUCTED IN ACCORDANCE WITH IS 516

Class	Preliminary test N/SQ.MM		Work test N/SQ.MM		Max size of aggregate MM	Minimum Cement content per cum for design mix only if specified
	at 7 days	at 18 days	at 7days	at 28 days		
M 40	35.0	54.0	27.0	46.0	20	450 kg.
M 35	31.0	45.0	23.5	39.0	20	450 kg.
M 30	28.0	42	20.0	33.0	40 or 20	420 kg.
M 25	3.5	35.0	17.0	28.0	40 or 20	390 kg.
M 20	19.4	29.0	13.5	22.0	40 or 20	345 kg.
M 15	14.0	17.0	10.0	16.0	40 or 20	300 kg.

b) It shall be very clearly understood that whenever the class of concrete such as M 20 is specified it shall be the contractor's responsibility to ensure that minimum crushing strength stipulated for the respective class of concrete is obtained at works. The maximum total quantity of aggregate by weight per 50 kg of cement shall not exceed 450 kg except when otherwise specifically permitted by Engineer

c) To fix the grading of aggregates, water cement ratio, workability and the quantity of cement required to give preliminary and works cubes of the minimum strength specified, the proportions of the mix shall be determined by weight / volume. Adjustment of aggregate proportions due to moisture present in the aggregate shall be made. Mix proportioning shall be carried out according to Indian Standard Specifications.

d) Whenever there is a change either in required strength of concrete or water cement ratio or workability or the source of aggregates and/or cement, preliminary tests shall be repeated to determine the revised proportions, of the mix to suit the altered conditions.

e) While fixing the value for water cement ratio for preliminary mixes, assistance may be derived from the graph (appendix IS 456 showing the relationship between the 28 day compressive strengths of concrete mixes with different water cement ratios and the 7 days compressive strength of cement tested in accordance with IS 269).

Preliminary tests

a) Test specimens shall be prepared with at least two different water/cement ratios for each class of concrete, consistent with workability required for the nature of the work. The materials and proportions used in making preliminary tests shall be similar in all respects to those to be actually employed in the works at the object of these tests is to determine the proportions of cement, aggregates and water necessary to produce concrete of required consistency and to give the specified strength. It will

be the contractor's sole responsibility to carry out these tests and he shall therefore furnish to Engineer a statement of proportions proposed to be used for the various concrete mixes.

b) Materials shall be brought to the room temperature and all materials shall be in a dry condition. The quantities of water, cement and aggregates for each mix shall be determined by weight/volume to an accuracy of 1 part in 1000 parts.

c) Mixing shall be done by a mixer machine as per IS 516 in such a manner as to avoid loss of water. The cement and fine aggregate shall first be mixed dry until the mixture is uniform in colour. The coarse aggregate shall then be added, mixed and water added and mixed thoroughly for a period of not less than 3minutes until the resulting concrete is uniform in appearance. Each mix of concrete shall be such a quantity as to leave about 10% excess concrete after moulding the desired number of test specimens.

d) The consistency of each mix of concrete shall be measured immediately after mixing, by the slump test in accordance with IS 1199. If in the slump test, care is taken to ensure that no water or other materials is lost, the materials used for the slump test may be remixed with the remainder of the concrete for making the specimen test cubes. The period of remixing shall be as short as possible yet sufficient to produce a homogeneous mass.

e) Compression tests of concrete cubes shall be made as per IS 516 on 15cm cubes. Each mould shall be provided with a metal base having a plane surface so as to support the mould during filling without leakage. The base plate shall be preferably attached to the mould by springs or screws. The parts of the mould when assembled shall be positively and rigidly held together. Before placing concrete the mould and base plate shall be cleaned and oiled. The dimensions and internal faces of the mould shall be accurate within the following limits:

Height and distance between the opposite faces of the mould shall be of specified size plus minus 0.2mm. The angle between the adjacent internal faces and between internal faces and top and bottom planes of mould shall be 90Deg. plus/minus 5 Deg. The interior faces of the mould shall be plane surfaces with a permissible variation 0.03 mm.

f) Concrete test cubes shall be moulded by placing fresh concrete in the mould and compacted as specified in IS 516.

g) Curing shall be as specified in IS 516. The cubes shall be kept in moist air of at least 90% relative humidity at a temperature of 27 Deg. cent. plus minus 2 Deg. cent. for 24 hours plus minus half an hour from the time of adding water to the dry ingredients. Thereafter they shall be removed from the moulds and kept immersed in clean, fresh water and kept at 27 Deg. cent. plus minus 2 Deg. Cent. temperature until required for test. Curing water shall be renewed every seven days. A record of maximum and minimum temperatures at the place of storage of the cubes shall be maintained during the period they remain in storage.

h) Testing of Specimens

The strength shall be determined based on not less than three cubes test specimens for each age and each water cement ratio. All these laboratory test results shall be tabulated and furnished to OWNER. The test result shall be accepted by OWNER if the average compressive strengths of the specimens are tested subject to the condition that only one out of the five consecutive test may give a value less than the specified strength for that age. The Engineer may direct the contractor to repeat the tests if the results are not satisfactory and also to make such changes as he considers necessary to meet the requirements specified. All these preliminary tests shall be conducted by the contractor at his own cost in an approved laboratory.

Proportioning consistency, batching and mixing of concrete proportions

a) Aggregate

The proportions which shall be decided by conducting preliminary test shall be by volume. These proportions of cement, fine and coarse aggregates shall be maintained during subsequent concrete mixing. The supply of properly graded aggregate of uniform quality shall be maintained over the period of work, the grading of aggregates shall be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportions. The different sizes shall be stocked in separate stock piles. The grading of coarse and fine aggregate shall be checked as frequently as possible as determined by Engineer, to ensure maintaining of grading in accordance with the samples used in preliminary mix design. The material shall be stock piled well in advance of use.

b) Cement

The cement shall be measured by volume.

c) Water

Only such quantity of water shall be added to the cement and aggregates in the concrete mix as to ensure dense concrete, specified surface finish, satisfactory workability, consistent with the strength stipulated for each class of concrete. The water added to the mix shall be such as not to cause segregation of material or the collection of excessive free water on the surface of the concrete.

The water cement (W/C) ratio is defined as the volume of water in the mix (including the surface moisture of the aggregates) divided by the volume of cement in the mix. The actual water cement ratio to be adopted shall be determined in each instance by the contractor and approved by the Engineer.

d) Proportioning by water/cement ratio

The W/C ratio specified for use by Engineer shall be maintained. The contractor shall determine the water content of the aggregates as frequently as directed by Engineer as the work progress and as specified in IS 2386 (part-III) and the amount of water added at the mixer shall be adjusted as directed by Engineer so as to

maintain the specified W/C ratio. To allow for the variation in volume of aggregates due to variation in their moisture content suitable adjustments in the volume of aggregates shall also be made.

e) Consistency and slump

Concrete shall be of a consistency and workability suitable for the conditions of the job. After the amount of water required is determined, the consistency of the mix shall be maintained throughout the progress of the corresponding parts of the work and approved tests e.g. slump tests, compacting factory tests, in accordance with IS 1199 shall be conducted from time to time to ensure the maintenance of such consistency.

The following tabulation gives a range of slumps which shall generally be used for various types of construction unless otherwise instructed by the Engineer.

DESIGN MIX CONCRETE

Mix Design & Testing

For Design Mix Concrete, the mix shall be designed according to IS: 10262 and SP: 23 to provide the grade of concrete having the required workability and characteristic strength not less than appropriate values given in IS: 456. The design mix shall in addition be such that it is cohesive and does not segregate and should result in a dense and durable concrete and also capable of giving the finish as specified. For liquid retaining structures, the mix shall also result in water tight concrete. The CONTRACTOR shall exercise great care while designing the concrete mix and executing the works to achieve the desired result.

Minimum cement content, maximum water cement ratio and minimum grade of concrete shall be considered as per IS: 456 for moderate exposure condition. Minimum fire rating of 2 hours shall be considered where fire hazard is expected and accordingly minimum cover shall be taken as per Table 16A of IS: 456.

For structures below ground level which are exposed to sulphate attack, requirement of cement shall be as per Table 4 of IS: 456. Intermixing of different grades of concrete in the same structure shall not be allowed in a particular structural element.

Unless otherwise specifically mentioned in Data Sheet the minimum cement content for Design Mix Concrete shall be as per as given below.

Grade of Concrete	Minimum Cement Content in Kg/cu.m of Concrete
M15	290
M20	345
M25	390 (without admixture)

M25	365 (with Admixture)
M30	410
M35 & Above	450

The minimum cement content stipulated above shall be adopted irrespective of whether the CONTRACTOR achieves the desired strength with less quantity of cement. The CONTRACTOR’s quoted rates for concrete shall provide for the above eventuality and nothing extra shall become payable to the CONTRACTOR in this account. Even in the case where the quantity of cement required is higher than that specified above to achieve desired strength based on an approved mix design, nothing extra shall become payable to the CONTRACTOR.

It shall be CONTRACTOR’s sole responsibility to carry out the mix designs at his own cost at the approved laboratory by OWNER/ENGINEER. He shall furnish to OWNER/ENGINEER at least 30 days before concreting operations, a statement of proportions proposed to be used for the various concrete mixes and the strength results obtained. The strength requirements of the concrete mixes ascertained on 150 mm cubes as per IS:516 shall comply with the requirements of IS:456.

A range of slumps which shall generally be used for various types of construction unless otherwise instructed by the ENGINEER is given below:

Structure/Member	Slump in millimeters	
	Maximum	Minimum
Reinforced foundation walls and footings, Retaining wall	75	25
Plain footings, caissons and substructure walls	75	25
Massive foundations	50	25
Slabs, Beams and reinforced walls	100	25
Pumps & miscellaneous Equipment Foundations	75	25
Building columns	100	25
Road/Pavements	50	25
Heavy mass construction	50	25
Concrete with Pump	120	80

Batching & Mixing of Concrete

Proportions of aggregates and cements, as decided by the concrete mix design, shall be by weight. These proportions shall be maintained during subsequent concrete batching by means of weigh batchers capable of controlling the weights within one percent of the desired value.

Amount of water added shall be such as to produce dense concrete of required consistency, specified strength and satisfactory workability and shall be so adjusted to account for moisture content in the aggregates. Water- cement ratio specified for use by ENGINEER shall be maintained. Each time the work stops, the mixer shall be cleaned out, and while recommencing, the first batch shall have 10% additional cement to allow for sticking in the drum.

Arrangement should be made by CONTRACTOR to have the cubes tested in an approved laboratory or in field at his own expense, with prior consent of ENGINEER. Sampling and testing of strength and workability of concrete shall be as per IS: 1199, IS: 516 and IS: 456.

NOMINAL MIX CONCRETE

Mix Design & Testing

Mix Design and preliminary tests are not necessary for Nominal Mix Concrete. However works tests shall be carried out as per IS:456. Proportions for Nominal Mix Concrete and w/c ratio may be adopted as per Table 3 of IS:456. However, it will be CONTRACTOR’s sole responsibility to adopt appropriate nominal mix proportions to yield the specified strength.

Batching & Mixing of Concrete

Based on the adopted nominal mixes, aggregates shall be measured by volume. However cement shall be by weight only.

SLUMPS FOR VARIOUS TYPES OF CONSTRUCTION

Only sufficient quantity of water shall be added to concrete during mixing to produce a mix of sufficient workability to enable it to be well consolidated, to be worked in to the corners of the shuttering and around reinforcement, to give the specified surface finish, and to have the specified surface strength. The following slumps shall be adopted for different kinds of works:-

Name of Work	When vibrator used	when vibrator not Used
Mass concrete in foundations, footings retaining walls and pavements	10mm to 25mm	50mm to 75mm
Thin sections of floors of less than 75mm thick	25mm to 40mm	75mm to 100mm
For reinforced cement concrete work:		
Mass concreting in foundations, footings, retaining walls and pavements	10mm to 25mm	80mm
Beams, slabs, columns	25mm to 40mm	100mm to 125mm
Thin shells, folded plates etc.	40mm to 50mm	125mm to 150mm

Sampling and testing concrete in the field

a) Facilities required for sampling materials and concrete in the field shall be provided by the contractor at no extra cost. The following equipment with operator shall be made available at Engineer's request (all must be in serviceable condition):

i) One concrete cube testing machine suitable for 15cm machine suitable for 15cm cubes of 100 tones capacity with providing calibration ring.

ii) Twelve cast iron cube moulds of 15 cm size.

iii) One Lab. balance to weigh upto 5 kg with sensitivity of 10gm

iv) One set of sieves for coarse and find aggregates.

v) One set of slump cone complete with tamping rod.

vi) A set of measures from 5litre to 0.1litre.

vii) One electric oven with thermostat upto 120 Deg. Cent.

viii) One flakiness gauge.

ix) One elongation index gauge.

x) One sedimentation pipette.

xi) One pyconometer.

xii) Two calibrated glass jar of 1litre capacity.

Arrangement can be made by the contractor to have the cubes tested in an approved laboratory in lieu of a testing machine at site at his expense, with the prior consent of the Engineer.

b) At least 6 test cubes of each class of concrete shall be made for every 15.0 cum. of concrete or part thereof. Such samples shall be drawn on each day for each type of concrete. Of each set of 6 cubes, three shall be tested at 7 days age and three at 28 days age. The laboratory test results shall be tabulated and furnished to Engineer. Engineer will pass the concrete if average strength of the specimens tested is not less than the strength specified, subject to the condition that only one out of three consecutive tests may give a value less than the specified strength but this shall not be less than 90% of the specified strength. The cubes shall be tested on 7th and 28th day from the day of casting of the cubes.

Admixtures

a) Admixtures may be used in concrete only with the approval of Engineer based upon evidence that, with the passage of time, neither the compressive strength nor its durability reduced. Calcium chloride shall not be used for accelerating setting of the cement for any concrete containing reinforcement, or embedded steel parts. When calcium chloride is permitted to be used, such as in mass concrete works, it shall be dissolved in water and

added to the mixing water in an amount not to exceed 1.5% of the volume of the cement in concrete or as specified. When admixtures are used, the concrete mix shall be corrected accordingly. Admixtures shall be used as per manufacturer's instructions and in the manner and with the control specified by Engineer.

b) Air entraining agents

Where specified and approved by Engineer, neutralized vinyl resin or any other approved air-entraining agent may be used to produce the specified amount of air in the concrete mix and these agents shall conform to the requirements of ASTM standard 6260, air entraining admixtures for concrete. The recommended total air content of the concrete is 4% plus minus 1%. The method of measuring air content shall be as per IS 1199.

c) Water reducing admixtures

Where specified and approved by Engineer water reducing lignosulfonate mixture shall be added in quantities specified by Engineer. The admixtures shall be added in the form of a solution.

d) Retarding admixtures

Where specified and approved by Engineer, retarding agents shall be added to the concrete mix in quantities specified by Engineer.

e) Water proofing agent

Where specified and approved by Engineer, water proofing agent conforming to IS: 2645 shall be added in quantities specified by Engineer.

Optional tests

a) Engineer may order tests to be carried out on cement, sand, coarse aggregate and water in accordance with the relevant Indian Standards. Tests on cement shall include (i) fineness test (ii) test for normal consistency (iii) test for setting time (iv) test for soundness (v) test for tensile strength (vi) test for compressive strength (vii) test for heat of hydration by experiment and by calculations in accordance with IS:269. Tests on sand shall include (i) sieve test (ii) test for organic impurities (iii) decantation test for determining clay and silt content (iv) specific gravity test (v) test for unit weight and bulkage factor. Tests on coarse aggregate shall include (i) test for sieve analysis (ii) specific gravity and unit weight of dry loose and rodded aggregate (iii) petrographic examination (iv) soundness and alkali aggregate reactivity (v) deleterious materials and organic impurities (vi) test for aggregate crushing value.
Any or all these tests would normally be ordered to be carried out only if Engineer feels the materials are not in accordance with the specifications or if the specified concrete strengths are not obtained and shall be performed by contractor at site or at an approved test laboratory. The contractor shall have to pay for all tests ordered.

b) If the works cubes do not give the stipulated strengths Engineer reserves the right to ask contractor to dismantle such portions of the work, which in his opinion are unacceptable and re-do the work to the standard stipulated at contractor's cost.

a) Load test on members or any other tests

i) In the event of any work being suspected of faulty material or workmanship or both, Engineer requiring its removal and reconstruction may order the contractor that it should be load tested in accordance with the following provisions.

ii) The test load shall be 125% of the maximum superimposed load for which the structure was designed. Such test load shall not be applied before 56 days after the effective hardening of the concrete. During the test, struts strong enough to take the load shall be placed in position leaving a gap under the members. The test load shall be maintained for 24 hours before removal.

iii) If within 24 hours of the removal of the load, the structure does not show a recovery of at least 75 percent of the maximum deflection shown during the 24 hours under load the test loading shall be repeated after a lapse of at least 72 hours. The structure shall be considered to have failed to pass the test if the recovery after the second test is not at least 75 percent of the maximum deflection shown during the second test. The cost of the load test shall be borne by the contractor.

iv) Any other tests e.g. taking out in approved manner concrete cores, examination and tests on such cores removed from such parts of the structure as directed by Engineer, sonic testing etc. shall be carried out by contractor if so directed.

v) Should the results of any test prove unsatisfactory, or the structure shows signs of weakness, undue deflection or faulty construction the contractor shall remove and rebuild the member or members involved or carryout such other remedial measures as may be required by Owner. The contractor shall bear the cost of so doing, unless the failure of the member or members to fulfill the test conditions is proved to be solely due to faulty design.

Concrete in alkali soils and alkaline water

Where concrete is liable to attach from alkali salts or alkaline water, special cements containing low amount of tricalcium aluminate shall be used, if so specified in the drawings. Such concrete shall have a minimum 28days compressive strength of 250 kg. per Sq.cm and shall contain not less than 370 kg of cement per cubic metre of concrete in place.

If specified, additional protection shall be obtained by the use of a chemically resistant stone facing or a layer of plaster of Paris covered with suitable fabric, such as jute thoroughly impregnated with tar.

Preparation prior to concrete placement

a) Before the concrete is actually placed in position, the insides of the form work shall be inspected to see that they have been cleaned and oiled. Temporary opening shall be provided to facilitate inspection, especially at bottom of columns and walls forms to permit removal of saw dust, wood shavings, binding wire, rubbish dirt etc. Openings shall be placed or holes drilled so that these materials and water can be removed easily. Such openings/holes shall be later suitably plugged.

b) The various agencies shall be permitted ample time to install drainage and plumbing lines in floor and trench drains, conduits, hangers, anchors, inserts, sleeves, bolts frames and other miscellaneous embedment to be cast in the concrete as indicated on the drawings or as is necessary for the proper execution of the work. Contractor shall cooperate fully with all such agencies and shall permit the use of scaffolding form work etc. by other agencies at no extra cost.

c) All embeded parts, inserts etc. supplied by Owner or contractor shall be correctly positioned and securely held in the forms to prevent displacement during depositing and vibrating of concrete.

d) Anchor bolts shall be positioned and kept in place with the help of proper manufactured templates. The use of all such templates, fixture etc. shall be deemed to be included in the rates.

e) Slots, openings, holes, pockets etc. shall be provided in the concrete work in the positions indicated in the drawings or as directed by Engineer.

f) Prior to concrete placement all work shall be inspected and approved by Engineer and if found unsatisfactory, concrete shall not be poured until after all defects have been corrected at contractor's cost. Cat ladders shall be provided on the reinforcement to facilitate labour movement.

g) Approval by Engineer for all materials and work as required herein shall not relieve contractor from his obligation to produce finished concrete in accordance with the drawings and specifications.

h) No concrete shall be placed in wet weather or on water covered surface. Any concrete that has been washed by heavy rains, the work shall be entirely removed, if there is any sign of cement and sand having been washed from the concrete mixture. To guard against damage which may be caused by rains, the works shall be covered with tarpaulins immediately after the concrete has been placed and compacted. Any water accumulating on the surface of the newly placed concrete shall be removed by approved means and no further concrete shall be placed thereon until such water is removed. To avoid flow of water over/around freshly placed concrete, suitable drains and sumps shall be provided.

i) Immediately before concrete placement begins, proposed surfaces except framework, which will come in contract with the concrete to be placed, shall be covered with abounding mortar.

Transportation

a) All buckets, containers or conveyors used for transporting concrete shall be mortartight. Irrespective of the method of transportation adopted, concrete shall be delivered with the required consistency and plasticity without segregation or loss of slump. However, chutes shall not be used for transport of concrete without the written permission of Engineer and concrete shall not be rehandled before placing.

b) Concrete must be placed in its final position before it becomes too stiff to work. On no account, water shall be added after the initial mixing concrete which has become stiff or has been contaminated within foreign materials shall be rejected and disposed off as directed by Engineer.

c) All equipment used for mixing, transporting and placing of concrete shall be maintained in clean condition. All pans, buckets, hoppers, chutes, pipelines and other equipments shall be thoroughly cleaned after each period of placement.

Procedure for placing of concrete

a) Before any concrete is placed, the entire placing program, consisting of equipment, layout proposed procedures and methods shall be submitted to OWNER for approval if so demanded by OWNER and no concrete shall be placed until OWNER's approval has been received. Conveyor for conveying concrete shall be of such size and design as to ensure a practically continuous flow of concrete during depositing without segregation of materials, considering the size of the job and placement location.

b) Concrete shall be placed in its final position before the cement shall normally be compacted in its final position within thirty minutes of leaving the mixer and once compacted it shall not be disturbed.

c) Concrete, in all cases, be deposited as nearly as practicable directly in its final position, and shall not be re handled or caused to flow in a manner which will cause segregation, loss of materials, displacement of reinforcement, shuttering or embedded inserts or impair its strength. For locations where direct placement is not possible, and in narrow forms, contractor shall provide suitable drop and elephant trunks to confine the movement of concrete. Special care shall be taken when concrete is dropped from a height especially if reinforcement is in the way, particularly in columns and thin walls.

d) Except when otherwise approved by Engineer, concrete shall be placed in shovels or other approved implements and shall not be dropped from a height more than 1M or handled in a manner which will cause segregation.

e) The following specification shall apply when placing of concrete by use of mechanical equipment is specifically called for while inviting bids or is warranted considering the nature of work involved. The control of placing shall begin at the mixer discharger, concrete shall be discharged by a vertical drop into the middle of the bucket or hopper and this principle of a vertical discharge of concrete shall be adhered to thoroughly at all stages of delivery until the concrete comes to rest in its final position.

f) Central bottom dump buckets of a type that provides for positive regulation of the amount and rate of deposition of concrete in all dumping position shall be employed.
g) In placing concrete in large open areas, the bucket shall be spotted directly over the position designated and than lowered for dumping. The open bucket shall clear the concrete already in place and the height of drop shall not exceed 1M. The bucket shall be opened slowly to avoid high vertical bounce. Dumping of buckets on the swing or in any manner which results in separation of ingredients or disturbance of previously placed concrete will not be permitted.

h) Concrete placed in restricted forms by wheel barrows, buggies, cars, short chutes or hand shoveling shall be subject to the requirement for vertical delivery of limited height to avoid segregation and shall be deposited as nearly as practicable in its final position.

i) Where it is necessary to use transfer chutes, specific approval of Engineer must be obtained to the type, length, slopes, baffles, vertical terminals and timing of operations, the discharge and without segregation. To allow for the loss of mortar against the sides of the chutes, the first mix shall have less coarse aggregate. During cleaning of chutes the wastewater shall be kept clear of the forms. Concrete shall not be permitted to fall from the end of the chutes by more than 1M. Chutes when approved for use shall have slopes not flatter than 1:3 and steeper than 1:2 chutes shall be of metal or metal lines and of rounded cross section. The slopes of all chutes sections shall be approximately the same. The discharge end of the chutes shall be maintained above the surface of the concrete in the forms.

j) Concrete may be conveyed and placed by mechanically operated equipment e.g. pumps or pneumatic placers only with the written permission of Engineer. The slump shall be held to the minimum, necessary for conveying concrete by this method.

k) When pumping is adopted, before pumping of concrete is started, the pipeline shall be lubricated with one or two batches of mortar composed of one part cement and two parts sand. The concrete mix shall be specially designed to suit pumping. Care shall be taken to avoid stoppages in work once pumping has started.

l) When pneumatic placer is used, the manufacturer's advice on layout of pipeline shall be followed to avoid blockages and excessive wear. Restraint shall be provided at the discharge box to cater for the reaction at this end. Manufacturer's advice shall be followed regarding concrete quality and all other related matters when pumping or pneumatic placing equipment are used.

m) Concreting once started, shall be continuous until the pour is completed. Concrete shall be placed in successive horizontal layers of uniform thickness ranging from 15 to 90mm as directed by Engineer. These shall be placed as rapidly practicable to prevent the formation of cold joints or planes of weakness between each succeeding layer within the pour. The thickness of each layer shall be such that it can be deposited before the previous layer has stiffened. The bucket loads or other units of the layer with such overlap as well facilitate spreading the layer to uniform depth and texture with a minimum of shoveling. Any tendency to segregation shall be corrected by shoveling stones into mortar rather than mortar on to stones such a condition shall be corrected by redesign of mix or other means, as directed by Engineer.

n) The top surface of each pour and bedding planes shall be approximately horizontal unless otherwise instructed.

o) Compaction

i) Concrete shall be compacted during placing the approved vibrating equipment until the concrete has been consolidated to the maximum practicable density, is free of pockets of coarse aggregate and fits tightly against all form surfaces, reinforcement and embedded fixtures. Particular care shall be taken to ensure that all concrete placed

against the forms faces and into corners of forms or against hardened concrete at joints is free from voids or cavities. The use of vibrators shall be consistent with the concrete mix and caution exercised not to over-vibrate the concrete to the point that segregation results.

ii) Vibrators shall conform to IS specifications. Type of vibrator to be used shall depend on the structure where concrete is to be placed. Shutter vibrators to be effective, shall be firmly secured to the formwork which must be sufficiently rigid to transmit the vibration and strong enough not to be damaged by it. Immersion vibrators shall have no load frequency, amplitude and acceleration as per IS 2505 depending on the size of vibrator. Immersion vibrators in sufficient numbers and each of adequate size shall be used to properly consolidate all concrete. Tapping or external vibrating of forms by hand tools or immersion vibrators will not permitted.

iii) The exact manner of application and the most suitable machines for the purpose must be carefully considered and operated by experienced men. Immersion vibrators shall be inserted vertically at points not more than 450mm apart and withdrawn when air bubbles cease to come to the surface. Immersion vibrators shall be withdrawn very slowly. In no case shall immersion vibrators be used to transport concrete inside the forms. Particular attention shall be paid to vibration at the top of a lift e.g. in a column or wall.

iv) When placing concrete layers, which are advancing horizontally as the work progresses, great care shall be exercised to ensure adequate vibration, blending and mixing of the concrete between the succeeding layers.

v) The immersion vibrator shall penetrate the layer being placed and also penetrate the layer below with under layer is still plastic to ensure good bond and homogeneity between the two layers and prevent the formation of cold joints.

vi) Care shall be taken to prevent contact of immersion vibrators against reinforcement steel. Immersion vibrators shall not be allowed to come in contact with reinforcement steel after start of initial set. They shall also not be allowed to come in contact with forms or finished surfaces.

vii) Form attached vibrators shall be used only with specific authorization of Engineer.

viii) The surface vibrators will be not permitted under normal conditions. However, for thin slabs vibration by specially designed vibrators may be permitted upon approval of Engineer.

ix) The formation of stone pockets or mortar bondages in corner and against faces of forms shall not be permitted. Should these occur, they shall be dug out, reformed and refilled to sufficient depth and shape for through bonding as directed by Engineer.

p) Placement interval

Except when placing with slip forms each placement of concrete in multiple lift work, shall be allowed to set for at least 24 hours after the final set of concrete and before the start of a subsequent placement.

q) Special provision in placing

When placing concrete in walls with openings and in floors of integral slab and beam construction and other similar-conditions, the placing shall stop when the concrete reaches the top of the opening in walls and bottom horizontal surface of the slab, as the case may be placing shall be resumes before the concrete in place takes initial set, but not until it has time to settle as determined by Engineer.

r) Placing concrete through reinforcement steel

When placing concrete through reinforced steel, care shall be taken to prevent segregation of the coarse aggregate. When the congestion of steel makes placing difficult it may be necessary to temporarily move the top steel aside to get proper placement and restore reinforcing steel to design position.

s) Bleeding

Bleeding of free water, on top of concrete being deposited, in to the forms shall be caused to stop the concrete pour. The conditions causing this defect corrected before any further concreting is resumed.

Curing, protecting, repairing and finishing

a) Curing

i) All concrete shall be cured by keeping it continuously damp for the period of time required for complete hydration and hardening to take place. Preference shall be given to the use of continuous sprays or ponded water continuously saturated covering of sacks, canvas, hessian or other absorbent materials, or approved effective curing compounds applied with spraying equipment capable of producing a smooth, even textured coat. Extra precautions shall be exercised in curing concrete during cold and hot water as outlined hereinafter. The quality of curing water shall be the same as that used for mixing concrete.

ii) Certain types of finish or preparation for overlaying concrete must be done at stage of the curing process and special treatment may be required for specific concrete surface finish.

iii) Curing of concrete made of high alumina cement and supersulphated cement shall be carried out as directed by Engineer.

iv) Fresh concrete shall be kept continuously wet for a minimum period of 10 days from the date of placing of concrete following a lapse of 12 to 14 hours after laying of concrete. The curing of horizontal surfaces exposed to the drying winds shall however begin immediately the concrete has hardened. Water shall be applied uniformly to concrete surfaces within 1 hour after concrete has set. Water shall be applied to formed surfaces immediately upon removal of forms quantity of water applied shall be controlled so as to prevent erosion of freshly placed concrete.

v) Curing shall be assured by use of an ample water supply under pressure in pipes with all necessary appliance of hose, sprinklers and spraying devices. Continuous fine

mist spraying or sprinkling shall be used, unless otherwise specified or approved by Engineer.

vi) Whenever, by the judgement of Engineer, it may be necessary to omit the continuous spray method, a covering of clean sand or other approved means such as wet gunny bags which will prevent loss of moisture from the concrete, may be used. No type of covering will be approved which would stain or damage the concrete during or after the curing period. Covering shall be kept continuously wet during the curing period.

vii) For curing of concrete in pavements, side-walks, floors flat roofs or other level surfaces, the ponding method of curing is preferred. The method of containing the ponded water shall be approved by Engineer. Special attention shall be given to edges and corners of the slabs to ensure proper protection to these area. The ponded area shall be kept continuously filled with water during the curing period.

viii) Surface coating type compounds shall be used only by special permission of Engineer, curing compounds shall be liquid type white pigmented. Other curing compounds shall be used on surfaces where future blending with concrete, water or acid proof membrane or painting is specified.

ix) All equipment and materials required for curing shall be on hand and ready for use before concrete is placed.

b) Protecting fresh concrete

Fresh concrete shall be protected from defacements and damage due to construction operation by leaving forms in place for an ample period as specified later in this specification. Newly placed concrete shall be protected by approved means such as tarpaulins from rain, sun and winds. Steps as approved by Engineer shall also be taken to protect immature concrete from damage by debris, excessive loading, vibration, abrasion or contact with other materials etc. that may impair the strength and/or durability of the concrete. Workmen shall be warned against and prevented from disturbing green concrete during it setting period. If it is necessary that workmen enter the area of freshly placed concrete, Engineer may require that bridges be placed over the area.

c) Repair and replacement of unsatisfactory concrete

i) Immediately after the shuttering is removed, the surface of concrete shall be very carefully inspected and all defective areas called to the attention of Engineer who may permit patching of the defective areas or also reject the concrete unit either partially or entirely. Rejected concrete shall be removed and replaced by contractor at no additional expense to owner. Holes left by from bolts etc. shall be filled up and made good with mortar composed of one part of cement to one and half parts of sand passing 2.36mm IS sieve after removing any loose stones adhering to the concrete shall be finished as described under the particular items of work.

ii) Superficial honey combed surfaces and rough patches shall be similarly made good immediately after removal of shuttering in the presence of Engineer and superficial water and air holes shall be filled in. The mortar shall be well worked into the surface with a wooden float. Excess water shall be avoided. Unless instructed otherwise by Engineer the surface of the exposed concrete placed against shuttering shall be rubbed down immediately on removal of shuttering to remove fine or other

irregularities and necessary care being taken to avoid damage to the surface. Surface irregularities shall be removed by grinding.

iii) If reinforcement is exposed or the honeycombing occurs at vulnerable positions e.g. ends of beams or columns it may be necessary to cut out the member completely or in part and reconstruct. The decision of Engineer shall be final in this regard. If only patching is necessary, the defective concrete shall be cut out till solid concrete is reached (or to a minimum depth of 25mm) the edges being cut perpendicular to the affected surface or with small under cut if possible.

Anchors, tees or dovetail slots shall be provided whenever necessary to attach the new concrete securely in place an area extending several centimeters beyond the edges and the surfaces of the prepared voids shall be saturated with water for 24 hours immediately before the patching material is placed.

iv) The use of epoxy for bonding fresh concrete used for repairs will be permitted upon written approval of Engineer. Epoxy shall be applied in strict accordance with the instructions of the manufacturer.

v) Small size holes having surface dimensions about equal to the depth of the hole, holes left after removal of form bottom, grout insert holes and slots cut for repair of cracks shall be repaired as follows. The hole to be patched shall be roughened and thoroughly soaked with clean water until absorption stops.

A 5 mm thick layer of grout of equal parts of cement and sand shall be well brushed into the surface to be patched, followed immediately by the patching concrete which shall be well consolidated with a wooden float. The concrete patch shall be built up in 10mm thick layers. After an hour or more, depending upon weather conditions, it shall be worked off flush with a wooden float and smooth finish obtained by wiping with hessian, a steel trowel shall be used for this purpose. The mix for patching shall be same material and in the same proportions as that used in the concrete being repaired, although some reduction in the maximum size of the coarse aggregates may be necessary and the mix shall be kept as dry as possible.

Mortar filling by air pressure (gunetting) shall be used for repairing of areas too large and/or too shallow for patching with mortar. Patched surfaces shall be given a final treatment to match the colour and texture of the surrounding concrete. While cement shall be substituted for ordinary cement, if so directed by Engineer, to match the shade of the patch with original concrete.

vi) The patched area shall be covered immediately with an approved non-staining water saturated material such as gunny bag which shall be kept continuously wet and protected against sun and wind for a period of 24 hours. Thereafter the patched area shall be kept wet continuously by fine spray of sprinkling for not less than 10 days.

vii) All materials, procedures and operations used in the repairing of concrete and also the finished repair work shall be subject to the approval of Engineer. All fillings shall be tightly bonded to the concrete and shall be sound, free from shrinkage cracks after the fillings have been cured and finished.

d) i) Finishing

The type of finish for formed concrete surface shall be follows, unless, otherwise specified by the Engineer.

For surfaces against which backfill or concrete is to be placed, no treatment is required except repairing of defective areas.

For surface below grade which will receive water proofing treatment the concrete shall be free of surface irregularities which would interfere with proper application of the waterproofing material which is specified for use.

Unless specified, surfaces which will be exposed when the structure is in service shall receive no special finish, except repairing of damage or defective concrete removal of fins and abrupt irregularities, fillings of holes left by form ties and rods and clean up of loose or adhering debris.

ii) Surfaces which will be exposed to the weather and which would normally be level, shall be sloped for drainage. Unless the drawing specifies such as stair treads, walls shall be sloped across the width approximately 1 in 30 broader surface such as walkways, roads, parking areas and platforms shall be sloped about 1 in 50. Surfaces that will be covered by backfill or concrete sub floors to be covered either concrete toping, terrazzo or quarry tile and similar surfaces shall be smooth screeded and levelled to produce even surfaces. Surface irregularities shall not exceed 6mm. Surfaces which will not be covered by backfill, concrete or tile toppings such as outside decks, floors of galleries and sumps, parapets, gutters, sidewalks floors and slabs shall be consolidated, screeded and floated. Excess water and laitance shall be removed before finishing. Floating may be done with hand or power tools and started as the screeded surface has attained a stiffness to permit finishing operation and these shall be the minimum required to produce a surface uniform in texture free from screed marks or other imperfections. Joints edges, panels and forms linings shall be of uniform size and be as large as practicable and installed with closed joints. Upon removal of forms the joint marks shall be smoothed of and all blemishes, projections etc. removed leaving the surfaces reasonably smooth and unmarred.

iii) Integral cement concrete finish

When specified on the drawings and integral cement concrete finish of specified thickness for floors and slabs shall be applied either monolithic or bonded as specified on the drawing as per IS 2571.

The surface shall be compacted and than floated with a wood float or power floating machine. The surface shall be tested with a straight edge and any high and low spots eliminated. Floating or troweling of finish shall be permitted only after all surfaces water has evaporated. Dry cement or a mixture of dry cement and sand shall not be sprinkled directly on the surface of the cement finish to absorb moisture or to stiffen the mix.

iv) Exposed concrete finish/rendering

A rubbed finish shall be provided only on exposed concrete surfaces as specified on the drawings. Upon removal of forms all fins and other projections on the surfaces shall be carefully removed, off-sets levelled and voids and damaged sections be immediately saturated with water and repaired by filling with a concrete or mortar of the same composition as was used in the surface.

Then surface shall be thoroughly wetted and rubbed with carbofuran or other abrasive. Cement mortar may be used in the rubbing, but the finished surface shall be brush coated with either cement grout after rubbing. The finished surfaces shall present a uniform and smooth appearance.

Mode of Measurement

The unit rate for concrete work under various categories shall be all inclusive and no claims for extra payment on account of such items of leaving holes, embedding inserts, etc. shall be entertained unless separately provided for in the Schedule of Quantities. No extra claim shall also be entertained due to change in the number, position and/or dimensions of holes, slots or openings, sleeves, inserts or on account of any increased lift, lead of scaffolding etc. All these factors should be taken into consideration while quoting the rates. Unless provided for in the schedule of Quantities the rates shall also include fixing inserts in all concrete work, whenever required.

2.02 Providing and laying Plain Cement Concrete 1:3:6 (1 cement: 3 Coarse Sand: 6 graded stone aggregate of nominal size 37mm and down)

The coarse aggregate, cement and coarse sand shall be of quality as specified in the materials section. The other procedures are same as that specified in item No.2.01.

2.03 Providing and laying RCC of M 25 mix for structures upto plinth level.

The general specification is same as per item No.2.01 but for the mix of concrete is M25

2.04 Providing and laying M 25 concrete in superstructure

The general specification is same as per item No.2.01.

2.05 Providing and laying RCC for equipment/machine foundation

The general specification is same as item No.2.01 but for the mix of the concrete, which shall be as specified in the item. The rate is exclusive of reinforcement steel but inclusive of centering and shuttering, providing number of holes, pockets (size and as shown in the drawings/directed) and grouting the same after the machine/equipment is erected with concrete of specified mix and finishing the same as specified.

2.06 Precast Concrete

Precast concrete shall comply with IS 456 and with the following requirements:

a) All precast units shall be cast on suitable bed or platform with firm foundation and free from wind. Contractor shall be responsible for the accuracy of the level or shape of the bed or platform. A suitable serial number and the date of casting shall be impressed or painted on each unit.

b) Side shutters shall not be struck ;in less than 24 hours after depositing concrete and no precast unit shall be lifted until the concrete reaches a strength of at least twice the stress to which the concrete may be subjected to at the time of lifting.

c) The lifting and removal of precast units shall be under-taken without causing shock, vibration or undue bending stresses to or in the units. Before lifting and removal takes place contractor shall satisfy Engineer or his representative that the methods he proposes to adopt for these operations shall not over stress or otherwise affect seriously the strength of the precast units. The reinforced side of the units shall be distinctly marked.

d) All precast work shall be protected from the direct rays of the sun for at least 7 days after casting and during that period each unit shall be kept constantly watered or preferably be completely immersed in water.

e) Slots, openings or holes, pockets etc. shall be provided in the concrete work in the drawings or as directed by the Engineer. Any deviation from the approved drawings shall be made good by contractor at his own expense, without damaging any other work sleeves, bolts, inserts, etc. shall also be provided in concrete work where so specified.

2.07 Providing and erecting Formwork for structures upto plinth level

FINISHES

GENERAL

The formwork for concrete works shall be such as to give the finish as specified. The CONTRACTOR shall make good as directed any unavoidable defects consistent with the type of concrete and finish specified; defects due to bad workmanship (e.g. damaged or misaligned forms, defective or poorly compacted concrete) will not be accepted.

CONTRACTOR shall construct the formwork using the correct materials and to meet the requirements of the design and to produce finished concrete to required dimensions, plumbs, planes and finishes.

Surface Finish Type F1

This type of finish shall be for non-exposed concrete surfaces against which back fill or concrete is to be placed. The main requirement is that of dense, well compacted

concrete. No treatment is required except repair of defective areas, filling all form tie holes and cleaning up of loose or adhering debris. For surfaces below grade which will receive waterproofing treatment the concrete shall be free of surface irregularities which would interfere with proper and effective application of waterproofing material specified for use.

Surface Finish Type F2

This type of finish shall be for all concrete work which will be exposed to view upon completion of the job. The appearance shall be that of a smooth dense, well-compacted concrete showing the slight marks of well fitted shuttering joints. The CONTRACTOR shall make good any blemishes. Unless otherwise specified all surface finish shall be of Type F2.

Surface Finish Type F3

This type of finish shall be for concrete work which will be exposed to view but to give an appearance of smooth, dense, well-compacted concrete with no shutter marks, stain free and with no discoloration, blemishes, arises, airholes, etc. Only lined or coated plywood with very tight joints shall be used to achieve this finish. The panel size shall be uniform and as large as practicable. Any minor blemishes that might occur shall be made good by CONTRACTOR.

Unless otherwise specified all formwork surface finish shall be of type “F2”. Formwork shall be all inclusive and shall consist of but not limited to shores, bracings, sides of footings, walls, beams and columns, bottom of slabs, etc. including ties, anchors, hangers, inserts, falsework, wedges, etc.

The design and engineering of the formwork as well as its construction shall be the responsibility of CONTRACTOR. However, if so desired by ENGINEER the drawings and calculations for the design of the formwork shall be submitted to ENGINEER approval.

Formwork shall be designed to fulfill the following requirements:

a) Sufficiently rigid and tight to prevent loss of grout or mortar from the concrete at all stages and appropriate to the methods of placing and compacting.
b) Made of suitable materials.
c) Capable of providing concrete of the correct shape and surface finish within the specified tolerance limits.
d) Capable of withstanding without deflection the worst combination of self weight, reinforcement and concrete weight, all loads and dynamic effects arising from construction and compacting activities, wind and weather forces.
e) Capable of easily striking without shock, disturbance or damage to the concrete.
f) Soffit forms capable of imparting a camber if required.
g) Soffit forms and supports capable of being left in position if required.
h) Capable of being cleaned and/or coated if necessary immediately prior to casting the concrete; design temporary openings where necessary for these purposes and to facilitate the preparation of construction joints.

The formwork may be of timber, plywood, steel, plastic or concrete depending upon the type of finish specified. Sliding forms and slip form may be used with the approval of ENGINEER. Timber for formwork shall be well seasoned, free from sap, shakes, loose knots, worm holes, warps and other surface defects. Joints between formwork and formwork and between formwork and structures shall be sufficiently tight to prevent loss of slurry from concrete, using seals if necessary.

The faces of formwork coming in contact with concrete shall be cleaned and two coats of approved mould oil applied before fixing reinforcement. All rubbish, particularly chippings, shavings, sawdust, wire pieces, dust etc. shall be removed from the interior of the forms before the concrete is placed. Where directed, cleaning of forms shall be done by blasting with a jet of compressed air at no extra cost.

Forms intended for reuse shall be treated with care. Forms that have deteriorated shall not be used. Before reuse, all forms shall be thoroughly scraped, cleaned, nails removed, holes suitably plugged, joints repaired and warped lumber replaced to the satisfaction of ENGINEER. CONTRACTOR shall equip himself with enough shuttering to allow for wastage so as to complete the job in time.

Permanent formwork shall be checked for its durability and compatibility with adjoining concrete before it is used in the structure. It shall be properly anchored to the concrete.

Wire ties passing through beams, columns and walls shall not be allowed. In their place bolts passing through sleeves shall be used. Formwork spacers left in situ shall not impair the desired appearance or durability of the structure by causing spalling, rust staining or allowing the passage of moisture.

For liquid retaining structures sleeves shall not be provided for through bolts nor shall through bolts be removed if provided. The bolts, in the latter case, shall be cut at 25 mm depth from the surface and the hole made good by cement mortar of the same proportion as the concrete just after striking the formwork.

Where specified or shown on drawings all corners and angles exposed in the finished structure shall have chamfers or fillets of 20 mm x 20 mm size.

Forms for substructure may be omitted when, in the opinion of ENGINEER, the open excavation is firm enough (in hard non-porous soils) to act as a form. Such excavations shall be slightly larger, as directed by ENGINEER, than that required as per drawing to compensate for irregularities in excavation.

CONTRACTOR shall provide adequate props of adjustable steel pipes carried down to a firm bearing without overloading any of the structures.

The shuttering for beams and slabs shall be so erected that the side shuttering of beams can be removed without disturbing the bottom shuttering. If the shuttering for a column is erected for the full height of the column, one side shall be built up in sections as placing of concrete proceeds or windows left for placing concrete from the side to limit the drop of concrete to 1.0 m or as directed by ENGINEER. CONTRACTOR shall temporarily and securely fix items to be cast

(embedment/inserts) in a manner that will not hinder the striking of forms or permit loss of grout.

Formwork showing excessive distortion, during any stage of construction, shall be removed. Placed concrete affected by faulty formwork, shall be entirely removed and formwork corrected prior to placement of new concrete at CONTRACTOR’s cost.

The striking time for formwork shall be determined based on the following requirements :

a) Development of adequate concrete strength;
b) Permissible deflection at time of striking form work;
c) Curing procedure employed - its efficiency and effectiveness;
d) Subsequent surface treatment to be done;
e) Prevention of thermal cracking at re-entrant angles;
f) Ambient temperatures; and
g) Aggressiveness of the environment (unless immediate adequate steps are taken to prevent damage to the concrete).

Under normal circumstances (generally where temperatures are above 20 Deg. C) forms may be struck after expiry of the time period given in IS:456 unless directed otherwise by ENGINEER. For Portland Pozzolana/slag cement the stripping time shall be suitably modified as directed by the ENGINEER. It is the CONTRACTOR’s responsibility to ensure that forms are not struck until the concrete has developed sufficient strength to support itself, does not undergo excessive deformation and resist surface damage and any stresses arising during the construction period.

a) The formwork shall consist of shores, bracings, sides of beams and columns, bottom of slabs etc. including ties anchors, hangers inserts etc. complete which shall be properly designed and planned for the work. False work shall be so constructed that necessary adjustment can be made to compensate for take up and settlements. Wedge may be used at the top or bottom of timber shores but not at both ends to facilitate vertical adjustment or dismantling of the formwork.

b) Design of formwork

The design of formwork as well as its construction shall be the responsibility of contractor. If so instructed, the drawings and/or calculation for the design for the form work shall be submitted to Engineer for approval before proceeding with work, at no extra cost.

Engineer's approval shall not however relieve contractor of the full responsibility for the design and construction of the formwork. The design shall take into account the entire load vertical and lateral that the forms will be carrying live and vibration loadings.

c) Type of formwork

Formwork may be of timber, plywood, metal or plastic or concrete. For special finishes the formwork may be lined with plywood, steel sheets, oil tempered hard board etc.

Sliding forms and slip forms may be used with the approval of Engineer.

d) Formwork requirements

i) Forms shall conform to the shapes, lines, grades and dimensions including camber of the concrete as called for on the drawings. Ample struts, braces, ties, straps, etc. shall be used to hold the forms in proper position without any distortion what so ever until the concrete is set sufficiently to permit removal of forms. Forms shall be strong enough to permit the use of immersion vibrators. In special cases form vibrator may also be used. The shuttering shall be close boarded. Timber shall be well seasoned, free from sap, shakes, loose knots, wormholes, warps or other surface defects in contact with concrete. Faces coming in contact with the concrete shall be free from adhering grout, plaster, paint, projecting nails, splits or other defects. Joints shall be sufficiently tight to prevent loss of water or any fine material from concrete.

ii) Plywood shall be used for exposed concrete surfaces where called for. Sawn and wrought timber may be used for unexposed surfaces. Inside faces of forms for concrete surfaces which are to be rubbed finished shall be planed to remove irregularities or unevenness in the face. Formwork with linings shall be permitted.

iii) All new and used form timber shall be maintained in a good condition with respect to shape, strength, rigidity, water tightness, smoothness and cleanliness of surfaces. Form timber unsatisfactory in any respect shall not used and if rejected by Engineer shall be removed from the site.

iv) Shores supporting successive members shall be placed directly over those below or be so designed and placed that the load will be transmitted directly to them. Trussed supports shall be provided for shores that cannot be secured on adequate foundations.

v) Formwork, during any stage of construction showing signs of distortion or distorted to such a degree that the intended concrete work will not conform to the exact contours indicated on the drawings, shall be repositioned and strengthened. Poured concrete affected by the faulty formwork, shall be removed completely and the formwork be corrected prior to placing of new concrete.

vi) Excessive construction camber to compensate for shrinkage, settlement may impair the structural strength of members and shall not be permitted.

v) Forms shall be so designed that their removal will not damage the concrete. Face formwork shall provide true vertical and horizontal joints, conform to the Engineering features of the structure as to location of joints and be as directed by Engineer.

viii) Where exposed smooth or rendered concrete finishes are required the forms shall be constructed with special care so that the resulting concrete surfaces require a minimum finish.

e) Formwork for slope surfaces

i) Forms for sloped surfaces shall be built so that the formwork can be placed board-by-board immediately ahead of concrete placement so as to enable ready access for placement, vibration inspection and repair of the concrete.

ii) The formwork shall also be built so that the boards can be removed one by one from the bottom up as soon as the concrete has attained sufficient stiffness to prevent sagging. Surfaces of construction joints and finished surfaces with slopes steeper than 4 horizontal: 1 vertical shall be formed as required herein.

f) Formwork for curved surfaces

i) The contractor shall interpolate intermediate sections as necessary and shall construct the forms so that the curvature will be continuous between sections. Where necessary to meet requirements for curvature, the form timber shall be built up of laminated splices cut to make tight, smooth form surfaces.

ii) After the forms have been constructed, all surface imperfections shall be corrected and all surface irregularities at matching faces of form material shall be dressed to the specified curvature.

g) Formwork for exposed concrete surfaces

i) Where it is desired, directed or shown on the drawings to have original fair face finish of concrete surface without any rendering or plastering, formwork shall be carried out by using wood planks, plywood or steel plates of approved quality and as per direction of the Engineer.

ii) The contractor shall use one type of material for all such exposed concrete faces and the forms shall be constructed so as to produce uniform and consistent texture and pattern on the face of the concrete. Patches or forms for these surfaces will not be permitted. The formwork shall be placed so that all horizontal formworks are continuous across the entire surface.

iii) To achieve a finish which shall be free of board marks, the formwork shall be faced with plywood or equivalent material in large sheets. The sheets shall be arranged in an approved pattern. Wherever possible, joints between sheets shall be arranged to coincide with Engineering features, sills, window heads or change in direction of the surface. All joints between shuttering plates or panels shall be vertical or horizontal unless otherwise directed. Suitable joints shall be provided between sheets. The joints shall be arranged and fitted so that no blemish or mark is imparted to the finished surfaces.

iv) To achieve a finish which shall give the rough appearance of concrete cast against sawn boards, formwork boards unless otherwise stated shall be of 150mm wide, securely jointed with tongue and grooved joints if required to prevent grout loss with tie rod positions and direction of boards carefully controlled. Sawn boards shall be set horizontally, vertically or at an inclination shown in the drawings.

All bolt holes shall be accurately aligned horizontally and vertically and shall be filled with matching mortar recessed 5mm back from the surrounding concrete face.

v) Forms for exposed concrete surfaces shall be constructed with grade strips (the underside of which indicated top of pour) at horizontal construction joints, unless the use of groove strips is specified on the drawings. Such forms shall be removed and reset from lift to lift, they shall not be continuous from lift to lift. Sheeting of reset forms will not be spread and permit abrupting irregularities or loss of mortar. Supplementary form ties shall be used as necessary to hold the reset forms tight against the concrete.

vi) For fair faced concrete, the position of through bolts will be restricted and generally indicated on the drawings.

vii) Chamfer strips shall be placed in the corners of forms for exposed exterior corners so as to produce 20mm bevelled edges except where otherwise shown in the drawings. Interior corners and edges at formed joints shall not be bevelled unless shown on the drawings. Mouldings for grooves, drip courses and bands shall be made in the form itself.

viii) The wood planks, plywood and steel plates used in formwork for obtaining exposed surfaces shall not be used for more than 3 times in case of wood planks, 6 times for plywood and 10 times for steel plates respectively. However, no forms will be allowed for reuse, if in the opinion of the Engineer it is doubtful to produce desired texture of exposed concrete.

ix) In order to obtain exposed concrete work of uniform colour it shall be necessary to ensure that the sand used for all exposed concrete work shall be approved uniform colour. Moreover the cement used in the concrete for any complete element shall be from single consignment.

x) No exposed concrete surface shall be rendered or painted with cement or otherwise. Plastering of defective concrete as a means of achieving the required finish shall not be permitted, except in the case of minor porosity on surface, the Engineer may allow a surface treatment by rubbing down with cement and sand mortar of the same richness and colour as for the concrete. This treatment shall be made immediately after removing the formwork.

xi) The contractor shall also take all precautionary measures to prevent breaking and chipping of corners and edges of completed work until the building is handed over.

h) Bracings struts and props

i) Shuttering shall be braced, strutted, propped and so supported that it shall not deform under weight and pressure of the concrete and also due to the movement of men and other materials. Bamboos shall not be used as props or cross bearers.

ii) The shuttering for beams and slabs shall be so erected that the shuttering on the sides of the beams and under the soffit of slabs can be removed without disturbing the beam bottoms. Repropping of beams shall not be done except where

props have to be reinstated to take care of construction loads anticipated to be in excess of shall be left open and built up in sections as placing of concrete from the sides to limit the drop of concrete to 3M or as directed by Engineer.

j) Mould Oil

Care shall be taken to see that the faces of form work coming in contact with concrete are perfectly cleaned and two coats of mould oil or any other approved material applied before fixing reinforcement and placing concrete. Such coating shall be insoluble in water, non-staining and not injurious to the concrete. It shall not become flaky or be removed by rain or wash water. Reinforcement and/or other items to be cast in the concrete shall not be placed until coating of the forms is complete, adjoining concrete surface shall also be protected against contamination from the coating material.

k) Chamfers and fillets

All corners and angles exposed in the finished structure shall be formed with moulding to form chamfers or fillets on the finished concrete. The standard dimension of chambers fillets unless otherwise specified shall be 20mm x 20mm. Care shall be exercised to ensure accurate mouldings. The diagonal face of the mouldings shall be planned or surfaced to the same texture as the forms to which it is attached.

l) Wire Ties

Wire ties passing through the walls shall not be allowed. In their place belts through sleeves be used.

m) Reuse of Forms

Before reuse, all forms shall be thoroughly scraped, cleaned, nails removed, holes that may leak suitably plugged and joints examined and when necessary, repaired and the inside retreated to prevent adhesion, to the satisfaction of Engineer. Warped timber shall be resized. Contractor shall equip himself with enough shuttering material to complete the job in the stipulated time.

n) Removal of Forms

i) Contractor shall record on the drawings and in a special register the date upon which the concrete is placed in each part of the work and the date of which the shuttering is removed there from. The contractor shall remove the shuttering after obtaining the approval of the Engineer.

ii) In no circumstances shall forms be struck until the concrete reaches a strength of at least twice the stress due to self weight and any construction/erection loading to which the concrete may be subjected at the time of striking formwork.

iii) In normal circumstances (generally where temperatures are above 20 Deg. Cent.) forms may be removed after expiry of the following periods:-

		Ordinary portland cement concrete	Rapid hardening portland cement concrete
a)	walls, columns & vertical sides of beams	24 to 48 hours directed by the Engineer	24 hours.
b)	Slabs left under	3 days	2 days
c)	Beam soffits props left under	7 days	4 days
d)	**Removal of props to slabs:**		
	i) Spanning upto 4.5 m	7 days	4 days
	ii) Spanning over 4.5 m	14 days	8 days
e)	**Removal of props to beams & arches**		
	i) Spanning upto 6 m	14 days	8 days
	ii)Spanning over6 m	21 days	12 days

iv) Striking shall be done slowly with utmost care to avoid damage to arises and projections and without shock or vibration, by gently easing the wedges. If after removing the formwork, it is found that timber has been embedded in the concrete, it shall be removed and made good as specified earlier.

v) Reinforced temporary openings shall be provided as directed by Engineer to facilitate removal of formwork which otherwise may be inaccessible.

vi) Tie rods, clamps, form bolts, etc. which must be entirely removed from walls or similar structures shall be loosened not sooner than 24 hours nor later than 40 hours after the concrete has been deposited. Ties, except those required to hold forms in place, may be removed at the same time.

Ties, withdrawn from walls and grade beams shall be pulled towards the inside face cutting ties back from the faces of walls and grade beams will not be permitted.

vii) For liquid retaining structures no sleeves for through bolts shall be used nor shall through bolts be removed as indicated above. The bolts, in this case, shall be cut at 25mm depth from the surface and then the hole shall be made good by sand, cement mortar of the same proportions as the concrete just after striking the formwork.

Mode of Measurement

It shall not be measured separately. Rates for concrete/RCC works should include the cost of shuttering as detailed in each item description. The rates shall also include providing and erecting formwork in position as per drawings, applying oil, removal of form after the specified period etc.

2.08 Providing and erecting formwork for structures in super- structure .

The general specification is same as per item No.2.07.

2.09 Providing and erecting false staging for formwork

The additional height for which it is required shall be erected wherever necessary. This shall be not measured and paid for separately.

2.10 Providing & erecting shuttering for exposed RCC work

The specification for the nature of shuttering shall be as specified in the item 2.07 under the sub-head shuttering for exposed concrete works. Payment will not be made separately for shuttering.

2.11 Supplying and mixing waterproofing compound

The waterproofing compound may be Forsroc, Sika, Cico or of any equivalent make. It shall be added to cement concrete or cement mortar as instructed by the Engineer. The proportion of the compound to be added shall be as per the manufacturer’s specifications.

Mode of measurement

No separate payment will be made. The rate of RCC Including waterproofing compound.

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2.12 Providing, fabricating and placing in position reinforcement steel

The quality of the steel shall be as mentioned in the materials section. The bars shall be fabricated as per the drawings. Laps and splices for reinforcement shall be as shown on the drawings. Splices in adjacent bars shall be approved by Engineer. The bars shall not be lapped unless the length required exceeds the maximum available lengths of bars at site.

Bending

a) Reinforcing bars supplied bent or in coils, shall be straightened before they are cut to size. Straightening of bars shall be done in cold and without damaging the bars. This is considered as a part of reinforcement bending fabricating work.

b) All bars shall be accurately bent according to the sizes and shapes shown on the detailed working drawings/bar bending schedules. They shall be bent gradually by machine or other approved means. Reinforcing bars shall not be straightened and rebent in a manner that will injure the material, bars containing cracks or splits shall be rejected. They shall be bent cold, except bars of over 32mm in diameter which may be bent hot if specifically approved by the Engineer. Bars bent hot shall not be heated beyond cherry red colour (not exceeding 845 deg. c) and after bending shall be allowed to cool slowly without quenching. Bars incorrectly bent shall be used only if the means used for straightening and rebending shall not injure the material. No reinforcement shall be bent when in position in the work without approval whether or not it is partially embedded in hardened concrete. Bars having kinks or bends other than those required by design shall not be used.

Fixing

Reinforcement shall be accurately fixed by any approved means and maintained in the correct position shown in the drawings by the use of block, spacers and chairs as per IS 2502 to prevent displacement during placing and compaction of concrete. Bars intended to be in contact at crossing points shall be strongly bound together at all such points with two No.16 gauge an-healed soft iron wire. The vertical distance required between successive layers of bar in beams or other members shall be maintained by providing of mild steel spacer bars at such intervals that the main bars do not perceptibly sag between adjacent spacer bars.

Workmanship

Reinforcing bars supplied bent or in coils shall be straightened cold without damage at no extra cost. No bending shall be done when ambient temperature is below 5 Deg.C. Local warming may be permitted if steel is kept below 100 Deg.C.
All bars shall be accurately bent gradually and according to the sizes and shapes shown on the drawings/ schedules or as directed by ENGINEER.

Re-bending or straightening incorrectly bent bars shall not be done without approval of ENGINEER.

Reinforcement shall be accurately fixed and maintained firmly in the correct position by the use of blocks, spacers, chairs, binding wire, etc. to prevent displacement during placing and compaction of concrete. The tied in place reinforcement shall be approved by ENGINEER prior to concrete placement. Spacers shall be of such materials and designs as will be durable, not lead to corrosion of the reinforcement and not cause spalling of the concrete cover.

Binding wire shall be 16 gauge soft annealed wire. Ends of the binding wire shall be bent away from the concrete surface and in no case encroach into the concrete cover.

Substitution of reinforcement, laps/splices not shown on drawing shall be subject to OWNER/ENGINEER’s approval.

Cover

a) Unless indicated otherwise on the drawings, clear concrete cover for reinforcement (exclusive of plaster or other decorative finish) shall be as follows:

i) At each end of reinforcing bar, not less than 25mm nor less than twice the diameter of the bar whichever is less.

ii) For a longitudinal reinforcing bar in a column, not less than 40mm, nor less than the diameter of the bar. In case of columns of minimum dimensions of 20 cm or under, with reinforcing bars of 12mm and less in diameter, a cover of 25mm may be used.

iii) For longitudinal reinforcing bars in a beam 25mm nor less than the diameter of the bar.

iv) For tensile, compressive, shear, or other reinforcement in a slab or wall not less than 12mm nor less than the diameter of such reinforcement.

v) For any other reinforcement not less than 12mm nor less than the diameter of such reinforcement.

vi) For footings and other principal structural members in which the concrete is deposited directly against the ground, cover to the bottom reinforcement shall be 75mm. If concrete is poured on a layer of lean concrete the bottom cover may be reduced to 50 mm.

vii) For concrete surfaces exposed to the weather or the ground after removal of forms, such as retaining walls, footing sides and top etc. not less than 50mm for bars larger than 16mm dia and not less than 40mm for bars 16mm dia or smaller.

viii) Increased cover thickness shall be provided, as indicated on the drawings, for surfaces exposed to the action of harmful chemicals (or exposed to earth contaminated by such chemical, acid, alkali, saline atmosphere, sulphurous smoke etc.,

ix) For reinforced concrete members totally or periodically immersed in sea water or subject spray, the cover of concrete shall be 50mm more than those specified in (i) to (v) above.

x) For liquid retaining structures the minimum cover to all steel shall be 40mm or the diameter of the main bars, whichever is greater. In the presence of sea water and soils and waters of a corrosive character the cover shall be increased by 10mm.

xi) Protection to reinforcement in case of concrete exposed to harmful surroundings may also be given by providing a dense impermeable concrete with approved protective coatings, as specified by the Engineer.

xii) The correct cover shall be maintained by cement mortar cover blocks. Reinforcement for footings, beams and slabs on sub-grade shall be supported on precast concrete blocks as approved by engineer. The use of pebbles or stones shall not be permitted.

Inspection

Erected and secured reinforcement shall be inspected, jointly measured and recorded and approved by Engineer prior to placement of concrete.

Mode of Measurement

Lengths of reinforcement steel shall be measured to the nearest centimeter. The actual quantity of steel embedded in concrete including laps as shown in drawing or un-avoidable laps as approved by OWNER shall be measured and paid for, irrespective of the level or the height at which the work is done. The unit rate for reinforcement shall include all wastages, binding wire, Spacers and chairs etc. for which no separate payment shall be made.

2.13 Providing and placing in position bitumen impregnated fibers

The bitumen impregnated fiber boards shall be placed in locations before concreting as instructed by the Engineer.

The work shall be done at all levels without any extra cost. The thickness of the board shall be as specified in the item specification.

Mode of measurement

It shall be measured in M.SQ. The rate quoted shall be valid for all levels.

2.14 Providing and laying bituminous mastic

This shall be of approved make and quality. This shall be filled in the expansion joints as directed by the Engineer/shown in the drawings. The joints shall be of uniform width and care shall be taken for proper bonding of the joints.

Mode of measurement

This shall be measured in R.M for specified width and depth as per the item in the Schedule of Quantities.

I) Upon completion of concrete work, all forms, equipment, construction tools protective coverings and any debris resulting from the work shall be removed from the premises.

ii) All debris, i.e. empty containers, wooden pieces etc. shall be removed.

iii) The finished concrete surfaces shall be left in a clean condition satisfactory to Engineer.

Format of Concrete Pour card

CONCRETE POUR CARD

CLIENT : DATE : POUR NO. :
PROJECT : STRUCTURE :
CONTRACTOR : MAX AGGREGATE SIZE SLUMP : MM/ MM
DRG. NO. : START/COMPLETION TIME :
CONCETE GRADE/QUANTITY : M / M^3 MIXING TIME :

SR. NO.	ITEM		CONTRACTOR'S REP. SIGNATURE	ENGINEER'S SIGNATURE	REMARKS
1.	BEFORE CONCRETING	CENTERLINES CHECKED			
2.		FORMWORK AND STAGING CHECKED			
3.		REINFORCEMENT CHECKED			
4.		COVER0000000 TO REINFORCEMENT CHECKED			
5.		VERFIED TEST CERTIFICATE FOR CEMENT /STELL	YES/NO	YES/NO	
6.		ADEQUENCY OF MATERIALS/EQUIPMENT FOR POUR	YES/NO	YES/NO	
7.		EMBEDED PARTS CHECKED (LOCATION & PLUMB) — CIVIL			
		MECHANICAL			
		ELECTRICAL			
					POUR AUTHORISED SITE ENGINEER
8.	SOFFIT(S) AND POUR TOP(T) LEVELS CHECKED BEFORE(B) AND AFTER(A) FROM REMOVAL (ONLY OF BEAMS OF OVER 10 M SPAN & IMPORTANT STRUCTURES LIKE T.G. ETC.)		S(B) T(B) S(A) T(A)		
9.	CONSTRUCTION JOINT LOCATION & TIME (IF NOT AS PER DRAWING)				
10.	CEMENT CONSUMPTION IN KGS.				
11.	NUMBER OF CUBES AND IDENTIFICATION MARK				
12.	TEST CUBE RESULTS (7 DAYS/ 28 DAYS)		/ / /		
13.	CONCRETE CONDITION ON FORM REMOVAL		V.GOOD/GOOD/FAIR/POOR		
					SITE-IN-CHARGE

NOTES:

1. EACH ITEM TO BE CHECKED & SIGNED BY THE RESPECTIVE ENGINEERS.
2. ITEMS 8 TO 13 (BOTH INCLUSIVE) TO BE FILLED BY ONLY TCE ENGINEER.
3. EACH POUR TO HAVE SEPARATE CARDS, IN TRIPILCATE ONE EACH FOR CLIENT, TCE & SITE OFFICE. FORM 279
4. UNDER REMARKS INDICATE DEVIATIONS FROM DWGS & SPECIFICATIONS, CONGESTION IN REINFORCEMENT IF ANY, UNUSUAL OCCURENCES, SUCH AS FAILURE OF EQUIPMENT'S, SINKING OF SUPPORTS/PROPS, HEAVY RAINS AFFECTING CONCRETEING, POOR COMPACTION, IMPROPER CURING, OTHER DEFICIENCIES, OBSERVATION ETC.

SECTION - 3.00 - MASONRY WORKS

BRICKWORK

The following codes, standards and specifications are made a part of this specification. All standards, tentative specifications, codes of practices referred to herein shall be the latest edition including all applicable official amendments and revisions.

IS:1077	-	Common burnt clay building bricks.
IS:3102	-	Classification of burnt clay bricks.
IS:2180	-	Burnt clay building bricks, heavy duty.
IS:3495	-	Method of sampling and testing clay building bricks.
IS:2691	-	Burnt clay facing bricks.
IS:2221	-	Code of practice for brick work.
IS:2185	-	Load bearing hollow concrete blocks.
IS:5498	-	Lime-cement-cinder hollow concrete blocks.
IS:3115	-	Lime-cement cinder solid blocks.
IS:1597	-	Code of practice for construction of stone masonry (Part I).

MATERIALS

Bricks used in the works shall conform to the requirements laid down in IS:1077. The class of the bricks shall be as specifically indicated in the respective items of work.

The nominal size of the modular brick shall be 200mm x 100mm x 100mm with the permissible tolerances over the actual size of 190mm x 90mm x 90mm as per IS: 1077. The nominal thickness of one brick and half brick walls using modular bricks shall be considered as 200 mm and 100 mm respectively. In the event of use of traditional bricks of nominal size 230mm x ll5mm x 75mm with tolerance upto +3 mm in each dimension, one brick and half brick walls shall be considered as 230 mm and 115 mm respectively.

Bricks shall be sound, hard, homogenous in texture, well burnt in kiln without being vitrified, hand/machine moulded, deep red, cherry or copper coloured, of regular shape and size & shall have sharp and square edges with smooth rectangular faces. The bricks shall be free from pores, cracks, flaws and nodules of free lime. Hand moulded bricks shall be moulded with a frog and those made by extrusion process may not be provided with a frog. Bricks shall give a clear ringing sound when struck and shall have a minimum crushing strength of 5N/sq.mm unless otherwise specified in the item.

The average water absorption shall not be more than 20 percent by weight upto class 12.5 and 15 percent by weight for higher classes. Bricks which do not conform to this requirement shall be rejected. Over or under burnt bricks are not acceptable for use in the works.

Sample bricks shall be submitted to the ENGINEER for approval and bricks supplied shall conform to approved samples. If demanded by ENGINEER, brick samples shall be got tested as per IS: 3495 by CONTRACTOR at no extra cost to OWNER. Bricks rejected by ENGINEER shall be removed from the site of works within 24 hours.

Mortar for brick masonry shall consist of cement and sand and shall be prepared as per IS:2250. Mix shall be in the proportion of 1:5 for brickwork of thickness one brick or above and 1:4 for brickwork of thickness half brick or below, unless otherwise specified in the respective items of work. Sand for masonry mortar shall conform to IS:2116. The sand shall be free from clay, shale, loam, alkali and organic matter and shall be of sound, hard, clean and durable particles. Sand shall be approved by ENGINEER. If so directed by the ENGINEER, sand shall be screened and washed till it satisfies the limits of deleterious materials.

For preparing cement mortar, the ingredients shall first be mixed thoroughly in dry condition. Water shall then be added and mixing continued to give a uniform mix of required consistency. Mixing shall be done thoroughly in a mechanical mixer, unless hand mixing is specifically permitted by the ENGINEER. The mortar thus mixed shall be used as soon as possible, preferably within 30 minutes from the time water is added to cement. In case, the mortar has stiffened due to evaporation of water, this may be re-tempered by adding water as required to restore consistency, but this will be permitted only upto 30 minutes from the time of initial mixing of water to cement. Any mortar which is partially set shall be rejected and shall be removed forthwith from the site. Droppings of mortar shall not be re-used under any circumstances.

The CONTRACTOR shall arrange for test on mortar samples if so directed by the ENGINEER.

WORKMANSHIP

Workmanship of brick work shall conform to IS: 2212. All bricks shall be thoroughly soaked in clean water for at least one hour immediately before being laid. The cement mortar for brick masonry work shall be as specified in the respective item of work. Brick work 200mm/230mm thick and over shall be laid in English Bond unless otherwise specified. 100mm/115mm thick brickwork shall be laid with stretchers. For laying bricks, a layer of mortar shall be spread over the full width of suitable length of the lower course. Each brick shall be slightly pressed into the mortar and shoved into final position so as to embed the brick fully in mortar. Only full size bricks shall be used for the works and cut bricks utilised only to make up required wall length or for bonding. Bricks shall be laid with frogs uppermost. For the half brick wall at every 6th layer of height of the brickwork lay down 02 no, 6mm M S bars in full length of the brickwork

All brickwork shall be plumb, square and true to dimensions shown. Vertical joints in alternate courses shall come directly one over the other and be in line. Horizontal courses shall be levelled. The thickness of brick courses shall be kept uniform. In case of one brick thick or half brick thick wall, atleast one face should be kept smooth and plane, even if the other is slightly rough due to variation in size of bricks. For walls of thickness greater than one brick both faces shall be kept smooth and plane. All interconnected brickwork shall be carried out at nearly one level so that there is uniform distribution of pressure on the supporting structure and no portion of the work shall be left more than one course lower than the adjacent work. Where this is not possible, the work shall be raked back according to bond (and not saw toothed) at an angle not exceeding 450. But in no case the level difference between adjoining walls shall exceed one metre. Brick-work shall not be raised more than one metre per day.

Bricks shall be so laid that all joints are well filled with mortar. The thickness of joints shall not less than 6 mm and not more than 10 mm. The face joints shall be raked to a minimum depth of 10mm/15mm by raking tools during the progress of work when the mortar is still green, so as to provide a proper key for the plastering/pointing respectively to be done later. When plastering or pointing is not required to be done, the joints shall be uniform in thickness and be struck flush and finished at the time of laying. The face of brickwork shall be cleaned daily and all mortar droppings removed. The surface of each course shall be thoroughly cleaned of all dirt before another course is laid on top.

During inclement weather conditions, newly built brick masonry works shall be protected by tarpaulin or other suitable covering to prevent mortar being washed away by rain.

Brickwork shall be kept constantly moist on all the faces for at least seven days. The arrangement for curing shall be got approved from the ENGINEER.

Double scaffolding having two sets of vertical supports shall be provided to facilitate execution of the masonry works. The scaffolding shall be designed adequately considering all the dead, live and possible impact loads to ensure safety of the workmen, in accordance with the requirements stipulated in IS:2750 and IS:3696 (Part 1). Scaffolding shall be properly maintained during the entire period of construction. Single scaffolding shall not be used on important works and will be permitted only in certain cases as decided by the ENGINEER. Where single scaffolding is adopted, only minimum number of holes, by omitting a header shall be left in the masonry for supporting horizontal scaffolding poles. All holes in the masonry shall be carefully made good before plastering/painting.

In the event of usage of traditional bricks of size 230 mmxll5mmx75mm, the courses at the top of the plinth and sills as well as at the top of the wall just below the roof/floor or slabs and at the top of the parapet shall be laid with bricks on edge.

All brickwork shall be built tightly against columns, floor slabs or other structural members.

To overcome the possibility of development of cracks in the brick masonry following measures shall be adopted.

For resting RCC slabs, the bearing surface of masonry wall shall be finished on top with 12 mm thick cement mortar 1:3 and provided with 2 layers of Kraft paper Grade 1 as per IS:1397 or 2 layers of 50 micron thick polyethylene sheets.

RCC/steel beams resting on masonry wall shall be provided with plain or reinforced concrete bed blocks of dimensions as indicated in the drawings duly finished on top with 2 layers of Kraft paper Grade 1 as per IS:1397 or 2 layers of 50 micron thick polyethylene sheets.

Steel wire fabric shall be provided at the junction of brick masonry and concrete as specified elsewhere before taking up plastering work.

The above items shall be measured and paid for separately under the respective items of work.

Bricks for partition walls shall be stacked adjacent to the structural member to pre-deflect the structural member before the wall is taken up for execution. Further, the top most course of half or full brick walls abutting against either a de-shuttered slab or beam shall be built only after any proposed masonry wall above the structural member is executed to cater for the deflection of the structural element.

Reinforced cement concrete transoms and mullions of dimensions as indicated in the construction drawings are generally required to be provided in half brick partition walls. Reinforced concrete for transoms and mullions shall be measured and paid for separately under the respective items of work.

Where drawings indicate that structural steel sections are to be encased in brickwork, the brick masonry shall be built closely against the steel section, ensuring a minimum of 20mm thick cement-sand 1:4 over all the steel surfaces. Steel sections partly embedded in brickwork shall be provided with bituminous protective coating to the surfaces at the point of entry into the brick masonry.

CONTRACTOR shall note that the unit rates quoted for the masonry work shall be deemed to include for the installation of miscellaneous inserts such as pipe sleeves, bolts, steel sections with anchors etc. and providing pockets, leaving openings, cutting chases etc. in accordance with the construction drawings. Miscellaneous inserts shall he either supplied FREE by the OWNER or to be furnished by the CONTRACTOR. Any of the miscellaneous inserts which are required to be fabricated and supplied by the CONTRACTOR and cement concrete to be provided in the pockets for the hold fasts of door/window frames etc. shall however, be measured and paid separately under the respective items of work. .

Facing bricks of the type specified conforming to IS:2691 shall be laid in the positions indicated on the drawings and all facing brickwork shall be well bonded to the backing bricks/RCC surfaces. The level of execution of the facing brick work shall at any time be lower by at least 600 mm below the level of the backing brickwork.

Facing bricks shall be laid over 10 mm thick backing of cement mortar. The mortar mix, thickness of joint and the type of painting to be carried out shall be as specified in the item of work. The pattern of laying the bricks shall be as specifically indicated in the drawings.

Miscellaneous inserts in masonry e.g. sleeves, wall ties, anchors, conduits, structural sheet, steel lintels etc. shall be installed by the contractor. Furnishing fixing of any of these inserts by the contractor will be paid for separately under steel work. Openings, arches, etc. shall be provided as shown on the drawing’s chasses, pockets etc. shall be provided as shown on the drawings to receive rain water pipes etc. Wall ties and flashings shall be built into the brickwork in accordance with the drawings and specifications

For facing brickwork, double scaffolding shall be used.

Faced works shall be kept clean and free from damage, discoloration etc., at all times.

MEASUREMENT

Measurement shall be in cu.m correct to two places of decimal for brickwork of thickness one brick i.e. 200mm/230mm and above. Measurement shall he in sq.m correct to two places decimal for facing brickwork and brickwork of thickness half brick i.e. l00mm/115mm and below placing 6mm bars in the half brick work shall be included in the rates of the respective item. Measurement shall be for the quantities as actually executed duly deducting for openings, lintels, transomes/mullions etc. All concrete works shall he measured and paid for separately under the respective items of work. No deductions shall be done for openings upto 1000 Sq.cm, ends of dissimilar materials, drainage holes, window/door holdfasts, concrete lintel bearings, landing slab bearings, beam bearing, chimney flues, cutouts, iron fixtures, pipes upto 30 cm dia.

SECTION - 4.00 - FINISHING WORKS

Applicable Codes

IS: 2394 - Code of practice for application of lime plaster finish.

IS: 1477 - Code of practice for painting of ferrous metals in buildings and allied finishes (Part I & III).

IS: 427 - Distemper, dry colour as required.

IS: 2395 - Code of practice for painting concrete, masonry and plaster surfaces.

IS: 428 - Distemper, oil emulsion, colour as required.

Scaffolding

Wooden ballies, bamboo, planks, trestles and other scaffolding shall be sound. These shall be properly examined before erection and use.

Stage scaffolding shall be provided for ceiling plaster and wall plaster. Scaffolding shall be independent of the walls.

Preparation of Surface

The surface shall be cleaned off all dust, loose mortar droppings, traces of algae, efflorescence, and other foreign matter by water or by brushing.

Trimming of projections on brick/concrete surface, wherever necessary, shall be carried out to get an even surface. The joints of masonry shall be racked to a depth of 15mm.

The masonry shall be allowed to dry out for sufficient period before carrying out the plasterwork.

All concrete surfaces, which are to receive cement plaster, shall be hacked 7mm to 10mm deep with minimum 100 hacks per sq.m.

The wall shall be damped evenly before applying the plaster. If the surface becomes dry in sports, such areas shall be moistened again.

Application of Plaster

Cement and fine screened sand shall be thoroughly mixed dry in proportions specified, water shall then be added gradually and the mortar mixed thoroughly until it is homogeneous in appearance and uniform in colour and of the required consistency. No more mortar shall be prepared than can be used up in half an hour.

The plaster about 150mm shall be first applied, horizontally and vertically, not more than two metres’ interval over the entire surface to serve as gauges. The surfaces of these gauged areas shall be truly in plane of the finished plaster surface. The mortar then shall be laid on the wall, between the gauges with trowel. The mortar shall be applied in a uniform surface slightly more than the specified thickness.

The surface finish shall be as specified, ordinary finish may be done with wooden floats or steel trowels as directed in which case the surface is rubbed over until it is even and smooth. Excessive troweling or over working the float shall be avoided. All corners and angles shall be kept perfectly plumb and true and soffits or arches shall be true to shape. All jambs and reveals shall be carefully finished at the door and window frames. All lines shall be true and straight and levels correctly maintained. Internal angles shall be rounded, if so directed and all edges shall be rounded, splayed, or beaded as directed without extra charges.

In suspending the work at the end of the day, the plaster shall be left, cut clean to line both horizontally and vertically. When recommencing the plastering, the edge of the old work shall be scraped clean and wetted with cement putty before plaster is applied to the adjacent areas to enable the two to properly join together. Plastering work shall be closed at the end of the day on the body of the wall and nearer than 15cm to any corners or arises. It shall neither be closed on the body of features such as plaster bands and cornices nor at the corners or arises. Horizontal joints in plasterwork shall not also occur on parapet tops and copings as these invariably lead to leakage. No portion of the surface shall be left out initially to be patched up later on.

Curing

This shall be started 24 hours after finishing the plaster. The plaster shall be kept wet constantly for a period of 7 days. During this period it shall be protected from all damages.

When the thickness of plaster is 12mm the same shall be carried out in one coat only. All plasterwork having thickness over 12mm shall be carried out in two coats.

4.01. Providing and Applying Cement Plaster 15mm thick.

The surface to be plastered shall be washed with fresh clean water free from all dirt, loose material, grease etc.., double scaffolding with thoroughly wetted surface 6 hours before plastering work is commenced. Concrete surfaces to be plastered will however be kept dry.

The wall should not be too wet but only damp at the time of plastering the damping shall be uniform to get uniform bond between the plaster and the wall. The junction between the brick work and RCC should be fixed with chicken wire mesh as directed before plaster. The rate quoted shall be including supply, providing & fixing of required chicken wire mesh.

The proportion of the mortar shall be as specified under the respective items of work. Cement shall be mixed thoroughly in dry condition and then just enough water added to obtain a workable consistency. The quality of water, sand and cement shall be as mentioned in the specifications for concrete and allied works. The mortar thus mixed shall be used immediately and in no case shall the mortar be allowed to stand for more than 30 minutes after mixing with water. The plaster shall be laid in a double coat. The mortar shall be splashed on the prepared surface with a trowel and finished smooth by troweling. The plastered surface shall be rubbed with iron plate till the surface shows cement paste. The work shall be in line and level. Curing of plaster shall be started as soon as the applied plaster has hardened enough so as not to be damaged. Curing shall be done by continuously applying water in a fine spray and shall be carried out for at least 7 days.

The plaster shall be carried out on jambs, lintel and sill faces top and undersides, etc. as shown in the drawing or as directed by the engineer.

Mode of Measurement

a) The quantity of work to be paid for under this item shall be calculated by taking the projected surface of the area plastered after making necessary deductions for openings, doors, windows etc. as given below:-

i) No deductions shall be made for opening or end steel joints, beams, post girders etc. up to 0. 5 sq.m area. No addition shall be made for joints, soffits and sills of such openings. This is applicable to both the sides of the wall.

ii) Where openings exceed 0.5 Sq.m but does not exceed 3 sq.m and also when only one side of the wall is treated and other side is not treated, deduction shall be made if the width of the reveal on the treated sides is less than that on the untreated side but if the width of the reveal is more than no deduction nor addition shall be made for reveals for jambs, soffits, sills etc.

iii) For openings more than 0.5 sq.m but not exceeding 3sq.m and also when both the sides of the wall is plastered with the similar plaster, deduction shall be made for one face only. But when both the sides treated with different plaster, then deduction shall made from the side on which the reveal is less and no deduction on the other side.

iv) For openings whose respective areas exceed 3 sq.m deduction shall be made for the full opening of the wall treatment on both faces while at the same time jambs, sills and soffits shall be measured in sq.m for payment. In measuring the jambs deduction shall not be made for the area in contact with the frames of doors, windows etc.

v) If the average thickness of the plaster is more than the specified thickness due to any account nothing extra shall be paid for the same.

vi) Nothing extra shall be paid for double scaffolding and the rate is applicable for work at levels as specified in each item description.

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