

Bid Document

Bid Details	
Bid End Date/Time	30-11-2022 18:00:00
Bid Opening Date/Time	30-11-2022 18:30:00
Bid Offer Validity (From End Date)	90 (Days)
Ministry/State Name	Ministry Of Heavy Industries And Public Enterprises
Department Name	Department Of Heavy Industry
Organisation Name	Andrew Yule Company Limited
Office Name	Tea Division
Total Quantity	1
Item Category	Construction of 2 Units of Bungalow as per specifications at Mim Tea Estate (Q3)
Minimum Average Annual Turnover of the bidder (For 3 Years)	65 Lakh (s)
Years of Past Experience Required for same/similar service	3 Year (s)
MSE Exemption for Years of Experience and Turnover	No
Startup Exemption for Years of Experience and Turnover	No
Document required from seller	Experience Criteria,Past Performance,Bidder Turnover,Certificate (Requested in ATC),Additional Doc 1 (Requested in ATC) *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
Past Performance	50 %
Bid to RA enabled	No
Time allowed for Technical Clarifications during technical evaluation	2 Days
Evaluation Method	Total value wise evaluation

EMD Detail

Required	No
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ePBG Detail

Required	No
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Splitting

Bid splitting not applied.

Reserved for Make In India products

Reserved for Make In India products	Yes
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Reserved for MSE

Reserved for MSE	Yes
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1. The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year, should be as indicated above in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3-year-old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.
2. Experience Criteria: In respect of the filter applied for experience criteria, the Bidder or its OEM {themselves or through reseller(s)} should have regularly, manufactured and supplied same or similar Category Products to any Central / State Govt Organization / PSU / Public Listed Company for number of Financial years as indicated above in the bid document before the bid opening date. Copies of relevant contracts to be submitted along with bid in support of having supplied some quantity during each of the Financial year. In case of bunch bids, the category of primary product having highest value should meet this criterion.
3. Bid reserved for Make In India products: : Procurement under this bid is reserved for purchase from Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. However, eligible micro and small enterprises will be allowed to participate. The minimum local content to qualify as a class 1 local supplier is denoted in the bid document. All bidders must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which the bid is liable to be rejected. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020 . In case Buyer has selected Purchase preference to Micro and Small Enterprises clause in the bid, the same will get precedence over this clause.
4. Procurement under this bid is reserved for purchase from Micro and Small Enterprises whose credentials are validated online through Udyog Aadhaar for that product category. If the bidder wants to avail the reservation benefit, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service.
5. Past Performance: The Bidder or its OEM {themselves or through re-seller(s)} should have supplied same or similar Category Products for 50% of bid quantity, in at least one of the last three Financial years before the bid opening date to any Central / State Govt Organization / PSU / Public Listed Company. Copies of relevant contracts (proving supply of cumulative order quantity in any one financial year) to be submitted along with bid in support of quantity supplied in the relevant Financial year. In case of bunch bids, the category related to primary product having highest bid value should meet this criterion.

Construction Of 2 Units Of Bungalow As Per Specifications At Mim Tea Estate (1 set) (Minimum 50% Local Content required for qualifying as Class 1 Local Supplier)

Brand Type	Unbranded
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Technical Specifications

Buyer Specification Document	Download
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Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	Rupankar Goswami	734221,Mim Tea Estate P.O. : Sukhiapokhri Dist. : Darjeeling	1	180

Buyer Added Bid Specific Terms and Conditions

1. Generic

OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the contract at the contracted rates. Bidders are bound to accept the orders accordingly.

2. Generic

Bidder shall submit the following documents along with their bid for Vendor Code Creation:

- Copy of PAN Card.
- Copy of GSTIN.
- Copy of Cancelled Cheque.
- Copy of EFT Mandate duly certified by Bank.

3. Generic

Upload Manufacturer authorization: Wherever Authorised Distributors are submitting the bid, Manufacturers Authorisation Form (MAF)/Certificate with OEM details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid.

4. Scope of Supply

Scope of supply (Bid price to include all cost components) : Supply Installation Testing and Commissioning of Goods

5. Forms of EMD and PBG

Bidders can also submit the EMD with Account Payee Demand Draft in favour of ANDREW YULE & CO. LTD. payable at Kolkata.
Bidder has to upload scanned copy / proof of the DD along with bid and has to ensure delivery of hardcopy

to the Buyer within 5 days of Bid End date / Bid Opening date.

6. **Buyer Added Bid Specific ATC**

Buyer Added text based ATC clauses

A. Eligibility:

1. The vendor and his team should have experience in the field of Construction, Design, Drawing, Execution, Interiors, Landscaping, Electrical and Plumbing work related to Bungalows in Tea Garden in the Hills.
2. The firm should have a team of Engineers which comprises of Civil Engineers having sufficient experience to handle such construction activity.

B. Scope of Work:

The Selected vendor has to design/ construct Bungalows as per specification at MIM Tea Estate of Andrew Yule Tea Garden in the Dist. of Darjeeling, W.B. Mim Tea Estate as detailed below with appropriate facilities:

- Location of Site - Mim Tea Garden, PO. Sukhiapokhri, Dist -Darjeeling, Pin - 734221.
- Area available - 5000 sq.ft with super built-up area of 1700 sq. ft per bungalow- Schematic drawing attached for reference (AYCL/MIM/BUNG/001 to 004)

Site Visit

The prospective bidders are advised to visit and examine the site where the job is to be done and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract. The cost of visiting site shall be at the bidder's own expense.

Pre-bid meeting

The prospective bidders through their designated representative are invited to attend a pre-bid meeting either physically at MIM Tea Estate or through VC as detailed below :

Venue : Mim Tea Estate, P. O. P.O. Sukhiapokhri,
Dist. - Darjeeling, West Bengal

Date & Time : 17.11.2022, 14.00 Hrs.

VC Link : meet.google.com/bts-dmfs-fre

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

C. Technical Specifications - Civil

CODES AND STANDARDS

The following Indian codes and standards shall be used for construction and quality control system of all civil and structural works. In all cases latest revisions with amendments, if any shall be followed. Apart from the specific codes mentioned herein, all other relevant and related codes concerning the specific jobs under consideration and/or referred to in these codes and technical specification shall be followed wherever applicable. (All codes shall be latest as on the date of issuing the Tender/Bid document).

General

- a) Internationally accepted design Codes and Standards where Indian Codes are not available and which are equivalent to Indian Standards.
- b) National Building Code of India.
- c) "Accepted Standards" and "Good Practice" listed in the appendix to National Building Code of India.

Earthwork

- a) IS-1498: Classification and identification of soils for General Engineering purposes.
- b) IS-3764: Safety Code for excavation work.
- c) IS-7293: Safety Code for working with construction machinery.

Concrete

- a) IS-269 : Ordinary and low heat Portland cement.
- b) IS-383 : Coarse and fine aggregate from natural sources for concrete.
- c) IS-432 : Mild Steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement.
- d) IS-455 : Portland Slag Cement.
- e) IS-456 : Code of Practice for Plain and reinforced concrete.
- f) IS-460 : Test Sieves (all parts).
- g) IS-516 : Methods of test for strength of concrete.
- h) IS-1199: Methods of sampling and analysis of concrete.
- i) IS-1489 : Portland pozzolana cement Fly ash based (Part 1) and calcined clay based Part 2)
- j) IS-1566: Hard drawn steel wire fabric for concrete Reinforcement.
- k) IS-1786: High strength deformed steel bars and wires for concrete reinforcement.
- l) IS-1834: Hot applied sealing compounds for joints in concrete.
- m) IS-2386: Methods of test for aggregates for concrete (all parts).
- n) IS-2502: Code of practice for bending and fixing of bars for concrete reinforcement.
- o) IS-3370: Code of practice for concrete structures for storage of liquids (all parts).
- p) IS-3414: Code of practice for design and installation of joints in

buildings.

- q) IS-4948: Welded steel wire fabrics for general use.
- r) IS-6452: High Alumina Cement for Structural use.
- s) IS-7320: Concrete slump test apparatus.
- t) IS-7861: Code of practice for extreme weather concreting (all parts).
- u) IS-8041: Rapid Hardening Portland cement.
- v) IS-8112: High strength ordinary Portland Cement.
- w) IS-14687: Formwork for concrete structures.
- x) IS-10262: Recommended guidelines for concrete mix design

· **Foundations**

- a) IS-1904: Code of practice for structural safety of buildings: Willow foundations.
- b) IS-2950: Code of practice for design and construction of raft foundations.
- c) IS-2911: Code of practice for design and construction of Pile foundations.
- d) IS-5624: Specification for foundation bolts
- e) IS-8009: Code of Practice for calculation of settlement of Foundations

· **Loading**

- a) IS-875: Code of practice for Design loads for buildings and structures.

· **Grade of Reinforcement steel**

Reinforcing bars will be TMT bars of grade Fe500 conforming to IS-1786 and Mild Steel bars conforming to IS: 432 (Grade I) of main producer such as "SAIL" or "TATA STEEL" or "RINL" or vendor approved by AYCL.

TECHNICAL SPECIFICATION FOR FOUNDATION & RCC SUPERSTRUCTURE

· **Earth Work in Excavation, Grading and Back Filling**

1) **Scope**

This specification covers the general requirements of earthwork in excavation in all types of soil including rock, site levelling /grading, back filling with compaction and disposal of surplus soils to leads and lifts as required/directed by the Engineer in-charge. The work shall be carried out in complete manner as per specifications, drawings and Engineer's directions and shall include all labour, material & equipment etc.

2) **General**

Excavation shall be carried out to correct lines and levels. This shall also include, proper shoring and strutting as required to maintain the sides of excavation as also all other safety measures such as creating safety barricades around excavated areas and warning lights at night.

Excavated materials shall be dumped to lead and lift as directed by the Engineer. The excavated material shall be stacked properly as directed by the Engineer.

The areas to be covered with embankments shall be stripped of topsoil to required depths to expose acceptable founding strata. Top soil unsuitable for use in embankment construction and other fills shall be disposed off as directed. Combustible materials shall be stacked to be burnt in locations sufficiently remote to eliminate all danger of fire hazards.

3) **Excavation**

All excavation work shall be carried out by mechanical equipment/manually except for the last 150 mm of soil profile to be excavated out which shall be carried out manually to ensure properly compacted levelled / dressed surface, worthy of receiving PCC or other intended purpose.

The excavation must be carried out in the most expeditious and efficient manner. The excavated pits shall have side slopes or benching sufficient to safeguard against any cave-in/ collapse of soil as well as to provide for working space requirements as per actual soil conditions encountered. All excavation shall be carried out to the minimum dimensions as required for safety and working space. Prior approval of the Engineer in-charge shall be obtained by the Bidder in each individual case, for the method proposed

to be adopted for the excavation, including dimensions, side slopes / benching, dewatering, disposal of excavated material, etc. However this approval, shall not in any way absolve the Bidder of his responsibility for any consequent loss or damage. All necessary precautions shall be taken to prevent damage to or interference with underground or over ground services such as cables, drains, piping or piles, whether shown on drawings or not.

Before taking up any construction activity, the Bidder shall take all steps and precautions necessary for the safety and protection of any existing work/facility, adjoining property or work at no extra cost to the owner.

4) **Back Filling**

Select surplus soils from excavated materials shall be used as backfill. Fill material shall be free from lumps, salts, sulphates, organic or other foreign material. All fill material will be subject to Engineer's approval. The Bidder shall remove fill material rejected by Engineer 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.

Bidder shall make arrangements for bringing select fill material in case required from outside borrow pits. The material and source shall be subject to prior approval of the Engineer. All costs involved including paying of any royalty, transportation cost etc. in providing such borrow material shall be borne by Bidder.

All back filling shall be carried out with approved material in layers not exceeding 300mm, watered and compacted with mechanical compaction

equipment. However, the thickness of the backfill layers may be changed by the engineer depending on the fill material and equipment used. When filling reaches the finished level, the surface shall be flooded with water, unless otherwise directed, for at least 24 hours and the surface re-compacted as specified after drying to avoid settlements at a later stage.

The finished level of the filling shall be trimmed to the level/ slope. In case of compaction of granular material such as sands and gravel specified vibratory rollers shall be used. As rolling proceeds, water sprinkling shall be done to facilitate compaction.

Rolling shall commence from the outer edge and progress towards the centre and continue until compaction is to the satisfaction of the Engineer. All soft spots shall be made good by removing, refilling with approved soil and compaction.

At locations where it is not possible to use mechanical equipment /rollers because of space restrictions / any other condition, the Bidder shall be permitted to use pneumatic tampers, rammers, manual compaction etc. provided proper compaction is ensured.

All excavations shall be kept free of water. Grading in the vicinity of excavation shall be proper to prevent surface water running into excavated areas. Bidder shall remove by pumping or other means (as approved by Engineer in-charge) any water, inclusive of rainwater and subsoil water accumulated in excavation pits and maintain all excavations in dewatered conditions until the foundation concrete work is completed and the pit is backfilled. Scheme of dewatering 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 that construction is progressing and there are no delays attributable to occurrence of water in the pits. Sumps made for dewatering must be kept clear of the excavations/ trenches required for further work. The Bidder shall protect the earth fill from being washed away by rain or being damaged in any other way. Should any slip occur, the Bidder shall remove the affected material and make good the slip at his cost.

To ensure that the fill has been compacted as specified, field and laboratory tests shall be carried out by the Bidder at his cost. Field compaction test may be carried out at different stages of filling for full height. The compaction test, shall comply with the Modified Proctor density at moisture content differing not more than +/-4 percent from

the optimum moisture content. The Bidder shall demonstrate adequately at his cost, by field and laboratory tests that the specified density has been obtained.

The fill shall be carried out to such dimensions and levels as indicated on the drawings after the stipulated compaction. The fill will be considered as incomplete if the compaction test does not achieve the stipulated value/ result.

- **Anti Termite Treatment**

- 1) **Scope**

- The scope of work includes anti-termite chemical treatment of the structures against attack by termites.

- The work shall be executed as specified in IS: 6313 Part-II and as per approved specification of the manufacturer /agency having proven special know-how for the job.

- Proper penetration and uniform distribution of treating solution shall be done in accordance with the instruction of the Engineer in-charge and approved specification of the manufacturer /agency. Soil treatment shall not be done when it is raining or when the soil is wet with rain or subsoil water.

- Chemicals conforming to IS 8963 and from approved manufacturer / agency, shall be applied by pressure pumps, uniformly over the area treated.

- Special care shall be taken at the locations, where pipes, conduits and cables enter the building. All the wooden door/window frames on the ground floor of the buildings shall be treated with insecticidal solution as per approved specification and the instructions of the engineer in-charge.

- **Concrete and allied works**

- 1) **Scope**

- The scope of work under this specification covers the general requirements for concrete using on-site manually / batching plants including requirements with regard to the quality, handling, storage of ingredients, proportioning, batching, mixing, transporting, placing, curing, protecting, repairing, finishing and testing of concrete; grouting, quality and adequacy for making and providing formwork along with its supporting scaffolding/ props; requirements with regard to the quality, storage, bending, binding and fixing of reinforcement steel etc.

- All works shall be in accordance with the relevant Indian standards and

codes, best established engineering practices and as directed by Engineer in-charge from time to time. The decision of Engineer as regards the specification to be adopted and their interpretation and the mode of execution of work shall be final and binding on Bidder and no claim whatsoever will be entertained on this account.

Engineer in-charge shall have, at all times, the right to inspect all materials, equipments and operations including the sources of materials, procurement, transportation, storage of materials, the concrete batching and mixing equipment, and the quality control system, for approval. Such an inspection shall be arranged by the bidder to obtain Engineer's approval, prior to starting of any concrete work. This shall, however, not relieve Bidder of any of his responsibilities with regard to quality, adequacy and usefulness of the job. Materials not conforming to the specifications shall be rejected and immediately removed from the site by the bidder.

Materials and operations shall satisfy the design requirements of strength, serviceability, safety, durability and finish with due regards to the functional requirements and the environmental conditions to which the structure will be subjected. Generally, materials complying with relevant codes/standards shall only be used. Other materials may be used in certain circumstances only after approval of the Engineer in-charge provided their performance suitability based on previous data, experience or tests can be established.

- **Materials**

- 1) **Fine and Coarse Aggregates**

Aggregates shall comply with the requirements of IS: 383 "Coarse and Fine Aggregates for Concrete". The aggregates shall be hard, strong, dense, durable, clean and free from all deleterious impurities and shall be obtained from approved sources. Aggregates shall not contain any harmful material such as pyrites, coal, lignite, shale or similar laminated material, clay, alkali, soft fragments, seashells and organic impurities in such quantity as to affect the strength or durability of concrete. Aggregates, which are chemically reactive with alkalis of cement, shall not be used.

All aggregates shall be subject to inspection and testing from time to time. Sampling and testing shall be carried out in accordance with IS: 2386 "Methods of Test for Aggregates for concrete". The grading shall conform to IS: 383 and shall be within the limits of Grading Zone-II. The maximum size of particle shall be 4.75mm and shall be graded down. Sand containing more than 10% of fine grains passing through 150-micron sieve shall not be used for concrete work. The fineness modulus of sand shall be between 2.5 to 3.0 for use in concrete work.

The nominal maximum size of the aggregates for concrete work according to relevant clauses of IS: 456 and shall be 20mm and down graded. The aggregates shall be well graded; grading shall conform to relevant requirements of IS: 383. The maximum size of coarse aggregate shall be as stated on the drawings, but in no case greater than 1/4th the minimum thickness of the member.

The grading of fine aggregate for mortar and grout shall be within the limits of grading zone II and as defined in IS: 383.

The coarse aggregates shall be crushed or broken from hard stone obtained from approved quarries of igneous or metamorphic origin. The stone chips shall be hard, strong, dense, durable and angular in shape. It shall be free from soft, friable, thin, flat, elongated or laminated and flaky pieces and free from dirt, clay lumps, and other deleterious materials like coal, lignite, silt, soft fragments, and other foreign materials which may affect adversely the strength & durability of concrete. The total amount of deleterious/foreign materials shall not exceed 5% by weight as per IS: 383-1970. The stone chips shall be screened and washed before use where necessary.

Care shall be taken in the storage to avoid intrusion of any foreign materials into the aggregates. Where two or more types of aggregates are stored close to each other, proper segregation shall be done to avoid mixing up.

2) **Cement**

Portland Slag Cement and Portland pozzolana cement complying with the requirements of relevant IS shall be used for making plain and reinforced concrete, and mortar.

The source of supply, type or brand of cement within the same structure or portion thereof shall not be changed without prior approval from the Engineer in-charge.

The sampling of cement for testing shall be according to IS: 3535. All tests shall be in accordance with the relevant clauses of IS: 4031 (Part-I to Part-15) & IS: 4032.

From the time a consignment of cement is delivered at site and tested and approved by the Engineer until such time as the cement is used on the works, the Bidder shall be responsible for keeping the same in sound and acceptable condition and at his expense and risk. Any cement found deteriorating while in the Bidder's charge shall be rejected as unsuitable by the Engineer in-charge, which shall be removed from the site to

outside the limits of work at the cost of Bidder.

In order to ensure due progress, the Bidder shall at all times maintain on the site at least such stock of cement as decided by the Engineer in-charge from time to time. No cement shall be used upon the works until it has been accepted as satisfactory by the Engineer.

The cement shall be stored in such manner as to permit easy access for proper inspection and in a suitable weather-tight, well-ventilated building to protect it from dampness caused by ingress of moisture from any source. Different types of cement shall be stored separately. Cement bags shall be stacked at least 200mm clear off the floor leaving a space of 600mm around the exterior walls. The cement shall not be stacked more than 10 bags high. Cement stored for more than 90 days shall be tested prior to use on work.

3) **Water**

Water used for mixing concrete and mortar and for curing shall be clean and free from impurities such as oil, acid, alkali, salts, organic materials or other substances that may be deleterious to concrete or steel. The pH value of water shall generally be not less than '6'. Water for both mixing and curing shall meet the requirements of IS: 456. Water shall be obtained from an approved source. Potable water is generally acceptable, where it is obtained from a source other than a drinking water supply main, it shall be tested to establish its suitability. Water for construction purpose shall be stored in proper storage tanks to prevent any organic impurities getting mixed up with it. Bidder shall make his own arrangements for storing water at site in tanks to prevent contamination.

Calcium chloride shall not be used for accelerating set of the cement for any concrete containing reinforcement or embedded steel parts.

Admixtures may be used to modify one or more of the following properties of fresh concrete with care being taken to ensure that other properties are not affected adversely:

- a) To retard or accelerate both initial and final setting times.
- b) To increase workability without increasing water content or to decrease the water content at the same workability.
- c) To reduce segregation of concrete, mortars and grouts.

Admixtures used as integral waterproofing agent shall be free of chlorides and sulphates and shall conform to IS: 2645. The application and quantity

shall be as per manufacturer's specification.

4) **Reinforcement Steel**

Reinforcing steel bars for concrete shall be round steel bars of the following types:

All reinforcement bars shall be of uniform cross sectional area and be free from loose mill scales, dust, loose rust, coats of paint, oil or other coatings which may destroy or reduce bond.

All material shall be stored in a manner so as to prevent its deterioration and contamination which would preclude its use in the works. Requirements of IS: 4082 shall be complied with.

5) **Routine Test**

All materials used for the works shall be tested before use. Manufacturer's test certificate shall be furnished for each batch of cement/steel and when directed by Engineer. Representative Samples shall also be got tested by the Bidder in any external laboratory approved by Engineer in-charge at no extra cost to Owner. Bidder shall furnish manufacturer's test certificates and technical literature for the materials proposed to be used.

The routine tests of materials, delivered at site shall be at the following intervals:

Aggregates - Fortnightly or for every 100m³ for each aggregate sizes

whichever is earlier.

Cement - Fortnightly or for each consignment.

Water - Once in two months for each supply source.

6) **Concrete**

The section below deals with the requirements of various grades of concrete and the parameters that need special attention to achieve dense concrete with the specified strength.

Concrete work shall be carried out as per IS: 456. Mix design concrete shall be used for all areas other than lean concrete work and plain cement concrete where nominal/volume mix can be permitted. Design

mix shall be carried out as per IS: 10262. Specific approval of the Owner / Engineer/ Consultant shall be obtained regarding degree of quality control to be adopted for design mix.

Higher grade of concrete than specified above may be used at the discretion of the Owner.

Unless otherwise specified, 20mm and down aggregates shall be used for all structural concrete works.

Mix Design:

General:

At the commencement of the contract the Bidder shall make preliminary tests to determine the proportions by weight of cement, fine aggregates, coarse aggregates and water necessary to produce required grades of concrete. The mix proportions shall be selected to ensure that workability of the fresh concrete is suitable for the conditions of handling, placing and finishing as well as it develops the required strength, durability and surface finish upon hardening. The Bidder shall get approval of Engineer to proportions before he starts concreting. Such approval shall not relieve the Bidder of his responsibility to produce concrete having the required compressive strengths.

No departure from the approved proportions will be permitted unless the Engineer in- charge gives written permission for any change in proportion. The Engineer shall have authority at any time to check whether the mixing of concrete is carried out according to the approved proportions. The design of mixes shall be made by the Bidder at his own cost, for each grade of concrete as well as for various workability requirements. The cement content for various grades of concrete shall be based on design mix. However, irrespective of requirement of cement found out from design mix, cement content of concrete shall not be less than the quantities specified hereunder except for the cases specifically approved by the Engineer.

Water Cement Ratio

Where a particular water cement ratio is stipulated in the design or drawing along with the characteristic grade of concrete, the design of mix shall be carried out by adjusting the other variable factors to obtain the characteristic strength of concrete with stipulated water cement ratio. In the structures where the impermeability and shrinkage of concrete have an important bearing on the durability and serviceability of the structures, the water cement ratio shall be kept low and

preferably not exceeding 0.45. The water cement ratio, as achieved in the Mix Design or as specified in the drawings shall be adhered to strictly and shall not be varied without the permission of the Engineer.

- **Placing and Compaction of Concrete**

Before placement of concrete, the Bidder shall get all the form works, reinforcements, inserts, conduits, openings, surface preparation etc., checked and approved by the Engineer in-charge. To facilitate such checking, the Bidder shall complete all his works according to the drawings and specifications well in advance before placement of concrete at least 36 hours for all major/important/complicated works and 24 hours for all normal works. The checks are purely in the interest of the work and to draw the Bidder's attention to his contractual obligations to execute the works according to the drawings/specification and do not relieve the Bidder from his responsibility in getting the end results for the quality & strength of concrete and for maintaining the shape, level & dimensions of the finished concrete, as well as the inserts, openings, other features within the tolerance limits.

All concrete works shall normally be placed at or below soil level and where in touch with soil with a levelling layer of lean concrete M15. In such cases the earth shall be rammed and consolidated as directed by the Engineer such that it does not crumble and get mixed with the lean concrete during or after placement. If the foundation is quite wet, the same shall be kept dry and then sufficiently consolidated; if necessary, wet soil/ unsuitable soil shall be removed and replaced by sand or other suitable materials as directed by the Engineer at no extra cost to the Owner. Utmost care shall also be taken that earth from the sides also does not get mixed with the concrete, during or after placement, before it has sufficiently set and hardened.

The concrete shall be placed and compacted before setting commences & should not be subsequently disturbed. No water shall be mixed with the concrete after it has left the mixer. Method of placing should be such as to preclude segregation. Approved mechanical vibrator shall be used for compacting concrete, and concrete shall not be over vibrated or under vibrated. No concrete shall be placed until the place of deposit has been thoroughly inspected and approved by the Engineer. All inserts and embedments properly secured in position and checked and forms properly oiled. No concrete shall be placed in the absence of the Engineer. Concrete shall be placed on a clean surface free of all debris and other objectionable materials. Concreting shall not be done during rains unless all precautions have been taken by the Bidder and permission has been given by the Engineer.

Concrete shall not be dropped from a height of more than 2m except through a chute, the design and type of which shall be subject to approval of the Engineer. The concrete shall be placed, spread and compacted by approved mechanical vibrator. Vibrators shall not be used for pushing concrete to adjoining areas. For members involving vertical placing of concrete (eg. columns, walls etc.,) each lift shall be deposited in horizontal layer extending the full width between shuttering and of such depth that each layer can be easily and effectively vibrated and incorporated with the layer below by means of compaction. For member involving horizontal placing of concrete (e.g. slabs, beams etc.,) the concrete shall be placed along the line of starting point in such quantities as will allow members to be cast to their full depth along the full width between side shuttering and then gradually brought towards the finishing point along its entire front parallel to the starting line. Vibration and surface finish shall follow behind the placement as closely as possible. Utmost care shall be taken to avoid the displacement of reinforcements/ embedded parts or movement of formwork or damage to faces of the formwork or transmission of any harmful vibration/shocks to the concrete, which has not yet hardened sufficiently.

All members shall be concreted at such a rate that no cold joint is formed and fresh concrete is placed always against green concrete, which is still plastic and workable. Should any unforeseen occurrence results in a stoppage of concreting for one hour or such other time as might allow the concrete, already placed, to begin to set before the next batches can be placed, the Bidder shall make at his own cost, suitable tongue and groove construction joint, as approved by the Engineer. Any additional reinforcement required as directed by the Engineer shall also be provided at no extra cost to Owner. Before placement of new batches of concrete over that construction joint, the surface preparation according to this specification, stipulated earlier, shall be done by the Bidder. The concrete shall be worked well up against whatever surface it adjoins and compacted to such a degree that it reaches its maximum density as a homogeneous mass, free from air and water holes and penetrates to all corners of moulds and shuttering and completely surround the reinforcement. All measures shall be taken to make the shape, size, and location of the finished concrete including its embedments, holes, openings etc., well within the accepted tolerance limit.

- **Curing of Concrete**

The purpose of curing is to prevent loss of moisture from the concrete itself so that the cement inside the concrete is sufficiently hydrated which of course is slow and prolonged process. As soon as the concrete has hardened sufficiently the curing shall be started. To cure the concrete properly and sufficiently is also the sole responsibility of the Bidder.

This is done either by ponding or spraying water. Ponding is widely used for curing slab and pavements. Small earth bunds are formed over the edges of the slab and water is pumped or poured into them and the same is replenished at interval to make up for the loss of evaporation. As this type of curing is one of the best methods, 7 days of curing after final setting is sufficient. Curing is done by spraying water by suitable means at approved time/ interval. While spraying, it shall be ensured that the complete area is covered. In order to avoid cracking, cold water shall not be applied to massive members immediately after striking the formwork, while the concrete is still warm. Alternate wetting and over drying shall be avoided. Curing by spraying water shall be continued for at least 10 days after final setting.

- **Testing of Concrete**

- a) The Bidder shall carry out, entirely at his own cost, all sampling and testing in accordance with the relevant I.S. standards and as supplemented herein. The Bidder shall get all tests done at his site laboratory and/ or an approved external laboratory as per the instructions of the engineer in-charge and submit to the Engineer the test result in triplicate.
- b) At the place of both mixer and pouring concrete and, mixer point slump tests shall be carried out by the Bidder in accordance with I.S. 1199 as directed by the Engineer in - charge.
- c) The results of the slump tests/ tests shall be recorded in a register for reference duly signed by both the Bidder and the Engineer. That register shall be considered as the property of the owner and shall be kept by the Bidder at site in safe custody.
- d) For any particular batch of concrete, if the results do not conform to the requirements as specified or do not conform to any requirement of this specification, the Engineer has the right to reject that batch and the Bidder shall remove the same immediately from the site, at no cost to the owner.

- **Strength Test of Concrete**

- a) While placing concrete the Bidder shall make 6 nos. of 15 cm test cubes from particular batches of concrete as desired by the Engineer. The frequency of taking test cubes shall be according to IS: 456 or as directed by the Engineer.
- b) The cubes shall be prepared, cured and tested according to IS: 516. Out of the 6 nos. of test cubes 3 shall be tested for compressive strength at 7 days after casting and the remaining 3 at 28 days after casting.
- c) A register shall be maintained at site by the Bidder with the

following details entered for the cubes and signed both the Bidder and the Engineer. That register shall be considered as the property of the Owner.

- d) Following details shall be available for the cubes having reference to the specific structural member:
- Ø Mark on cubes
 - Ø The grade of concrete
 - Ø The mix of concrete
 - Ø Date and time of casting
 - Ø Crushing strength at 7 days
 - Ø Crushing strength at 28 days
 - Ø Any other information directed by the Engineer
- e) The acceptance criteria of concrete on strength requirement shall be in accordance with the stipulations under IS: 456.

▪ **Reinforcement Steel**

1) **General**

All steel for reinforcement shall be free from loose scales, rust coatings, oil, grease, paint or other harmful matters immediately before placing the concrete. To ensure this, reinforcements shall be cleaned thoroughly before bending and placement of the same.

2) **Storage**

Steel reinforcement shall be stored in such a manner that they are not in direct contact with ground. Bars of different classifications and sizes shall be stored separately. Reinforcement shall be stacked at least 15 cm above ground level and a coat of cement wash given at no extra cost to prevent scaling and rusting.

3) **Bar Bending Schedules**

The Contractor shall submit to the Engineer for approval Bar Bending Schedules with working drawings in triplicate, showing clearly the arrangements proposed by the Contractor to match available stock of reinforcing steel, within one month of receipt of the Letter of Intent or of the receipt of the relevant design drawings, whichever is later. Upon receipt of the Engineer's final approval of the Bar Bending Schedule and drawings, the Contractor shall submit 6 (six) prints of the final drawings with one reproducible print after incorporating necessary modifications or corrections, for final record and distribution. Approval of such detailed drawings by the Engineer shall not relieve the Contractor of his responsibility for correctness nor of any of his obligations to meet the other requirements of the Contract.

4) **Cleaning**

All steel for reinforcement shall be free from loose scales, oil, grease, paint or other harmful matters immediately before placing the concrete.

5) **Bending and Placing**

Bending and placing of bars shall be in conformity with IS: 2502 "Code of Practice for Bending and Fixing of Bars for Concrete Reinforcement" and IS 456 "Code of Practice for Plain and Reinforced Concrete".

6) **Lapping / Welding of Reinforcement**

Normally the lapping of reinforcement bars shall be by mechanical means satisfying the requirements of IS:456. However, in case of congestion of reinforcement the welding of reinforcement may be adopted with special approval of Engineer.

Welding of mild steel reinforcement bars conforming to IS:432 (Part-I) and shall be done in accordance with IS: 2751"Code of Practice for Welding of Mild Steel Bars used for Reinforced Concrete construction".

All reinforcements shall be accurately fixed and maintained in positions as shown on the drawings and by adequate means like mild steel chairs and/or concrete spacer blocks as required. Bars intended to be in contact at crossing points, shall be securely tied together at all such points by 20G annealed soft steel wire or by tack welding in case of bars larger than 25mm dia, as may be directed by the Engineer. Binders shall tightly embrace the bars with which they are intended to be in contact and shall be securely held. The vertical distance between successive layer bars shall be maintained by provision of mild steel spacer bars. They should be spaced such that the main bars do not sag perceptibly between adjacent spacers. The binding wires shall be soft annealed black wire.

Clear cover shall be as specified in the drawings. If nothing is specified in the drawing the clear cover shall be in accordance with the relevant clause of IS 456.

▪ **Shuttering**

1) **General**

All shuttering, formwork, supports and staging shall be designed by the Bidder and be subject to approval by the Engineer. The Bidder shall submit drawings and calculations to the Engineer for scrutiny when called upon to do so. The Bidder shall be responsible for the correctness and strength of the formwork including its supports and centering and approval by the Engineer will not relieve him of responsibilities.

The staging and supports may be of round or sawn timber or tubular or other shapes in steel. Round timber shall preferably extend over the full height in one piece. These shall be securely jointed or otherwise fastened and spaced at suitable intervals as the design may warrant and shall be suitably braced at regular intervals horizontally and diagonally.

The formwork shall be of steel plate on steel frame, wooden boards with steel sheet lining, or plywood or seasoned timber board. For ornamental and curved surfaces, the material shall be very good seasoned timber or plywood.

The shuttering shall conform to the shapes, lines, levels and dimensions shown in the drawing. It shall be fixed in perfect alignment and securely braced so as to be able to withstand, without appreciable displacement, deflection or movement of any kind, the weight of all construction, movement of persons and plant. It shall be so constructed as to remain rigid during the placing and compacting of concrete without shifting or yielding and shall be sufficiently water tight to prevent loss of slurry from the concrete.

All props shall be supported on sole plates and double wedges. At the time of removing props these wedges shall be gently eased and not knocked out. The formwork shall be so designed that the sides are independent of the soffits and the side forms can be removed easily without any damage or shock to the concrete.

Wrought shuttering shall be such as to produce a first class fair face on the concrete free from board marks or any other disfigurements. This shall be used for exposed surfaces where specified or directed by the Engineer. It may be made of heavy quality plywood or steel sheets having smooth, plain surface.

The joints in shuttering shall be arranged in a regular pattern approved by the Engineer. Wrought shuttering shall be aligned within a tolerance of 3mm.

Rough shuttering shall be used for all surface of concrete walls, footings etc., which are not exposed in the finished work or which are to receive plaster and as directed by the Engineer. It may be made of timber, ordinary plywood or steel sheets.

Before any concreting is commenced the shuttering shall be carefully examined for dimensional accuracy and safety of construction. The space to be occupied by concrete shall be thoroughly cleaned out to remove rubbish, debris, shavings and saw dust. The surface in contact with concrete shall be coated with an approved substance such as mould oil or other non-staining mineral oil to prevent adhesion. Where necessary the surface shall be wetted

to prevent absorption of moisture from concrete. Care shall be taken to avoid the reinforcements coming in contact with shutter oil.

2) **Removal of Forms**

Removal of forms shall never be started until the concrete has thoroughly set and aged to attain sufficient strength to carry twice its own weight plus the live load that is likely to come over it during construction. Shuttering shall be removed without shock or vibration and shall be eased off carefully in order to allow the structure to take up its load gradually and also without disfiguring the concrete surface.

Walls, columns & vertical faces	24 to 48 hours as may be directed by the Engineer.
Bottom of slab upto 4.5m span	7 days
Bottom of slab above 4.5m span and bottom of beam and arch, rise upto 6m span	14 days
Bottom of beam and arch rise over 6m span	21 days

These periods may be increased at the discretion of the Engineer. Special care shall be taken while striking the shuttering of cantilevered slabs and beams, portal frames etc. Before removing the formwork, the Contractor must notify the Engineer to enable him to inspect the condition of the finished concrete immediately after the removal of the form works.

▪ **TECHNICAL SPECIFICATIONS FOR STRUCTURAL STEEL WORKS**

Scope

Structural steelwork shall include:

Preparation and supply of fabrication drawings, erection drawings, material lists, site-bolt list, As Built drawings and dispatch documents for the steel structures /sheeting's/ glazing, etc in the bidder's scope.

Supply, fabrication, shop painting, finish painting at site, transportation, delivery and storage of all steel structures and sheeting including site bolts, electrodes, sheeting fixtures etc. complete in all respects, erection (including tools, tackles, cranes and any staging or false work required for erection), handling, transport and rectification of damaged structures, fixing, bolting, welding, alignment, levelling etc of all steel structures,

complete in all respects.

Transportation and Storage

All pieces shall be properly identified and bundled for transportation to work site. Care shall be exercised in the delivery, handling and storage of material to ensure that material is not damaged in any manner.

Bolts and inserts shall be securely fixed in position as shown in the drawings, before commencement of concreting. Bolts shall be checked for accuracy in alignment on both the axes.

All threads for bolts and inserts shall be greased at intervals and kept covered to prevent damage.

Transportation and Storage

All pieces shall be properly identified and bundled for transportation to work site. Care shall be exercised in the delivery, handling and storage of material to ensure that material is not damaged in any manner.

Drawings

The Contractor will prepare detailed steel structural fabrication drawings based on design drawing for fabrication within the time schedule as per contract. Necessary number of prints of drawings and documents; as per contract will be submitted. Bill of materials will form part of the fabrication drawings and will be included in the body of the drawing or prepared separately.

▪ **Fabrication of Steel Structures**

1) **Material of Construction**

All steel and other materials used for steelwork and in association with steelwork will conform to appropriate Indian standards. Only tested materials will be used unless written authority is obtained for the use of untested materials for certain secondary structural members.

2) **Method of Construction**

The method of construction will be either by welding or by bolting limiting the site work to the minimum possible.

3) **Structural Steel Connection**

The Contractor will be responsible for the design and the detailing of all connections. The design of connections will provide for adequate strength for the transfer of force in the structural elements indicated on the design drawings. For purposes of detailing of connections, the allowable stresses in material, bolts and welds will be as per IS: 800 and IS: 816 or as specified in the design drawings.

4) **Fabrication**

Fabrication of all structural steelwork will be in accordance with IS:800 or their equivalent foreign national standard of the country of origin of supply unless otherwise specified, and in conformity with various clauses of this Specification.

- **Erection of Steel Structures**

- 1) **General**

The erection of steel structures includes erection and transport of tools and tackles, consumables, materials, labour and supervision in addition to the following:

- a) Storing and stacking at site of erection of all fabricated structural components/ units/assemblies till the time of erection.
- b) Transportation of structures to site.
- c) Receiving at site of structures including site handling /movement, unloading, storing and stacking at site of erection of technological structures such as bunkers and the related structures
- d) All minor rectification/modification such as:
 - i. Removal of bends, kinks, twists, etc. for parts damaged during transport and handling;
 - ii. Cutting chipping, filing, grinding, etc., if required, for preparation and finishing of site connections;
 - iii. Reaming for use of next higher size bolt for holes which do not register or which are damaged.
 - iv. Welding of connections in place of bolting for which holes are either not drilled at all or wrongly drilled during fabrication.
- e) Fabrication of minor items/missing items or such important items as directed by the Owner Consultant.
- f) Assembly at site of steel structural components wherever required including temporary supports and staging.
- g) Making arrangements for and providing all facilities for conducting ultrasonic X-ray or gamma ray tests on welds; getting the tests conducted by reputed testing laboratories, making available test films/ graphs, reports and interpretation.
- h) Rectifying at site, damaged portions of shop primer by cleaning and touch-up paint.
- i) Erection of structures including making connections by bolts/high strength friction grip bolts/weldings.
- j) Alignment of all structures true to line, level plumb and dimensions within specified limits of tolerances as per IS code IS:12843 "Tolerance for Erection of Steel Structures".
- k) Application of second coat of primer paint and two coats of finishing paint at site after erection.
- l) Supply of labour in sufficient numbers, where necessary, as directed by the Owner / Consultant.
- m) Conducting preliminary acceptance and final acceptance tests.
- n) Preparation of as built drawings, preparing of sketches/drawings to suit availability of material, convenience of fabrication, transportation and erection and changes during fabrication and erection.

- 2) **Storing and Handling**

The fabricated materials on receipt at site will be carefully unloaded, examined for defects, checked, stored out for each building and stacked securely on skids above level ground which will be kept clean and properly drained. The fabricated materials will be verified with respect to markings on the marking plan or shipping list which will be supplied by the Contractor.

Any material found damaged or defective will be stacked separately and the damaged or defective portions will be painted in distinct colour for identification. Such materials will be dealt with as ordered by the Owner / Consultant. No member slightly bent or twisted will be put in place until the defects are corrected. Members seriously damaged in handling will be rejected.

3) **Painting after erection**

The painting will be as per painting specifications and instructions given on the drawings.

4) **Acceptance of work**

Acceptance of erected steel structures will be either after completion of erection of the whole building or in blocks.

5) **Painting of Building Steel Structures**

All steel structural work will be painted as follows unless otherwise stated in the drawings.

The steel surface which is to be painted will be cleaned of dirt and grease, and the heavier layers of rust will be removed by chipping prior to actual surface preparation to a specified grade. All paints will be of approved make and shade.

Application of paint will be by spraying or brushing as per IS: 486 and IS: 487 and in uniform layers of 50% overlapping strokes by skilled painters. Painting will not be done when the temperature is less than 5 degree C or more than 45 degree C and relative humidity is more than 85%; unless manufacturer's recommendations permit. Also painting will not be done in foggy weather. During application, paint agitator must be provided where such agitator is recommended by the manufacturer.

Painting will be applied at painting manufacturer's recommended rates. The number of coats will be such that minimum dry film thickness specified is achieved. The dry film thickness (DFT) of painted surfaces will be checked with ELCOMETER or measuring gauges to ensure specified DFT.

All structures will receive one coat of primer paint at shop after fabrication before despatch after surface preparation has been done as per requirements. Unless otherwise specified all structures after erection will be given one coat of primer and two coats of finishing paint of approved colour and quality. The under coat will have different tint to distinguish the same from the finishing coat. Edges, corners, crevices,

depressions, joints and welds will receive special attention to ensure that they receive painting coats of required thickness.

Part of steel structures embedded in concrete, will be given a protective coat of portland cement slurry immediately after fabrication after this part is thoroughly cleaned from grease, rust, mill scales etc. No paint will be applied on this part.

Zinc-rich primer paints, which have been exposed several months before finishing coat is applied, will be washed down thoroughly to remove soluble zinc salt deposits. In similar circumstances, the surface of paint based on epoxy resin should be abraded or lightly blast cleaned to ensure adhesion of next coat.

Electrical Work:

Scope of work shall cover the design, manufacture, assembly, testing, supply, delivery including insurance, properly packed for transport to site, storing at site of complete building electrical work and as required for efficient and trouble free operation.

The scope of electrical installation work includes erection, testing, commissioning, and putting into successful commercial operation, cabling work, lightning protection, stringing and connections, illumination systems including supply of erection consumables, hardware, and other material, labour, tools, tackle, etc.

Split Room Air Conditioner with adequate capacity shall be provided in all the rooms for controlled environment in respect of temperature, cleanliness and noise.

Timeline for developing and commercial operation of the facility

The facility should be completed within six (6) months from date of issue of order. If AYCL feels that the Vendor is unduly going slow, AYCL will issue notice to the Vendor to expedite and if required, would give a further extension of time of two (02) months maximum. Even if after that the project is not completed, AYCL may at its discretion terminate the contract without any further notice and forfeit the Security Deposit.

Payment Terms:

- 90% payment will be made on submission and approval of bills on pro-rata basis based on approved Billing schedule.
- Balance 10% will be made after successful completion of the project.

Security Bank Guarantee

The Contractor shall submit Security Bank Guarantee from any Schedule Commercial Bank for 10% of the Contract value valid till completion of the project.

All payment will be made within 30 days from the date of submission of certified bills.

Billing Schedule

The Contractor shall prepare and submit to the owner for approval the item wise Billing schedule (detailed breakdown of contract price) for the total work to be executed within 30 days from the date of receipt of LOI/PO.

Labour Law and Local Regulations

The Contractor shall abide by the prevailing labour laws and shall have to obtain labour license from the appropriate authority as per law at his cost and shall indemnify the Purchaser about his financial and other obligations arising out of labour/workers employed by him. On obtaining the same, the Contractor at appropriate time shall submit certified photocopy of the same to Purchaser. The Contractor and its subcontractor(s) shall possess valid PF & ESI code.

Contractor's Equipment: Tools tackles & Machinery

The Contractor shall provide all construction/erection machinery, tools, tackles and scaffolding required for civil work and fabrication and erection of steel works.

Subcontracting:

The Contractor will have to take written permission from the Purchaser before subcontracting the job elsewhere.

Indicative Bill of Materials

Tentative BOM for the proposed single storied Bungalow (per unit), Approach road, Guard Wall, Water arrangement, Water Tank / Reservoir & distribution, Landscape development in connection of the proposed two nos. of Bungalows at MIM Tea Estate of Andrews Yule Tea Garden in the Dist. of Darjeeling, W.B.

Sl. No. & Page No.	PARTICULARS OF WORK	APPROX. QTY	UNIT
1) P-1 / SI-2	Earth Work in excavation of foundation trenches or drains in all sorts of soil (including mixed soil but excluding laterite soil or sandstone) including removing, spreading or stacking the spoils with in a lead of 75 m as directed. The item includes necessary trimming the sides of trenches, levelling, dressing, and ramming the bottom, bailing out water as required complete. (a) Depth of excavation not exceeding 1.50 M	228.00	Cu.M.
2) P-1 / SI-3	Earth work in filling in foundation and trenches or plinth etc. in layers not exceeding 150 mm including watering and ramming etc. complete .		

	(a) With earth obtained from excavation of foundation .	45.6	Cu.M.
	(b) with earth obtained by fresh excavation (including cost of excavation upto 1.80 m depth from land arranged by Deptt.) Within a lead of 100 m. For plinth filling -	122.4	Cu.M.
3) P- 14 / 1	Single B.F.S. of picked jhamma bricks including ramming and dressing bed to proper level and filling joints with powdered earth or local sand .	368.00	Sq.M.
4) P-34 / SI-22	Cement Concrete (1: 3: 6) with 30 mm down graded stone metal excluding shuttering. (B) With N.B. Variety stone metal -	35.075	Cu. M.

Sl. No. & Page No.	PARTICULARS OF WORK	APPROX. QTY	UNIT
5) P-26 / SI-10	<p>Ordinary Cement Concrete (M-20) 1:1.5:3 with 20 mm down graded stone chips / shingles excluding shuttering and reinforcement if any, in ground floor . As per IS 456 - 2000</p> <p>(B) With N.B. Variety stone metal -</p>	42.602	Cu. M.
6) P-42 / SI-36	<p>Hire and labour charges for shuttering with centering and necessary centering and necessary staging upto 4.0 m staging upto 4.0 m using approved stout props & thick hard wood planks of approved thickness with required bracing for concrete slabs, beams, columns, lintels, curved or straight including fitting fixing and striking out after completion of works (upto roof of Ground floor) .</p> <p>(a) 25 to 30 mm thick wooden shuttering without staging in foundation .</p>	507.00	Sq.M.
7) P- 43 & Sl. - 40	<p>Reinforcement for reinforced concrete work in the all sorts of structures including distribution bars, stirrups, binders etc. including supply of rods, initial streaghtening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction .</p>		

	(a) For works in foundation, basement and upto roof of ground floor / upto 4.0 m . (i) Tor Steel / Mild steel (Tata / SAIL)	52.5	Quinte I
8) P-15 / SI-08	Brick work with 1 st class bricks in cement mortar (6 : 1) . (a) In foundation & plinth	15.20	Cu. M.
9) P- 16 / 16	125 mm thick brick work with 1st class bricks in cement mortar (4 : 1) in ground floor .	304.00	Sq.M.
10) P-114 / SI-01	Wood work in door and window frame fitted and fixed complete including a protective coat of painting at the contact surface of the frame . (b) Sal : Siliguri	1.36	Cu. M.
11) P- 117 / 01	Panel shutters of door and window as per design (each panel consisting of single plank with joint) including fitting and fixing the same in position but excluding the cost of hinges and other fittings. (ii) 40 mm thick shutters with 19 mm thick panel (b) Sishu, Gamar, Champ,Badam,Bhola, Mogra, Hallak.	20.38	Sq.M.

Sl. No. & Page No.	PARTICULORS OF WORK	APPROX. QTY	UNIT
12) P- 119 / 04	<p>Glazed shutters of doors, windows, fan light, clerestory windows etc. as per design (with ordinary glass of 7.4 kg. / sq.M, 3 mm thick) fitted with putty bed and teak wood bead and nails including fitting and fixing shutter in position but excluding the cost of hinges and other fittings in ground floor .</p> <p>(i) 40 mm thick shutters</p> <p>(b) Sishu, Gamar, Champ, Badam etc .</p>	22.88	Sq.M.
13) P- 134 / 26	<p>Supplying fitting and fixing of P.V.C. door shutter of approved quality and shade The maximum wall thickness being 01 mm + 0.3 mm . Providing with conceded wood reinforcement of size of 22 mm x 18 mm . The infill is made out of multichamber hollow from extruded panel having an effective dimension of 200 mm x 20 mm . The panels are providing with supporting ribar distance of not more than 40 mm . The panels are joined bt tongue and groove method . The cost consisting of supply of materials including tools and plants taxes etc. and excluding the cost of hinges, socket and bolt and door fittings .</p>	7.25	Sq.M.
	<p>(a) 37 mm thick shutter with 20 mm thick panel (Wall thickness 1.20 mm) and 90 mm width styles and rails with lock rail 105 mm .</p>		

<p>12) P-100 & Sl. - 02</p>	<p>M.S. structural works in roof trusses with Tubular sections conforming to IS: 806 - 1957 & IS :1161-1958 connected to one another with bracket, gusset, cleats as per design, direction of Engineer In Charge complete including cutting to requisite size, fabrication with necessary metal are welding conforming to IS : 816 - 1956 & IS : 9595 using electrodes of approved make and brand conforming to IS : 814 - 1957, haulage, hoisting, and erection all complete . The rate includes the cost of rolled steel section, consumables such as electrodes, gas and hire charges of all tools and plants and labour required for the work including all incidental charges such as electricity charges, labour insurance charges etc</p> <p>(a) For trusses spanning upto 12.0 M</p>	<p>15.00</p>	<p>Quinte I</p>
<p>13) P-81 & Sl. - 09</p>	<p>Galvanized corrugated iron sheet work (excluding the supporting frame work) fitted and fixed with 10 mm dia. J or L hook bolts, limpet and bitumen washers and putty complete with 150 mm end lap & one corrugation minimum side lap complete.</p> <p>(i) In roof (b) With 0.63 mm thick sheet</p>	<p>275.00</p>	<p>Sq.M</p>
<p>14) P-81 & Sl. - 10</p>	<p>Galvanised Iron sheet ridging (with 225 mm end lapping) fitted and fixed with necessary hook, bolts, nuts, washers etc. complete</p> <p>(b) With 0.63 mm sheet x 300 mm laping -</p>	<p>25.00</p>	<p>R.M</p>

Sl. No. & Page No.	PARTICULARS OF WORK	APPROX. QTY	UNIT
15) P-189 / SI-01	<p>Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and racking out joints or roughening of concrete surface including throating, nosing and drip course where necessary in G. floor .</p> <p>(i) With (6 : 1) cement mortar</p> <p>(b) 20 mm thick plaster</p> <p>(c) 15 mm thick plaster</p>	<p>400.00</p> <p>180.00</p>	<p>Sq. M</p> <p>Sq. M</p>
16) P-140 & Sl. - 04	<p>Supplying, fitting & fixing of M.S. clamp for fixing door and window frame made of flat bent bar, end bifurcated, fixed in cement concrete with stone chips (4::2:1) fitted and fixed complete as per direction .</p> <p>(b) 40 mm x 6 mm above 200 mm length</p>	<p>144.00</p>	<p>Nos.</p>
17) P-191 & Sl. - 20	<p>Iron butt hinges of approved quality fitted and fixed with steel screws with ISI mark .</p> <p>(b) 75 mm x 40 mm x 1.12 mm</p> <p>(f) 100 mm x 58 mm x 1.90 mm</p>	<p>108.00</p> <p>48.00</p>	<p>Nos.</p> <p>Nos.</p>

<p>18) P-197 & Sl. - 25</p>	<p>Anodised aluminium barrel / tower / socket bolt (full covered) of approved quality manufactured from extruded section conforming to I.S. 204 / 74 fitted and fixed with cadmium plated screws :</p> <p>(c) 150 mm long x 10 mm dia. Bolt</p> <p>(d) 300 mm long x 10 mm dia. Bolt</p>	<p>62.00</p> <p>20.00</p>	<p>Nos.</p> <p>Nos.</p>
<p>19) P- 145 & Sl. - 28</p>	<p>Anodised aluminium Aldrop / Sliding bolts of approved quality manufactured from extruded section conforming to I.S. : specification 2681 / 66 fitted and fixed complete</p> <p>(d) 300 mm x 19 mm dia. Bolt</p>	<p>4.00</p>	<p>No.</p>
<p>20) P-145 & Sl. - 30</p>	<p>Anodised aluminium D - Type handle of approved quality manufactured from extruded section conforming to IS specification (IS 230 / 72) fitted and fixed complete .</p> <p>(a) With continuous plate (round rod)</p> <p>(v) 125 mm grip x 12 mm dia. Rod</p>	<p>57.00</p>	<p>No.</p>
<p>21) P- 144 & Sl. - 25</p>	<p>Supplying anodised aluminium catch hook with eye fitted and fixed to shutter and chowkat complete of best quality .</p> <p>(d) 300 mm x 19 mm dia. Bolt</p>	<p>66.00</p>	<p>No.</p>
<p>22)</p>	<p>Neat cement punning about 1.50 mm thick in wall, Dado, window sills, floor, drain etc. Cement to be used 0.152 Cu.M per 100 Sq.M</p>		

P-323 & Sl. - 8		45.00	Sq. M
Sl. No. & Page No.	PARTICULORS OF WORK	APPRO X. QTY	UNIT
23) P-162 & Sl. - 07	Ceiling with 12mm thick wooden planks fitted and fixed complete (excluding the supporting framework) as per direction of the Engineer-in-charge. (b) Sishu / Champ / Badam / Gamar / Bhola / Mogra / Hallak -	150.00	Sq.M.
24) Page- 181 & Sl. - 3 B	Dressed wood work in posts, post plates, rafter, battens, truss, members, purlins, wall etc. fitted and fixed complete (Excluding the cost of bolts only, but including the cost of nails, screw etc) (ii) Sal : Local wood -	1.50	Cu.M.
25) P- 190 & Sl. - 10 a	M.S. ornamental grill of approved design joints continuously welded with M.S. or W.I. Flats and bars for windows, railing etc. fitted and fixed with necessary screws and lugs in ground floor (a) Grill weighing above 10 Kg / Sq.M and upto 16 Kg / Sq.M	5.00	Qnt
26)	Marble flooring 20 to 25 mm thick tiles set in lime mortar (2:1) or cement mortar (2:1) including levelling course with same mortar as required including grinding and polishing as per direction of Engineer-In-Charge)		

<p>P-55 & Sl. - 22</p>	<p>(a) With Makrana white / Makrana Doongri / Adranga / Makrana plain pink / Garbh Gulabi / udaypur pink / Udaypur green / Black Bhaslana .</p> <p>(iii) Area of each tile exceeding 0.30 Sq.M but not exceeding 0.60 Sq.M .</p>	<p>46.00</p>	<p>Sq. M</p>
<p>27) P-66 & Sl. - 36</p>	<p>Supplying and laying true to line and level Vetrified tiles of approved brand (size not less than 600 mm x 600 mm x 10 mm thick) in floor, skirting etc. Set in 20 mm sand cement mortar (1:4) and 2 mm thick cement slurry back side of tiles using cement @ 2.91 kg / sq.m or using polymerised adhesive (6 mm thick layer applied directly over finished artificial stone floor / mosaic etc. without any backing course) laid after application slurry using 1.75 kg of cement per sq.m below mortar only , joints grouted with admixture of white cement and colouring pigment to match with colour of tiles / epoxy grout materials of approved make as directed and removal of wax coating of top surface of tiles with warm water and polishing the tiles using soft and dry cloth upto mirror finish complete including the cost of materials, labour and all other incidental charges complete true to the manufacturer's specification and direction of Engineer-in-Charge .</p>	<p>135.00</p>	<p>Sq. M</p>

	(I) With application slurry @ 1.75 kh / Sq.M , 20 mm sand cement mortar (1:4) & 2 mm thick cement slurry at back side of tiles, 0.20 kg / sq.m white cement for joint filling with pigment .		
Sl. No. & Page No.	PARTICULORS OF WORK	APPROX. QTY	UNIT
28) P-64 & Sl. - 35	Supplying, fitting & fixing best quality digital printed Ceramic tiles in coloured decorative on walls and floors to match with the existing work & 4 nos. key stones (10mm) fixed with adhesive 4.5 mm thick at the back of each tile & finishing the joints with white cement mixed with colouring oxide if required to match the colour of tiles including roughening of concrete surface, if necessary or by synthetic adhesive & grout materials etc. With polymerised adhesive and epoxy grout pointing including spacer - 2mm (When tiles are laid over existing hard ready surface) all complete as per direction of Engineer-in-charge. (a) Area of each tile upto 0.09 Sq.m with coloured decorative	82.00	Sq. M
29) P-200 & Sl. - 1	Priming one coat on timber, plastered or on steel or other metal surface with synthetic enamel / oil bound primer of approved quality including smoothing surfaces by sand papering etc . (a) One coat -	250.00	Sq.M.
30) P-200 & Sl. - 2 A	Painting with best quality synthetic enamel paint of approved make and brand including smoothing surface by sand papering etc. including using of approved putty etc. on the surface if necessary		

	(a) On Timber or plaster surface (iv) Two coats (with any shade except white)	250.00	Sq.M.
31) P-194 / SI-03	White washing including cleaning and smoothening surface thoroughly (5 parts of stone lime and 1 part of shell lime should be used in the finishing coat) . (c) Three coats -	300.00	Sq.M.
32) P-24 / SI-04	Ordinary Cement Concrete M 15 (mix 4: 2: 1) with 20 mm down graded stone chips / shingles excluding shuttering and reinforcement if any, in ground floor . (a) River Bazree -	47.00	Cu. M.
33)	Hire of the JCB or any Machinery tools including lubricants etc. for Cutting earth, Filling earth, Levelling of the earth in connection of making approach road and Parking area .	7Days	L. S.
34)	Landscape development in hilly area by Unskilled worker and carrying the soil by head loads	L. S.	L..S.
35)	Water arrangement from the source of Hill area to proposed Reservoir and distribution of water from reservoir to bungalows water tank including the cost of Pipe, Tank and other materials etc. in all complete .		

				L. S.	L..S.
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Bill of material of Electrical items for the proposed Bungalow (per unit) at Mim Tea Estate

SL NO	Name of the items with Specification	Size	Make	Approx. Qty
1	Multi Stand Copper wire(90 Mtr)	4.00 sq. mm	Havells or equivalent ISI Mark	15 coil
2	Multi Stand Copper wire(90 Mtr)	2.5 sq. mm	Havells or equivalent ISI Mark	12 coil
3	Multi Stand Copper wire(90 Mtr)	1.5 Sq.mm	Havells or equivalent ISI Mark	4 coil
4	Multi Stand Copper wire(90 Mtr)	1.00 Sq.mm	Havells or equivalent ISI Mark	10 coil
5	Multi Stand Copper wire(90 Mtr)	0.75 Sq.mm	Havells or equivalent ISI Mark	8 coil
6	PVC Casing Bit	1"	Ajanta Plus or equivalent ISI Mark	150 pc
7	PVC Gutka	1"	ISI	20 pkt
8	Wooden Screw	1"	ISI	15 pkt
9	Wooden Screw	1 ½"	ISI	10 pkt
10	Modular Switch	6 AMPS	Havells or equivalent ISI Mark	45 pcs
11	Modular Switch	16 AMPS	Havells or equivalent ISI Mark	15 pcs
12	Modular Socket	6 AMPS	Havells or equivalent ISI Mark	14 pcs
13	Celling Rose		Gold Medal or equivalent ISI Mark	15 pcs

14	Angle Holder		Gold Medal or equivalent ISI Mark	23 pcs
15	PVC Square Box	4"x 4"	Ajanta Plus or equivalent ISI Mark	70 pc
16	Modular Socket	16 AMPS	Havells or equivalent ISI Mark	30 pcs
17	BTC Aluminum wire	25 sq.mm	Havells or equivalent ISI Mark	30mtr
18	3 Modular-16A PVC Box with plate with SS combine	16 AMPS	Havells or equivalent ISI Mark	15 pcs
19	3 Modular 6A PVC Box With plate with SS combine	6 AMPS	Havells or equivalent ISI Mark	14 pcs
20	Copper Earthing wire	No 10	ISI	10 kgs
21	C.I Earthing pipe		ISI	2 pcs
22	Multi Stand Copper wire	6 Sq.mm	Havells or equivalent ISI Mark	1 coil
23	LED Flood Light	30 watt	Havells or equivalent ISI Mark	4 pcs
24	PVC Flexible Pipe	1"	ISI	10 mtrs
25	M.S. MCB Box (IP43,Metal Door)	16 ways	Siemens or equivalent ISI Mark	2 pcs
26	MCCB TPN (16 KA)	100 AMPS	Siemens or equivalent ISI Mark	1 pcs
27	S.P MCB	32-40 AMP	Siemens or equivalent ISI Mark	30 pcs
28	Copper Lug (H. Duty)	10 sq. mm	ISI	8 pcs
29	Copper Lug (H. Duty)	25 Sq. mm	ISI	8 pcs
30	Nylon Cable tie		ISI	6 pkt
31	LED Tube Light	20 watt	Havells or equivalent ISI Mark	15 pcs

32	Insulation Tap		ISI	24 Pcs
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**Electrical distribution details of the proposed Bungalow
(per unit) at Mim Tea Estate:-**

Category of Room/Area	No of LED Tube	No of Angle Holder	No of 16A S.S Combine	No of 6A S.S Combine	Any Other
Tea Testing Area	2	1	1	2	
Dining Area	2	2	2	2	
Drawing Room	2	2	2	2	
Kitchen	2	2	3	Nil	
Rest Room	1	2	Nil	2	
Bed Room No 1,2 & 3	2 each	2 each	1 each	1 each	
Toilet	Nil	2 each	1 each	Nil	
Exterior	Nil	Nil	Nil	Nil	LED Flood light-4 nos at each corner

Bill of Materials for the plumbing items for the proposed Bungalow (per unit)-Mim Tea Estate

SL NO	Name of the items with Specification	Size	Make	Approx. Qty
1	UPVC PIPE 10' long 80 Schedule	2"	ISI/Finolex	30
2	UPVC Ball Valve	2"	ISI/Finolex	11

3	UPVC 'T'	2"	ISI/Finolex	20
4	UPVC Half bend	2"	ISI/Finolex	20
5	UPVC L-bow	2"	ISI/Finolex	50
6	UPVC -T	2" x 3/4"	ISI/Finolex	15
7	UPVC Tank nipple	2"	ISI/Finolex	12
8	UPVC Socket	2"	ISI/Finolex	62
9	UPVC Union	2"	ISI/Finolex	20
10	UPVC MTA	2"	ISI/Finolex	10
11	UPVC FTA	2"	ISI/Finolex	15
12	UPVC End Cap	2"	ISI/Finolex	18
13	CPVC 10'Pipe, 80 Schedule	3/4"	ISI/Finolex	35
14	CPVC Brass L-Bow	3/4"x1/2"	ISI/Finolex	72
15	CPVC Plain L-Bow	3/4"	ISI/Finolex	100
16	CPVC Plain Socket	3/4"	ISI/Finolex	30
17	CPVC MTA	3/4" x 1/2"	ISI/Finolex	41
18	CPVC FTA	3/4" x 1/2"	ISI/Finolex	50
19	CPVC Pass over bend	3/4"	ISI/Finolex	28
20	CPVC Half bend	3/4"	ISI/Finolex	20
21	CPVC Transition brass	3/4"	ISI/Finolex	15
22	CPVC End Cap	3/4"	ISI/Finolex	6

SL NO	Name of the items with Specification	Size	Make	Approx. Qty
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23	CPVC China Clamp	¾"	ISI	200
24	CPVC Conseal Stop Cock	½" x ¾"	ISI/Finolex	6
25	CPVC Ball valve	¾"	ISI/Finolex	18
26	CPVC Thread (Teflon)Tap		ISI	50
27	CPVC Solvent Cement	236 ml	ISI	12
28	UPVC Solvent Cement	236 ml	ISI	12
29	CPVC Plain 'T'		ISI/Finolex	35
30	Connection Pipe	24"	ISI	21
31	Hole tight	500 gm	ISI	4
32	Basin Mixture		ISI	5
33	Overhead Shower		Jaguar	4
34	Basin	26" x 16"	ISI	6
35	Angle cock	½"	Jaguar	12
36	Steel Sink	24" x 18'	ISI	1
37	Self Fitting	26"	Jaguar	4
38	Soap Dish (Steel)		Jaguar	6
39	PVC Tank	1000ltrs	ISI	2
40	Wall Mixture	½"	Jaguar	4
41	UPVC MABT	¾"	ISI/Finolex	15
42	CPVCFABT	¾"	ISI/Finolex	15
43	Waste Couplink		ISI	3
44	Waste Pipe		ISI	3
45	Fastner		ISI	3
46	Screw	1½"	ISI	2

47	PVC Gutka	1½''	ISI	1
48	Electric geyser	10 ltrs		4
49	WC with cistern arrangements			4
50	Wall Mirror	2'x1.5'		4
51	Alkathene Pipe	¾''		5 KM
52	Help Process			4
53	Towel Rod			6

The prospective bidders are requested to visit site & assess the actual quantum of job involvement before submission of the Price offer.

Disclaimer

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization. Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any eccentricity/restriction arising in the bidding process due to these ATCs and due to modification of technical specifications and/or terms and conditions governing the bid. Any clause incorporated by the Buyer such as demanding Tender Sample, incorporating any clause against the MSME policy and Preference to make in India Policy, mandating any Brand names or Foreign Certification, changing the default time period for Acceptance of material or payment timeline governed by OM of Department of Expenditure shall be null and void and would not be considered part of bid. Further any reference of conditions published on any external site or reference to external documents/clauses shall also be null and void. If any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations. Also, GeM does not permit collection of Tender fee / Auction fee in case of Bids / Forward Auction as the case may be. Any stipulation by the Buyer seeking payment of Tender Fee / Auction fee through ATC clauses would be treated as null and void.

[This Bid is also governed by the General Terms and Conditions](#)

In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

---Thank You---