NATIONAL COMPETITIVE BID (NCB)
OPEN TENDER

BHRATIYA RESERVE BANK NOTE MUDRAN (P) Ltd
NOTE MUDRAN NAGAR
MYSORE-570003
Phone:0821-2582905, 2582915, 2582925, 2582935, 2582945
Fax: 0821-2582099, E-Mail:mysorepress@brbnmpl.co.in
Website:www.brbnmpl.co.in

Not Transferable

Security Classification: Non Security

Standard Bidding Document (SBD)
(Procurement of Goods and Services)

Tender Document for Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru.

Tender No: 084 /MYS/IFP/2018-19 dated 05/10/2018

This tender document contains: 142 pages including drawing (one page).

The tender document is sold to:

M/s. _____

Address _____

_____

Details of Contact person in BRBNMPL regarding this tender:

Name: i) A. R. Hegde, Deputy General Manager
Phone: 0821 – 2469025, Fax: 0821-2582955
Email : arhegde@brbnmpl.co.in

ii) T.R. Gururaj, Deputy General Manager-PP
Phone: 0821 – 2469066,
Email: trgururaj@brbnmpl.co.in

Architects:
M/S Enarc Consultants
M. G. Road, Thrissur-1

Note: All Official correspondences related to above tender are to be address to the head of Unit along with tender reference No as follows;

Address:
The General Manager,
Bharatiya Reserve Bank Note Mudran Private Limited
Note Mudran Nagar, Mysuru
Pin- 570003, Karnataka
Phone No. 0821-2582915/2582925, 2582935, 2582945; Fax: 0821-2582099

CONTENTS OF THIS TENDER ENQUIRY: (In SBD Format)

Tender Clause / Section Reference	Tender Clause Description	Remarks
Section I	Notice Inviting Tender (NIT)	Enclosed
Section II	General Instructions for Tenderer (GIT)	Enclosed
Section III	Special Instructions to Tenderers (SIT)	Enclosed
Section IV	General Conditions of Contract (GCC)	Enclosed
Section V	Special Conditions of Contract (SCC)	Enclosed
Section VI	List of Requirements	Enclosed
Section VII	Technical Specification	Enclosed
Section VIII	Quality Control Requirements /Compliance Statement by Tenderer	Enclosed
Section IX	Qualification/Eligibility Criteria	Enclosed
Section X	Tender form	Enclosed
Section XI	Price Schedule (Price Bid)	Enclosed
Section XII	Questionnaire /Checklist	Enclosed
Section XIII	Bank Guarantee Form for EMD	*Not Applicable to this tender.* Required DD is to be submitted as EMD as mentioned in section-I (Notice Inviting Tender-NIT)
Section XIV	Manufacturer‘s Authorization Form	*Not applicable to this tender*
Section XV	Bank Guarantee Form for Performance Security / SD	Enclosed
Section XVI	Contract Form	Enclosed
Section XVII	Letter of Authority for attending a Bid Opening	Enclosed
Section XVIII	Shipping arrangement for liner cargo-	*Not applicable to this tender*
Section XIX	Proforma of Bills for Payments	Enclosed
Section XX	Proforma for Financial Turnover for last 03 years certified by CA	Enclosed
Section XXI	Pre contract Integrity Pact	*Not applicable to this tender*
Annexure	Drawing	Enclosed

Tel दूरभाष : EPABX LINES - (0821) - 2582905
2582915, 2582925
2582935, 2582945
Fax फैक्स : (0821) - 2582099
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Website वी-साईट : www.brbnmpl.co.in

ISO 9001 - 2008,
ISO14001-2004
COMPANY

भारतीय रिज़र्व बैंक
नोट मुद्रण (प्रा.) लिमिटेड
(भारतीय रिजर्व बैंक की संपूर्ण स्वामित्ववाली सहायक कम्पनी)
नोट मुद्रण नगर, मैसूर - 570 003.
By Speed post
BHARATIYA RESERVE BANK
NOTE MUDRAN (P) LIMITED
(Wholly owned subsidiary of Reserve Bank of India)
NOTE MUDRAN NAGAR, MYSORE - 570 003.

SECTION- I: NOTICE INVITING TENDER (NIT)

BNM No.: / (M) 24.02.02/2018-19 Dated: 05/10/ 2018

M/s

TENDER NO: 084 / MYS/ I F P/ 2018 - 19

Sub: Tender Document for Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru.

Dear Sir/Madam,

Sealed tenders in TWO parts (Part-I - Technical and Part-II Commercial (Price) bid) are invited for **"Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru".**

Schedule No.	Brief Description of Goods / Services	Quantity (with unit)	Earnest Money Deposit	Remarks
1	**Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru** As per Bill of quantities and scope of work mentioned at Section-VI, VII, & XI.	As per BOQ	**Rs. 1,90,500 /-** (Rupees One Lakh Ninety Thousand Five Hundred only)	Estimate Value: **Rs. 95,25, 000 /-** (Rupees Ninety Five Lakhs Twenty Five Thousand only)

SALIENT FEATURES OF TENDER FORM

Sl.No.	Description	Details
1.i	Tender No.	**TENDER NO: 084/ MYS/ IFP/2018 - 19**
ii	Tender Date	**05/10/2018**
iii	Name of the Work	**Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru.**
iv	Estimated Value	**Rs. 95,25, 000 /-** (Rupees Ninety Five Lakhs Twenty Five Thousand only)
v	Earnest Money deposit	Rs. **1,90,500** /- (Rupees One Lakh Ninety Thousand Five Hundred only) in the form of DD favouring Bharatiya Reserve Bank Note Mudran Pvt. Ltd, Mysuru. Payable at Mysuru. In case E.M.D is not submitted along with the tender (Technical Bid), the offer will be liable for rejection. However, please note DGS&D / NSIC, New Delhi registered firms are exempted from submission of requisite EMD. Such Tenderer shall submit copy of supporting documents.
vi	Cost of Tender Form	Rs. 500 /- (Rupees Five Hundred Only) (Non Refundable) in the form of DD favoring Bharatiya Reserve Bank Note Mudran Pvt. Ltd, Mysuru. Payable at Mysuru.
vii	Last date of sale of tender forms	One day before the last date of submission and closing of tenders up to 14. 00 Hrs. (Incase, holiday falls on that day, it shall be last working day).
viii	Last date of submission/ closing of the tenders	**14. 30 hrs. on 07/11/2018**
ix	Nominated Person / Designation to Receive Bulky Tender (Clause 21. 21. 1 of GIT)	Shri. P. Anbazaghan, Manager (Ink factory)
x	Date of opening of Technical bid	**15. 00 hrs. on 07/11/2018**
xi	Date of opening of price bid	Shall be communicated to the eligible bidders.
xii	Validity of tender	120 days from the date of opening of the tender, which can be further extended for another 30 days.
xiii	Date of Commencement	Within Two weeks from the date of issue of LOI/ Work Order, whichever is earlier.
xiv	Period of completion	Within 08 (Eight Months) months from the date of award of work.
xv	Liability compensation for delay	At the rate of 0.5 % (half percent) of the incomplete contract value per week of delay, up to maximum of 10 % (Ten percent) of the delayed contract value after which the contract stands rescinded.
xvi	Defects Liability period	12 months from the date of work completion.
xvii	Minimum value of work for each R/ A bill	Rs. 25. 00 Lakhs (Rupees Twenty Five Lakhs only) for completed works.
xviii	Performance Security deposit/ Bond to be deposited within 21 days after the issue of notification of award of contract by BRBNMPL.	Successful Bidders has to submit DD/B.G. valid up to 60 days after date of completion of all contractual obligations including warranty obligations, as performance security for 10 % (Ten percent) of the tendered amount less Earnest Money Deposit (EMD) in the prescribed format mentioned at Section: XV. **Tenderers who are registered with DGS&D /NSIC should submit an undertaking <u>for payment of SD in case they become L1 firm in bid process</u> and this undertaking letter should be attached to the Technical Bid-Part-I.**

xix	Release of Security Deposit/ Retention Money	After expiry of Defects Liability Period/ Completion of all contractual obligations including warranty obligations, whichever is later.
xx	Period of submitting the final bill by contractor	Maximum period of one month from the date of completion of work.
xxi	Terms of contract and specifications	As per schedule.

2. Interested tenderers may obtain further information about the requirement from the above office. They may also visit our website https://www.brbnmpl.co.in for further details.
3. **Issue of Tender Form:** The issue of Tender Documents is for registered/known vendors only. The bidder should submit the cost of the tender form (Rs.500/-) in the form of DD/Pay Order/ Bankers Cheque and enclosed in the envelope containing Earnest Money Deposit. The offer of the bidders who do not submit the cost of the Tender Document shall be liable for rejection. Issuance of Tender Paper shall not automatically be construed qualification of bidder for award of work, which will actually be determined during Technical Bid evaluation.

4. **Validity of Tender**: The quoted rates shall be valid for a period of 120 days from the date of opening of the tender. However in case of any delay due to genuine reasons, the validity period may be extended further for additional period of 30 days. If any tenderer withdraws his tender before the said period or makes any modification in the Price Bid or terms and conditions of the tender, then, the purchaser, without prejudice to any other right or remedy will be at liberty to forfeit the Earnest Money Deposit.

5. **Tenure of Contract:** The work should be completed as per as per bill of quantities and scope of work within six (08) months from date issue of work order. Any requests for extension of time shall be initiated two weeks before the scheduled completion date citing the reasons for delay.

6. **Contract Price:** The rates quoted in the tender shall include all charges for clearing of site before commencement as well as after completion, water, fencing, hoarding, plant and equipment, storage sheds, watching, and lighting, by night as well as day including, Sundays and holidays, temporary electric supply and plumbing work, etc., as occasion shall require or when ordered to do so, charges incurred for laboratory tests of materials and specimens and arranging for field testing as per the IS provisions and as instructed by the BRBNMPL representatives, and fully reinstate and make good all matters and things disturbed during the execution of work and to the satisfaction of the BRBNMPL . The rate quoted shall be deemed to be for the finished work to be measured at site. The rate quoted shall also be firm irrespective of any variation in quantities of items given in the schedule of items.

7. **Submission of Tender**: Please send your competitive bidding in sealed cover super scribed as **—Tender Document for Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru** against **Tender No. 084/MYS/IFP/2018-19 dated 05/10/2018** to reach us on or before **14. 30 hrs. on 07/11/2018** at BRBNMPL, Mysuru with the following two separate sealed covers:
   a. The First sealed cover super scribed as Technical Bid (Part I) against **Tender No. 084/MYS/IFP/2018-19 dated 05/10/2018** should contain all the documents in support of Quality Control Requirements / Compliance statement by Tenderer Section VIII, Qualification / Eligibility criteria (Section IX) along with supporting documents, Section X: Tender Form, Section XII: Questionnaire, Section XIV: Manufacturer's authorization form (if applicable), brochure and product details etc., of the item being offered. Cost of Tender Form and EMD amount. **No information regarding price should be mentioned in Part I.**
   b. The second sealed cover super scribed as PRICE BID (part II) against **Tender No. 084/MYS/IFP/2018-19 dated 05/10/2018** should contain only Section XI – Price Schedule exactly as per proforma duly filled and signed.
   c. **Submission of tender shall be as under.**
      Envelope – 1 containing Part-I Technical Bid & EMD.
      Envelope - 2 containing Part-II Commercial (Price) Bid.

   Both the sealed envelopes should be put in a **Third** sealed cover super scribed with the name of the work and tender no. with due date of opening as mentioned in the tender form.
   d. BIDS submitted not in accordance with above guidelines will be liable to be rejected.

e. If the sealed tenders are sent by post or courier service, the tenderers shall ensure that the tenders are posted or dispatched sufficiently early so that the tenders are received by the BRBNMPL within the stipulated date and time. BRBNMPL will not be responsible for any delay in post or courier. If the tenders are to be delivered in person at the above address, the sealed tenders shall be deposited before the stipulated date and time, at the aforesaid office. BRBNMPL shall not accept responsibility for late receipt of tenders if delivered in person or sent by post or courier service.

8. Tenderers shall ensure that their tenders, duly sealed and signed, complete in all respects as per instructions contained in the Tender Documents, are dropped in the tender box located at the address given below on or before the closing date and time indicated in the Para 1 above, failing which the tenders will be treated as late and rejected.
9. In the event of any of last day of submission of tender is declared as a holiday/ closed day, the tenders will be received / opened on the next working day at the appointed time.
10. The tender documents are not transferable.

For and on behalf of BRBNMPL

Sd/-

(A. R. Hedge)
Dy. General Manager

Section II: General Instructions to Tenderer (GIT) For Part-I

(Complete details refer our website **www.brbnmpl.co.in)**

Part I: General Instructions Applicable to all Types of Tenders

A PREAMBLE

1. Introduction

1.1 Definitions and abbreviations, which have been used in these documents, shall have the meanings as indicated in GCC.

1.2 For sake of convenience, whole of this Standard Bidding Document (including all sections) is written in reference to Procurement of Goods Tenders. However this SBD would be utilized for all types of Tenders e.g. EOI, PQB, Rate Contract, Tenders involving Samples, Sale / Disposal of Scrap Material and Development / indigenization etc, Procurement of Services etc. Therefore the construction of all clauses are to be interpreted in the context of particular type of tender beyond the letter of the clause, read with the additional clauses for the specific type of tenders in Part II GIT/ GCC.

1.3 These tender documents have been issued for the requirements mentioned in Section - VI - "List of Requirements", which also indicates, inter-alia, the required delivery schedule and terms & place (i.e. destination) of delivery.

1.4 This section (Section II - "General Instruction to Tenderers" - GIT) provides the relevant information as well as instructions to assist the prospective tenderers in preparation and submission of tenders. It also includes the mode and procedure to be adopted for receipt and opening as well as scrutiny and evaluation of tenders and subsequent placement of contract. With this limited objective, GIT is not intended to be complete by itself and the rest of this document - SIT, GCC and SCC in particular may also be thoroughly studied before filling up the Tender Document. There would be certain topics covered in GIT/SIT as well as in GCC/ SCC from different perspectives. In case of any conflict between these, provisions of GCC/ SCC would prevail.

1.5 The tenderers shall also read the Special Instructions to Tenderers (SIT) related to this purchase, as contained in Section III of these documents and follow the same accordingly. Whenever there is a conflict between the GIT and the SIT, the provisions contained in the SIT shall prevail over those in the GIT.

2. Language of Tender

The tender submitted by the tenderer and all subsequent correspondence and documents relating to the tender exchanged between the tenderer and BRBNMPL, shall be written in English or Hindi language, unless otherwise specified in the Tender. However, the language of any printed literature furnished by the tenderer in connection with its tender may be written in any other language provided the same is accompanied by Hindi or English translation. For purposes of interpretation of the tender, the English translation shall prevail.

3. Eligible Tenderers

This invitation for tenders is open to all suppliers who fulfill the eligibility criteria specified in these documents. Please refer to Section IX: Qualification/ Eligibility Criteria

4. Eligible Goods and Services

All goods and related services to be supplied under the contract shall have their origin in India or other countries, subject to any restriction imposed in this regard in Section III (SIT). The term "origin" used in this clause means the place where the goods are mined, grown, produced or manufactured or from where the related services are arranged and supplied.

5. Tendering Expense

The tenderer shall bear all costs and expenditure incurred and/ or to be incurred by it in connection with its tender including preparation, mailing and submission of its tender and for subsequent processing the same. BRBNMPL will, in no case be responsible or liable for any such cost, expenditure etc regardless of the conduct or outcome of the tendering process.

B TENDER DOCUMENTS

6. Content of Tender Documents

6.1 The tender documents includes: as per list mentioned at page 02 above.

6.2 The relevant details of the required goods and services, the terms, conditions and procedure for tendering, tender evaluation, placement of contract, the applicable contract terms and, also, the standard formats to be used for this purpose are incorporated in the above-mentioned documents. The interested tenderers before formulating the tender and submitting the same to BRBNMPL, should read and examine all the terms, conditions, instructions etc. contained in the tender documents. Failure to provide and/ or comply with the required information, instructions etc. incorporated in these tender documents may result in rejection of its tender.

7. Amendments to Tender Documents

7.1 At any time prior to the deadline for submission of tenders, BRBNMPL may, for any reason deemed fit by it, modify the tender documents by issuing suitable amendments) to it.

7.2 Such an amendment will be notified in writing by registered/ speed post or by fax / telex / e-mail, followed by copy of the same by suitable recorded post to all prospective tenderers, which have received the tender documents and will be binding on them.

7.3 In order to provide reasonable time to the prospective tenderers to take necessary action in preparing their tenders as per the amendment, BRBNMPL may, at its discretion extend the deadline for the submission of tenders and other allied time frames, which are linked with that deadline.

8. Pre-Bid conference

If found necessary, a pre-bid conference may be stipulated in the SIT, for clarification/ amendment to Technical specifications/techno-commercial conditions in two bid tender.

9. Clarification of Tender Documents

A Tenderer requiring any clarification or elucidation on any issue of the tender documents may take up the same with BRBNMPL in writing or by fax ! e-mail! telex. BRBNMPL will respond in writing to such request provided the same is received by BRBNMPL not later than twenty one days (unless otherwise specified in the SIT) prior to the prescribed date of submission of tender. Copies of the query and clarification shall be sent to all prospective bidders who have received the bidding documents.

C PREPARATION OF TENDERS

10. Documents Comprising the Tender

10.1 The tender to be submitted by Tenderer shall contain the following documents, duly filled in, as required:

a) Tender Form and Price Schedule along with list of deviations (ref Clause 19.19.4) from the clauses of this SBD, if any.

b) Documentary evidence, as necessary in terms of GIT clauses 3 and 16 establishing that the tenderer is eligible to submit the tender and, also, qualified to perform the contract if its tender is accepted.

c) Documents and relevant details to establish in accordance with GIT clause 17 that the goods and the allied services to be supplied by the tenderer conform to the requirement of the tender documents along with list of deviations if any (ref clause 17.17.3 of GIT).
d) Earnest money furnished in accordance with GIT clause 18.18.1 alternatively, documentary evidence as per GIT clause 18.18.2 for claiming exemption from payment of earnest money. and
e) Questionnaire as per Section XII.
f) Manufacturer's Authorization Form (ref Section XIV, if applicable
NB: The tenderers may also enclose in their tenders, technical literature and other documents as and if considered necessary by them.
10.2 A tender, that does not fulfill any of the above requirements and / or gives evasive information / reply against any such requirement, shall be liable to be ignored and rejected.
10.3 Tender sent by fax/email/ telex/ cable shall be ignored.

11. Tender currencies
11.1 Unless otherwise specified, the tenderer shall quote only in Indian rupees.
11.2 Where the tender condition specifies acceptance of quotations in different currencies, then, for domestic goods, prices shall be quoted in Indian rupees only and for imported goods, prices shall be quoted either in Indian rupees or in the currency stipulated in the SIT, mentioning, inter-alia, the exchange rate adopted for converting foreign currency into Indian Rupees. As regards price(s) for allied services, if any required with the goods, the same shall be quoted in Indian Rupees if such services are to be performed / undertaken in India. Commission for Indian Agent, if any and if payable shall be indicated in the space provided for in the price schedule and quoted in Indian Rupees only,
11.3 Tenders, where prices are quoted in any other way shall be treated as unresponsive and rejected.

12. Tender Prices
12.1 The Tenderer shall indicate on the Price Schedule provided under Section XI all the specified components of prices shown therein including the unit prices and total tender prices of the goods and services it proposes to supply against the requirement. All the columns shown in the price schedule should be filled up as required. If any column does not apply to a tenderer, same should be clarified accordingly by the tenderer.
12.2 If there is more than one schedule in the List of Requirements, the tenderer has the option to submit its quotation for any one or more schedules and, also, to offer special discount for combined schedules. However, while quoting for a schedule, the tenderer shall quote for the complete requirement of goods and services as specified in that particular schedule.
12.3 The quoted prices for goods offered from within India and that for goods offered from abroad are to be indicated separately in the applicable Price Schedules attached under Section Xl.
12.4 While filling up the columns of the price schedule, the following aspects should be noted for compliance:

12.5 For goods offered from within India, the prices in the corresponding price schedule shall be entered separately in the following manner:
a) The price of the goods, quoted ex-factory, ex-showroom, ex-warehouse or off-the-shelf, as applicable, including all taxes and duties like sales tax, VAT, custom duty, excise duty etc. already paid or payable on the components and raw material used in the manufacture or assembly of the goods quoted ex-factory etc or on the previously imported goods of foreign origin quoted ex-showroom etc.
b) Any sales or other taxes and any duties including excise duty, which will be payable on the goods in India if the contract is awarded.
c) Charges towards inland transportation, insurance and other local costs incidental to delivery of the goods to their final destination as specified in the List of Requirements and
d) The price of incidental services, as and if mentioned in List of Requirements.
12.6 For goods offered from abroad, the prices in the corresponding price schedule shall be entered separately in the following manner:
a) The price of goods quoted FAS / FOB port of shipment, CIF port of entry in India or CIF specified place of destination in India as indicated in the List of Requirements,
b) Wherever applicable, the amount of custom duty and import duty on the goods to be imported.
c) The charges for inland transportation, insurance and other local costs incidental to delivery of the goods from the port of entry in India to their final destination, as specified in the List of Requirements. and
d) The charges for incidental services, as and if mentioned in the List of Requirements.

12.7 Additional information and instruction on Duties and Taxes:

If the Tenderer desires to ask for excise duty, sales tax, custom duty etc. to be paid extra, the same must be specifically stated. In the absence of any such stipulation the price will be taken inclusive of such duties and taxes and no claim for the same will be entertained later.

12.8 Excise Duty:
a) If reimbursement of excise duty is intended as extra over the quoted prices, the supplier must specifically say so also indicating the rate, quantum and nature of the duty applicable. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of excise duty will be entertained after the opening of tenders.
b) If a Tenderer chooses to quote a price inclusive of excise duty and also desires to be reimbursed for variation, if any, in the excise duty during the time of supply, the tenderer must clearly mention the same and also indicate the rate and quantum of excise duty included in its price. Failure to indicate all such details in clear terms may result in statutory variations being denied to the tenderer.

c) Subject to sub clauses 12.8 {a) & (b) above, any change in excise duty upward/ downward as a result of any statutory variation in excise duty taking place within original Delivery Period shall be allowed to the extent of actual quantum of excise duly paid by the supplier. In case of downward revision in excise duty, the actual quantum of reduction of excise duty shall be reimbursed to BRBNMPL by the supplier. All such adjustments shall include all reliefs, exemptions, rebates, concession etc. if any obtained by the supplier.

12.9 Sales Tax/ VAT/ CST/ GST:
If a tenderer asks for sales tax/ VAT/ CST/ GST to be paid extra, the rate and nature of such taxes applicable should be shown separately. Such taxes will be pad as per the rate at which it is liable to be assessed or has actually been assessed provided the transaction of sale is legally liable to such taxes and is payable as per the terms of the contract.

12.10 Wherever Value Added Tax is applicable, the following may be noted :
i) The tenderer should quote the exact percentage of VAT that they will be charging extra.
ii) While quoting the rates, tenderer should pass on (by way of reduction in prices) the set off/input tax credit that would become available to them by switching over to the system of VAT from the existing

system of sales tax, duly stating the quantum of such credit per unit of the item quoted for.
iii) The tenderer while quoting for tenders should give the following declaration:
—We agree to pass on such additional set off/input tax credit as may become available in future in respect of all the inputs used in the manufacture of the final product on the date of supply under the VAT scheme by way of reduction in price and advise the purchaser accordingly."
iv) The supplier while claiming the payment shall furnish the following certificate to the paying authorities: We hereby declare that additional set offs / input tax credit to the tune of Rs…….. has accrued and accordingly the same is being passed on to the purchaser and to that effect the payable amount may be adjusted .

12.11 Octroi and Local Taxes:
Unless otherwise stated in the SIT, the goods supplied against contracts placed by BRBNMPL are not exempted from levy of Town Duty, Octroi Duty, Terminal Tax and other Levies of local bodies. In such cases, the supplier should make the payment to avoid delay in supplies and forward the receipt of the same to the purchasing department for reimbursement and, also, for further necessary action.
In cases where exemption is available, suppliers should obtain the exemption certificate from the purchasing department to avoid payment of such levies and taxes.

12.12 Duties/ Taxes on Raw Materials
BRBNMPL is not liable for any claim from the supplier on account of fresh imposition and / or increase (including statutory increase) of excise duty, custom duty, sales tax etc. on raw materials and/or components used directly in the manufacture of the contracted goods taking place during the pendency of the contract, unless such liability is specifically agreed to in terms of the contract.

12.13 Imported Stores not liable to Above-mentioned Taxes and Duties:
Above mentioned Taxes and Duties are not leviable on imported Goods and hence would not be reimbursed.

12.14 Customs Duty:
In respect of imported stores offered from abroad, the tenderer shall specify the rate as well as the total amount of customs duty payable. The tenderer shall also indicate the corresponding Indian Customs Tariff Number applicable for the goods in question.
12.14.1. For transportation of imported goods offered from abroad, relevant instructions as incorporated under GCC Clause 11 shall be followed.
12.14.2. For insurance of goods to be supplied, relevant instructions as provided under GCC Clause 12 shall be followed.
12.14.3. Unless otherwise specifically indicated in this tender document, the terms FOB, FAS, CIF etc. for imported goods offered from abroad, shall be governed by the rules & regulations prescribed in the current edition of INCOTERMS, published by the International Chamber of Commerce, Paris
12.14.4. The need for indication of all such price components by the tenderers, as required in this clause (viz., GIT clause 12) is for the purpose of comparison of the tenders by BRBNMPL and will no way restrict BRBNMPL's right to award the contract on the selected tenderer on any of the terms offered.

13. Indian Agent
If a foreign tenderer has engaged an agent in India in connection with its tender, the foreign tenderer, in addition to indicating Indian agent's commission, if any, in a manner described under GIT sub clause 11.2 above, shall also furnish the following information:

a) The complete name and address of the Indian Agent and its permanent income tax account number as allotted by the Indian Income Tax authority.
b) The details of the services to be rendered by the agent for the subject requirement
One manufacturer can authorize only one agent/ dealer. Also one agent cannot represent more than one supplier or quote on their behalf in a particular tender enquiry. Such quote is likely to be rejected. There can be only one bid from
a) The principal manufacturer directly or one Indian agent on his behalf
b) The foreign principal or any of its branch/ division
c) Indian/ Foreign Agent on behalf of only one Principal.

14. Firm Price / Variable Price
14.1 Unless otherwise specified in the SIT, prices quoted by the tenderer shall remain firm and fixed during the currency of the contract and not subject to variation on any account.
14.2 In case the tender documents require offers on variable price basis, the price quoted by the tenderers will be subject to adjustment during original Delivery Period to take care of the changes in the cost of labour and material components in accordance with the price variation formula to be specified in the SIT. If a tenderer submits firm price quotation against the requirement of variable price quotation, that tender will be prima-facie acceptable and considered further, taking price variation asked for by the tenderer as zero.
14.3 However, as regards taxes and duties, if any, chargeable on the goods and payable, the conditions stipulated in GIT clause 12 will apply for both firm price tender and variable price tender.
14.4 Subject to provisions of Clause 11 above, where prices are quoted in foreign currencies, involving imports - Foreign Exchange Rate Variation (ERV) would be borne by the Purchaser within the original Delivery Period. The offer of the Tenderer should indicate import content and the currency used for calculating import content.
14.5 Base Exchange rate of each major currency used for calculating FE content of the contract should be indicated. The base date of ERV would be contract date and variation on the base date can be given up to the midpoint manufacture, unless firm has already indicated the time schedule within which material will be imported by the firm.
14.6 In case delivery period is refixed/ extended, ERV will not be admissible, if this is due to default of the supplier.

14.7 Documents for claiming ERV:
i. A bill of ERV claim enclosing working sheet
ii. Banker's Certificate/debit advice detailing F.E. paid and exchange rate
iii. Copies of import order placed on supplier
iv. Invoice of supplier for the relevant import order

15. Alternative Tenders
Unless otherwise specified in the Schedule of Requirements, alternative tenders shall not be considered.

16. Documents Establishing Tenderer's Eligibility and Qualifications
16.1 Pursuant to GIT clause 10, the tenderer shall furnish, as part of its tender, relevant details and documents establishing its eligibility to quote and its qualifications to perform the contract if its tender is accepted.
16.2 The documentary evidence needed to establish the tenderer's qualifications shall fulfill the following requirements:
a) In case the tenderer offers to supply goods, which are manufactured by some other firm, the tenderer has been duly authorized by the goods manufacturer to quote for and supply the goods to BRBNMPL. The tenderer shall

submit the manufacturer's authorization letter to this effect as per the standard form provided under Section XIV in this document.

b) The tenderer has the required financial, technical and production capability necessary to perform the contract and, further, it meets the qualification criteria incorporated in the Section IX in these documents.

c) In case the tenderer is not doing business in India, it is/ will be duly represented by an agent stationed in India fully equipped and able to carry out the required contractual functions and duties of the supplier including after sale service, maintenance & repair etc. of the goods in question, stocking of spare parts and fast moving components and other obligations, if any, specified in the conditions of contract and/ or technical specifications.

d) In case the tenderer is an Indian agent quoting on behalf of a foreign manufacturer, the Indian agent is already enlisted under the Compulsory Enlistment Scheme of Ministry of Finance, Govt. of India, operated through Directorate General of Supplies & Disposals (DGS&D), New Delhi.

17. Documents establishing Good's Conformity to Tender document

17.1 The tenderer shall provide in its tender the required as well as the relevant documents like technical data, literature, drawings etc. to establish that the goods and services offered in the tender fully conform to the goods and services specified by BRBNMPL in the tender documents. For this purpose the tenderer shall also provide a clause-by-clause commentary on the technical specifications and other technical details incorporated by BRBNMPL in the tender documents to establish technical responsiveness of the goods and services offered in its tender.

17.2 In case there is any variation and/ or deviation between the goods & services prescribed by BRBNMPL and that offered by the tenderer, the tenderer shall list out the same in a chart form without ambiguity along with justification, and provide the same along with its tender.

17.3 If a tenderer furnishes wrong and/ or misguiding data, statement(s) etc. about technical acceptability of the goods and services offered by it, its tender will be liable to be ignored and rejected in addition to other remedies available to BRBNMPL in this regard.

18. Earnest Money Deposit (EMD)

18.1 Pursuant to GIT clause 10.1(d) the tenderer shall furnish along with its tender, earnest money for amount as shown in the List of Requirements. The earnest money is required to protect BRBNMPL against the risk of the Tenderers unwarranted conduct as amplified under sub-clause 23.23.2 below.

18.2 The tenderers who are currently registered and, also, will continue to remain registered during the tender validity period with DGS&D or with National Small Industries Corporation, New Delhi are exempted from payment of earnest money. In case the tenderer falls in these categories, it should furnish certified copy of its valid registration details (with DGS&D or NSIC as the case may be).

18.3 The earnest money shall be denominated in Indian Rupees.

18.4 The earnest money shall be furnished in one of the following forms:

a) Account Payee Demand Draft or

b) Fixed Deposit Receipt or

c) Banker's cheque or

d) Bank Guarantee, only in the case of Global Tender

The demand draft, fixed deposit receipt or banker's cheque shall be drawn on any scheduled commercial bank in India, in favour of Account specified in the Clause 3 of NIT. in case of bank guarantee, the same is to be provided from/confirmed by any scheduled commercial bank in India as per the format specified under Section XIII in these documents.

18.5 The earnest money shall be valid for a period of forty five days beyond the validity period of the tender.

18.6 Unsuccessful tenderers' earnest monies will be returned to them without any interest, after expiry of the tender validity period, but not later than thirty days after conclusion of the resultant contract. Successful Tenderer's earnest money will be returned without any interest, after receipt of performance security from that tenderer.

18.7 Earnest money of a tenderer will be forfeited, if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. The successful tenderer's earnest money will be forfeited if it fails to furnish the required performance security within the specified period.

19. Tender Validity

19.1 If not mentioned otherwise in the SIT, the tenders shall remain valid for acceptance for a period of 90 days (Ninety days) in case of single bid tender system and 120 days in case of two-bid system after the date of tender opening prescribed in the tender document. Any tender valid for a shorter period shall be treated as unresponsive and rejected.

19.2 In exceptional cases, the tenderers may be requested by BRBNMPL to extend the validity of their tenders upto a specified period. Such request(s) and responses thereto shall be conveyed by surface mail or by fax /email /telex /cable followed by surface mail. The tenderers, who agree to extend the tender validity, are to extend the same without any change or modification of their original tender and they are also to extend the validity period of the EMD accordingly.

19.3 In case the day up to which the tenders are to remain valid falls on/ subsequently declared a holiday or closed day for BRBNMPL, the tender validity shall automatically be extended up to the next working day.

19.4 Compliance with the Clauses of this Tender Document: Tenderer must comply with all the clauses of this Tender Document. In case there are any deviations, these should be listed in a chart form without any ambiguity along with justification.

20. Signing and Sealing of Tender

20.1 An authenticated copy of the document which authorizes the signatory to commit on behalf of the firm shall accompany the offer. The individual signing the tender or any other documents connected therewith should clearly indicate his full name and designation and also specify whether he is signing,

(a) As Sole Proprietor of the concern or as attorney of the Sole Proprietor;

(b) As Partner (s) of the firm;

(c) as Director, Manager or Secretary in case the of Limited Company duly authorized by a resolution passed by the Board of Directors or in pursuance of the Authority conferred by Memorandum of Association.

20.2 The authorized signatory of the tenderer must sign the tender at appropriate places and initial the remaining pages of the tender.

20.3 The tenderers shall submit their tenders as per the instructions contained in G1T Clause

20.4 Unless otherwise mentioned in the SIT, a tenderer shall submit two copies of its tender marking them as "Original" and "Duplicate".

20.5 The original and other copies of the tender shall either be typed or written in indelible ink and the same shall be signed by the tenderer or by a person(s) who has been duly authorized to bind the tenderer to the contract. The letter of authorization shall be by a written power of attorney, which shall also be furnished along with the tender.

20.6 All the copies of the tender shall be duly signed at the appropriate places as indicated in the tender documents

and all other pages of the tender including printed literature, if any shall be initialled by the same person(s) signing the tender. The tender shall not contain any erasure or overwriting, except as necessary to correct any error made by the tenderer and, if there is any such correction; the same shall be initialled by the person(s) signing the tender.

20.7 The tenderer is to seal the original and each copy of the tender in separate envelopes, duly marking the same as "Original", "Duplicate" and so on and writing the address of BRBNMPL and the tender reference number on the envelopes. The sentence 'NOT TO BE OPENED" before (The tenderer is to put the date & time of tender opening) are to be written on these envelopes. The inner envelopes are then to be put in a bigger outer envelope, which will also be duly sealed, marked etc. as above. If the outer envelope is not sealed and marked properly as above, BRBNMPL will not assume any responsibility for its misplacement, premature opening, late opening etc.

20.8 For purchasing capital equipment, high value plant, machinery etc. of complex and technical nature, tender document will seek quotation in two parts (Two Bid System)- first part containing the relevant technical details of the equipment / machinery etc., and in the second part, price quotation along with other allied issues. First part will be known as 'Technical Bid', and the second part 'Financial bid'. Tenderer shall seal separately 'Technical Bid' and 'Financial bid' and covers will be suitably super scribed. Both these sealed covers shall be put in a bigger cover and sealed and evaluation would be done as described in clause 25.24.4 below. Further details would be given in SIT, if considered necessary.

20.9 If permitted in the SIT, the tenderer may submit its tender through e-tendering procedure.

D SUBMISSION OF TENDERS

21. Submission of Tenders

21.1 Unless otherwise specified, the tenderers are to deposit the tenders in the tender box kept for this purpose at a place as indicated in para 1 of NIT. In case of bulky tender, which cannot be put into tender box, the same shall be submitted by the tenderer by hand to the designated officers of BRBNMPL, as indicated in clause 1 of NIT. The officer receiving the tender will give the tenderer an official receipt duly signed with date and time.

21.2 The tenderers must ensure that they deposit their tenders not later than the closing time and date specified for submission of tenders. In the event of the specified date for submission of tender falls on / is subsequently declared a holiday or closed day for BRBNMPL, the tenders will be received upto the appointed time on the next working day.

22. Late Tender

A tender, which is received after the specified date and time for receipt of tenders will be treated as "late" tender and will be ignored.

23. Alteration and Withdrawal of Tender

23.1 The tenderer, after submitting its tender, is permitted to alter / modify its tender so long as such alterations / modifications are received duly signed, sealed and marked like the original tender, within the deadline for submission of tenders. Alterations / modifications to tenders received after the prescribed deadline will not be considered.

23.2 No tender should be withdrawn after the deadline for submission of tender and before expiry of the tender validity period. If a tenderer withdraws the tender during this period, it will result in forfeiture of the earnest money furnished by the tenderer in its tender besides other sanctions by BRBNMPL.

E TENDER OPENING

24. Opening of Tenders

24.1 BRBNMPL will open the tenders at the specified date and time and at the specified place as indicated in clause 1 of NIT. In case the specified date of tender opening falls on / is subsequently declared a holiday or closed day for BRBNMPL, the tenders will be opened at the appointed time and place on the next working day.

24.2 Authorized representatives of the tenderers, who have submitted tenders on time may attend the tender opening, provided they bring with them letters of authority as per the format in SBD XVII from the corresponding tenderers. The tender opening official(s) will prepare a list of the representatives attending the tender opening. The list will contain the representatives' names & signatures and corresponding tenderers' names and addresses.

24.3 During the tender opening, the tender opening official(s) will read the salient features of the tenders like description of the goods offered, price, special discount if any, delivery period, whether earnest money furnished or not and any other special features of the tenders, as deemed fit by the tender opening official(s).

24.4 In the case of two bid system mentioned in clause 20.8 above, the technical bids are to be opened in the first instance, at the prescribed time and date. These bids shall be scrutinized and evaluated by the competent committee / authority with reference to parameters prescribed in the tender document. Thereafter, in the second stage, the financial bids of only the technically acceptable offers (as decided in the first stage) shall be opened for further scrutiny and evaluation. Other financial bids would be returned unopened to the respective bidders under Registered AD/ Reliable Courier or any other mode with proof of delivery.

F SCRUTINY AND EVALUATION OF TENDERS

25. Basic Principle

Tenders will be evaluated on the basis of the terms & conditions already incorporated in the tender document, based on which tenders have been received and the terms, conditions etc. mentioned by the tenderers in their tenders. No new condition will be brought in while scrutinizing and evaluating the tenders.

26. Preliminary Scrutiny of Tenders

26.1 The tenders will first be scrutinized to determine whether they are complete and meet the essential and important requirements, conditions etc. as prescribed in the tender document, The tenders, that do not meet the basic requirements, are liable to be treated as unresponsive and ignored.

26.2 The following are some of the important aspects, for which a tender may be declared unresponsive and ignored;

a) Tender is unsigned.
b) Tenderer is not eligible.
c) Tender validity is shorter than the required period.
d) Required EMD has not been provided.
e) Tenderer has quoted for goods manufactured by a different firm without the required authority letter from that manufacturer.
f) Tenderer has not agreed to give the required performance security.
g) Goods offered are sub-standard, not meeting the required specification etc.
h) Tenderer has not agreed to essential condition(s) specially incorporated in the tender enquiry.
i) Against a schedule in the List of Requirement (incorporated in the tender enquiry), the Tenderer has not quoted for the entire requirement as specified in that schedule. (Example: In a schedule, it has been stipulated that the Tenderer will

supply the equipment, install and commission it and also train BRBNMPL 's operators for operating the equipment. The Tenderer has however, quoted only for supply of the equipment).

27. Minor Infirmity / Irregularity / Non-Conformity

If during the preliminary examination, BRBNMPL find any minor infirmity and/ or irregularity and/ or non-conformity in a tender, BRBNMPL may waive the same provided it does not constitute any material deviation and financial impact and, also, does not prejudice or affect the ranking order of the tenderers. Wherever necessary, BRBNMPL will convey its observation on such 'minor' issues to the tenderer by registered/ speed post etc. asking the tenderer to respond by a specified date. If the tenderer does not reply by the specified date or gives evasive reply without clarifying the point at issue in clear terms, that tender will be liable to be ignored.

28. Discrepancy in Prices

28.1 If, in the price structure quoted by a tenderer, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless BRBNMPL feels that the tenderer has made a mistake in placing the decimal point in the unit price, in which case the total price as quoted shall prevail over the unit price and the unit price corrected accordingly.

28.2 If there is an error in a total price, which has been worked out through addition and / or subtraction of subtotals, the subtotals shall prevail and the total corrected; and

28.3 If there is a discrepancy between the amount expressed in words and figures, the amount in words shall prevail, subject to sub clause 28.1 and 28.2 above.

28.4 If, as per the judgment of BRBNMPL, there is any such arithmetical discrepancy in a tender, the same will be suitably conveyed to the tenderer by registered / speed post. If the tenderer does not agree to the observation of BRBNMPL, the tender is liable to be ignored.

29. Discrepancy between original and copies of Tender

In case any discrepancy is observed between the text etc. of the original copy and that in the other copies of the same tender set, the text etc. of the original copy shall prevail. Here also, BRBNMPL will convey its observation suitably to the tenderer by register! Speed post and, if the tenderer does not accept BRBNMPL's observation, that tender will be liable to be ignored.

30. Clarification of Bids

During evaluation and comparison of bids, purchaser may, at its discretion ask the bidder or clarification of its bid. The clarification should be received within 7 days from the bidder from date of receipt of such request. The request for clarification shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. No post bid clarification at the initiative of the bidder shall be entertained.

31. Qualification / Eligibility Criteria

Tenders of the tenderers, who do not meet the required qualification/ eligibility criteria prescribed in Section IX, will be treated as unresponsive and will not be considered further.

32. Conversion of tender currencies to Indian Rupees

In case the tender document permits the tenderers to quote their prices in different currencies, all such quoted prices of the responsive tenderers will be converted to a single currency viz., Indian Rupees for the purpose of equitable comparison and evaluation, as per the B.C. selling exchange rates established by the State Bank of India for similar transactions, as on the date of tender opening.

33. Schedule-wise Evaluation

In case the List of Requirements contains more than one schedule, the responsive tenders will be evaluated and compared separately for each schedule. The tender for a schedule will not be considered if the complete requirements prescribed in that schedule are not included in the tender. However, as already mentioned in GIT sub clause 12.2, tenderers have the option to quote for any one or more schedules and offer discounts for combined schedules. Such discounts, wherever applicable, will be taken into account to determine the tender or combination of tenders offering the lowest evaluated cost for BRBNMPL in deciding the successful tenderer for each schedule, subject to that tenderer(s) being responsive.

34. Comparison on CIF Destination Basis

Unless mentioned otherwise in Section-III – Special Instructions to Tenderers and Section-VI – List of Requirements, the comparison of the responsive tenders shall be on CIF destination basis, duly delivered, commissioned, etc. as the case may be.

35. Additional Factors and Parameters for Evaluation and Ranking of Responsive Tenders

35.1 Further to GIT Clause 33 above, BRBNMPL 's evaluation of a tender will include and take into account the following:

a) in the case of goods manufactured in India or goods of foreign origin already located in India, sales tax & other similar taxes and excise duty & other similar duties, which will be contractually payable (to the tenderer), on the goods if a contract is awarded on the tenderer; and

b) In the case of goods of foreign origin offered from abroad, customs duty and other similar import duties/ taxes, which will be contractually payable (to the tenderer) on the goods if the contract is awarded on the tenderer.

35.2 BRBNMPL's evaluation of tender will also take into account the additional factors, if any, incorporated in SIT in the manner and to the extent indicated therein.

35.3 As per policies of the Government from time to time, the purchaser reserves its option to give price preference to Small Scale Industries in comparison to the large scale Industries. This price preference cannot however be taken for granted and every endeavour need to be made by such firms to bring down cost and achieve competitiveness.

35.4 If the tenders have been invited on variable price basis, the tenders will be evaluated, compared and ranked on the basis of the position as prevailing on the day of tender opening and not on the basis of any future date.

36. Tenderer's capability to perform the contract

36.1 BRBNMPL, through the above process of tender scrutiny and tender evaluation will determine to its satisfaction whether the tenderer, whose tender has been determined as the lowest evaluated responsive tender is eligible, qualified and capable in all respects to perform the contract satisfactorily. If, there is more than one schedule in the List of Requirements, then, such determination will be made separately for each schedule.

36.2 The above mentioned determination will, inter-alia, take into account the tenderer's financial, technical and production capabilities for satisfying all the requirements of BRBNMPL as incorporated in the tender document. Such determination will be based upon scrutiny and examination of all relevant data and details submitted by the tenderer in its tender as well as such other allied information as deemed appropriate by BRBNMPL.

37. Cartel Formation / Pool Rates

Cartel formation or quotation of Pool/ Co-ordinated rates, leading to 'Appreciable Adverse Effect on Competition" (AAEC) as identified in Competition Act, 2002, as amended by Competition (Amendment) Act, 2007, would be considered as a serious misdemeanour and would be dealt accordingly as per Clause 44 below.

38. Negotiations

Normally there would be no price negotiations. But BRBNMPL reserves its right to negotiate with the lowest acceptable bidder (L1), who is technically cleared/ approved for supply of bulk quantity and on whom the contract would have been placed but for the decision to negotiate, under special circumstances in accordance with CVC guidelines. i.e. Normally there should be no negotiation. Selection of contractors by negotiations should be a rare exception rather than the rule and may be resorted to only in the exceptional circumstances under the following circumstances: -

i. Where the procurement is done on proprietary basis
ii. Items to be procured are supplied by only a limited sources of supply
iii. Items where there is suspicion of cartel formation.

39. Contacting BRBNMPL

39.1. From the time of submission of tender to the time of awarding the contract, if a tenderer needs to contact BRBNMPL for any reason relating to this tender enquiry and / or its tender, it should do so only in writing.

39.2. It will be treated as a serious misdemeanour in case a tenderer attempts to influence BRBNMPL's decision on scrutiny, comparison, evaluation and award of the contracts. In such a case the tender of the tenderer shall be liable for rejection in addition to appropriate administrative actions being taken against that tenderer, as deemed fit by BRBNMPL, in terms of clause 44 of GIT.

G AWARD OF CONTRACT

40. BRBNMPL's Right to Accept any Tender and to Reject any or All Tenders BRBNMPL reserves the right to accept in part or in full any tender or reject any tender without assigning any reason or to cancel. the tendering process and reject all tenders at any time prior to award of contract, without incurring any liability, whatsoever to the affected tenderer or tenderers.

41. Award Criteria

Subject to GIT clause 36 above, the contract will be awarded to the lowest evaluated responsive tenderer decided by BRBNMPL in terms of GIT Clause 34.

42. Variation of Quantities at the Time of Award

No variation of quantities at the time of awarding the contract.

43. Parallel Contracts

BRBNMPL reserves its right to conclude Parallel contracts, with more than one bidder (for the same tender). If this is foreseen at the time of Tendering, a clause would be included in SIT giving further details.

44. Serious Misdemeanours

44.1. Following would be considered serious misdemeanours:

i. Submission of misleading / false/ fraudulent information/ documents by the bidder in their bid
ii. Submission of fraudulent / unencashable Financial Instruments stipulated under Tender or Contract Condition.
iii. Violation of Code of Ethics laid down in Clause 32 of the GCC.
iv. Cartel formation or quotation of Pool / coordinated rates leading to "Appreciable Adverse Effect on Competition" (AAEC) as identified under the Competition Act, 2002.
v. Deliberate attempts to pass off inferior goods or short quantities.
vi. Violation of Fall Clause by Rate Contract holding Firms.
vii. Attempts to influence BRBNMPL's Decisions on scrutiny, comparison, evaluation and award of Tender.

44.2. Besides, suitable administrative actions, like rejecting the offers or delisting of registered firms, BRBNMPL would ban/ blacklist Tenderers committing such misdemeanour, including declaring them ineligible to be awarded BRBNMPL contracts for indefinite or for a stated period.

45. Notification of Award

45.1 Before expiry of the tender validity period, BRBNMPL will notify the successful tenderer(s) n writing, by registered / speed post or by fax/email / telex/ cable (to be confirmed by registered / speed post) that its tender for goods & services, which have been selected by BRBNMPL, has been accepted, also briefly indicating therein the essential details like description, specification and quantity of the goods & services and corresponding prices accepted. The successful tenderer must furnish to BRBNMPL the required performance security within twenty-one days from the date of this notification. Relevant details about the performance security have been provided under GCC Clause 6 under Section IV.

45.2 The notification of award shall constitute the conclusion of the contract.

46. Issue of Contract

46.1 Within seven working days of receipt of performance security, BRBNMPL will send the contract form (as per Section XVI) duly completed and signed, in duplicate, to the successful tenderer by registered / speed post.

46.2 Within seven days from the date of issue of the contract, the successful tenderer will return the original copy of the contract, duly signed and dated, to BRBNMPL by registered / speed post.

47. Non-receipt of Performance Security and Contract by BRBNMPL

Failure of the successful tenderer in providing performance security within 21 days of receipt of notification of award and / or returning contract copy duly signed in terms of GIT clauses 45 and 46 above shall make the tenderer liable for forfeiture of its EMD and, also, for further sanctions by BRBNMPL against it.

48. Return of EMD

The earnest money of the successful tenderer and the unsuccessful tenderers will be returned to them without any interest, whatsoever, in terms of GIT Clause 18.6.

49. Publication of Tender Result

The name and address of the successful tenderer(s) receiving the contract(s) will be mentioned in the notice board/ bulletin/ web site of BRBNMPL.

Part II: Additional General Instructions Applicable to Specific Types of Tenders:

50. Rate Contract Tenders

50.1 In addition to GIT in Part I above, following GIT will be applicable to rate contract Tenders:

i. Earnest Money Deposit (EMD) is not applicable.
ii. In the Schedule of Requirement, no commitment of quantity is mentioned; only the anticipated requirement is mentioned without any commitment.
iii. BRBNMPL reserves the right to conclude more than one rate contract for the same item.
iv. Unless otherwise specified in SIT, the currency of a Rate Contract would normally be for one year.
v. During the currency of the Rate Contract, BRBNMPL may withdraw the rate contract by serving suitable notice. The prescribed notice period is generally thirty days.
vi. During the currency of the Rate Contract, BRBNMPL would have the option to

renegotiate the price with the rate contract holders.
vii. During the currency of the Rate Contract, in case of emergency, BRBNMPL may purchase the same item through ad hoc contract with a new supplier.

viii. Usually, the terms of delivery in rate contracts are FOR dispatching station.
ix. Supply orders, incorporating definite quantity of goods to be supplied along with all other required conditions following the rate contract terms, will be issued by nominated Direct Demanding Officers (DDO) for obtaining supplies through the rate contract.
x. BRBNMPL is entitled to place supply orders up to the last day of the validity of the rate contract and, though supplies against such supply orders will be affected beyond the validity period of the rate contract, all such supply will be guided by the terms & conditions of the rate contract.

xi. The rate contract will be guided by "Fall Clause" as described below.

50.2 Fall Clause

If the rate contract holder reduces its price or sells or even offers to sell the rate contracted goods, following conditions of sale similar to those of the rate contract, at a price lower than the rate contract price, to any person or organization during the currency of the rate contract, the rate contract price will be automatically reduced with effect from that date for all the subsequent supplies under the rate contract and the rate contract amended accordingly. Any violation of the fall clause would be considered a serious misdemeanour under clause 44 of the GIT and action, as appropriate, would be taken as per provision of that clause.

50.3 Performance Security

Value of Performance Security would be stipulated in the SIT. Performance Security shall, however, not be demanded again in the individual supply orders issued subsequently against rate contracts.

50.4 Renewal of Rate Contracts

In case it is not possible to conclude new rate contracts before the expiry of existing ones, due to some special reasons, the existing rate contracts would be extended with same terms, conditions etc for a suitable period, with the consent of the rate contract holders. Rate contracts of the firms, who do not agree to such extension, will be left out, Period of such extension would generally not be more than three months.

51. Prequalification Bidding

51.1 Prequalification Bidding is for short listing of qualified Bidders who fulfill the Prequalification criteria as laid down in SIT or in Section IX of SBD – "Qualification Criteria" for procurement of Goods or Services as listed in Section VI of SBD – "List of Requirements". Short listed Bidders would be informed of their qualification and short listing in accordance with the stipulations laid down in the SIT. Unless otherwise stipulated in the SIT the PQB short listing would be valid only till the next procurement tender. Further conditions will be elaborated in the SIT.

51.2 If stipulated in the SIT, only these short listed qualified bidders would be invited to participate in the Procurement of the requirements. Otherwise SIT may also indicate that instead of floating a separate PQB tender, it may be combined with the Procurement Tender, as a three bid tender. Initially the first Packet containing PQB would be opened and evaluation would be done. Thereafter the rest of tender would be handled as a two bid system for only those bidders who succeed in PQB.

52. Tenders involving Samples

52.1 Normally no sample would be called along with the offer for evaluation.

52.2 Purchaser's Samples: If indicated in the SIT, A Purchaser's sample may be displayed to indicate required characteristics over and above the Specifications for perusal of the bidders. Name and Designation of the Custodian, Place, Dates and Time of inspection of Purchaser's sample will be indicated in the SIT. The supplies in the contract will have to meet the indicated required characteristics for which the Purchaser's sample was displayed, besides meeting the specification listed in Section VII – "Technical Specifications" of the SBD. He would be issued a sealed Purchaser's sample for the purpose at the time of award of the contract.

52.3 Pre-Production Samples: If stipulated in SIT, successful contractor would be required to submit a Pre-Production sample(s) to the Inspecting Officer/ or the nominated authority mentioned in the contract within the time specified therein. If the Contractor is unable to do so, he must apply immediately to the Office issuing the acceptance of tender for extension of time stating the reasons for the delay. If the Purchaser is satisfied that a reasonable ground for an extension of time exists, he may allow such additional time as he considers to be justified (and his decision shall be final) with or without alteration in the delivery period stipulated in the contract and on such conditions as he deems fit. In the event of the failure of the Contractor to deliver the pre-production sample by the date specified in the acceptance of tender or any other date to which the time may be extended as aforesaid by the Purchaser or of the rejection of the sample, the Purchaser shall be entitled to cancel the contract and, if so desired, purchase or authorize the purchase of the stores at the risk and cost of the Contractor {unless specified otherwise in the SIT). In such an event, in case of Security Items where urgency develops due to such delays, BRBNMPL reserves its right to procure not more than one year's requirement against this "Risk & Cost" tender from existing pre-qualified and security cleared firms. Bulk production and supply will only be allowed if this sample(s) pass the Tests laid down in the Section VIII "Quality Control Requirements" in the SBD.

52.4 Testing of Samples: Tests, procedures and testing laboratories for testing samples would be detailed in the Section VIII – "Quality Control Requirements" in the SBD.

52.5 Validation/ Prolonged Trials: If specified in SIT or in the Section VIII – "Quality Control Requirements" in the SBD, pre-production samples may have to undergo validation or extended trial before their performance can be declared satisfactory.

52.6 Parameters Settings and duration of Validation Tests would be indicated in the Section VIII – "Quality Control Requirements" in the SBD. It would also stipulate the period or event marking end of validation trials. It would also be indicated therein whether the Permission to start bulk production will have to wait full validation or it can go on in parallel.

53. Expression of Interest (EOI) Tenders:

53.1 EOI tenders are floated for short fisting firms who are willing and qualified for: -

i. Registration of Vendors for Supply of particular Stores or certain categories of Stores.
ii. Development of new items or Indigenization of Imported stores

53.2 The qualification / eligibility criteria required and the format of submission of such Data would be indicated in the Section IX - "Qualification Criteria" in the SBD.

53.3 Objectives and scope of requirement would be indicated in the Section VI -"List of Requirements" in the SBD. Indicative quantity required yearly and its future requirements would also be indicated.

53.4 In case of EOI for Development of new Items or for Indigenization, prospective firms would be given opportunity to inspect the Machine/ Item at the place of installation at the place, dates and Time mentioned in SIT.

53.5 In case EOI is for registration of vendors, Registration Fees and validity period of registration would be detailed in the SIT.

53.6 Short List of Suppliers: The suppliers shall be evaluated for short listing, inter-alia, based on their past experience of supplying goods in similar context, financial strength, technical capabilities etc. Each supplier will be assigned scores based on weightages assigned to each of the criteria mentioned in the Section IX – "Qualification Criteria" in the SBD.

53.7 If stipulated in the SIT, the Firm's capacity and Capability may be assessed by a nominated Committee or by a third party nominated by BRBNMPL.

53.8 All suppliers who secure the minimum required marks (normally 50% unless otherwise specified in the Section IX) would be short listed. Section IX may alternatively specify minimum qualifying requirement for each of the criteria i.e. minimum years of experience, minimum number of assignments executed, minimum turnover etc. Under such circumstances, all suppliers who meet the minimum requirement, as specified, will be short listed_

53.9 In case of EOI for registration of vendors, registration letters would be issued to the short listed tenderers.

53.10 In case of EOI for development/ indigenization, these shortlisted tenderers would only be allowed to participate in the subsequent development/ indigenization tenders.

54. Tenders for Disposal of Scrap

54.1 Introduction: The tender is for Sale of Scrap material lying at various locations. Details of scrap for sale including Description, Present Condition, Lot Size and its Location would be given in the Section VI – "List of Requirements".

54.2 "As Is; Where Is; Whatever Is" Basis of This Sale:

54.2.1 This sale of Scrap is strictly on "As Is; Where Is; Whatever Is" basis. Tenderer must satisfy himself on all matters with regard to quality, quantity; nature of stores etc., before tendering as no complaint or representation of any kind shall be entertained after the safe contract is concluded.

54.2.2 The description of lot in the particulars of sale has been given for the purpose of identification thereof only and the use of such description shall not constitute the sale thereof to be sale by description and no sale shall be invalid by reason of any defect or deviation or variation in any lot or on account of any lot not being exactly described and the purchaser shall not be entitled to claim any damage or compensation whatsoever on account of such fault, error in description, weight or the like.

54.2.3 All quantities of scrap whether by weight or measurement mentioned in the Tender notice are only approximate and should the quantity, on actual weight or measurement basis as the case may be and whenever delivered on such basis, works out less than the advertised and for projected quantity, the BRBNMPL shall not under any circumstances be liable to make good any such deficiency

54.2.4 BRBNMPL reserves right to increase or decrease the quantity of any item or items or terminate the contract at any stage by giving one week's notice. No claim whatsoever shall lie against the BRBNMPL on account of such termination of the contract or variation in the quantity.

54.2.5 BRBNMPL shall have the right to remove certain items which it feels were not intended for sale but were inadvertently made a part of the scrap material or of the lot offered for sale lying at the premises or were joined or attached to the material offered for sale.

54.2.6 Tenderers desirous of purchasing and participating in the tender must visit the site before submitting the offer, after taking due permission from the concerned Stock Holders. The Tenderers submitting the offers shall be deemed to have visited the site and acquainted themselves thoroughly with materials intended for sale in all respect.

54.2.7 Any person giving offer shall be deemed to have made himself fully conversant with the Terms and Conditions of the Tender Sale, as well as the location and condition of the materials being sold and shall be deemed to have agreed to all the stated terms and conditions herein under.

54.3 Submission of Offer:

54.3.1 Unless specified otherwise in the SIT, tenders shall hold good for acceptance for a minimum period of 90 days (ninety days) from the date of opening of the tenders. The offers of the tenderers shall be irrevocable.

54.3.2 The BRBNMPL reserves right to reject any offer without assigning any reason there for.

54.3.3 Unless otherwise stated in the SIT, the amount of EMD in such tenders would be 5% of the value of the tender. The Earnest Money shall be forfeited if the tenderer unilaterally withdraws amends, impairs or derogates from his offer in any respect within the period of validity of his offer.

54.3.4 If the offer of the tenderer is not accepted by the BRBNMPL, the Earnest Money deposit made by the tenderer shall be refunded to him. No interest shall be payable on such refunds. The EMD deposited by the successful tenderer shall remain with the BRBNMPL till payment of the security deposit (SD) money, as stipulated in relevant Clause, has been made. It may be adjusted as part of the total SD money at the discretion of the BRBNMPL.

54.3.5 Commercial tax / terminal tax, Octroi, municipal tax or any other taxes / duties etc. whatever in force shall be payable extra by the purchaser as per rules applicable to BRBNMPL. Current and valid PAN and sales / commercial tax registration number wherever applicable must be provided in the Bid of the Tenderer.

54.3.6 All arrangement for lifting and transportation of scrap material, including manpower, crane, transport vehicle and trolley etc, if required shall be made by the purchaser concerned only and the BRBNMPL shall not provide or help in providing any such arrangements and the rate quoted by the purchaser must include such and all incidental charges.

54.3.7 Registered dealers who are exempted from payment of Sales Tax must submit copies of their Registration certificate of concerned authority and shall be required to submit necessary form duly completed in all respect to BRBNMPL or its representatives before obtaining delivery order, duly signed by the partner of the firm or the person authorized to do so.

54.3.8 Evaluation of tenders for Disposal of scrap will be done on similar basis as Tenders for Procurement of Goods, except that the selection of the bidders shall be on the basis of the highest responsive Bidder (Hi). In case full quantity is not offered to be taken by the Highest Bidder, parallel contracts would be placed.

54.4 Notification of Acceptance and Award of Contract:

54.4.1 The successful tenderer, herein after referred to as purchasers, shall have to submit security deposit (SD) @ 10% of the total sale value of the contract within 5 working days of issue of the sale contract (excluding the date of issue of sale contract). The SD shall be deposited in the form of bank draft/pay order, drawn on any nationalized or recognized bank in favour of same officer as mentioned in clause 3 of NIT in connection with EMD.

54.4.2 The purchaser has to pay balance payment within 20 days from the date of notification of acceptance, which is to be issued by BRBNMPL or his authorized representative, in form of Bank draft drawn on any nationalized or recognized bank in favour of same authority as mentioned above. In case of any, default to deposit balance payment, BRBNMPL reserves right to terminate the contract and forfeit the security deposit.

54.5 Disposal Tenders for Security and Sensitive Machinery and Items:

54.5.1 Non-Misuse Declaration: The bidder is required to give an undertaking that he or his employees or legal heirs will ensure that such items purchased from BRBNMPL, will be utilized only for scrap recovery and will not be

misused for any other purpose. He will also ensure that this undertaking is honoured and it got underwritten from further down the line scrap processors/ re-purchasers, if any. In case his firm changes hands, it will be his responsibility to ensure that the new owners honour and underwrite this undertaking.

54.5.2 If stipulated in SIT delivery would be given only in dismantled / cut-up condition.

55. Development and Indigenization Tenders:

55.1 Already developed firms or firms who have already received development orders for the item (with whatever results) would not be considered in such tenders.

55.2 If specified in SIT the contract documents may be issued free of cost, and submission of earnest money deposit and security deposit may be relaxed.

55.3 If specified in SIT, The Tenderers may quote separately for

i. Price / rate for bulk supply of item in development / indigenization supplies and

ii. Separately, cost of development including cost of pre-production samples. Firms would be paid only for the number of samples specified in the Tender. If he has to manufacture more samples due to failure of earlier one, he would not be paid for it.

55.4 L1 would be determined on the basis of rate of item quoted including reference to total cost of the development cost (including the cost of prototype) plus the notional total cost of quantities that will be required over next three years, wherever applicable.

55.5 Development contracts may, as far as feasible, be concluded with two or more contractors in parallel.

55.6 The ratio of splitting of the supply order between various development agencies / firms in cases of parallel development, including criteria thereof, would be specified in the SIT.

55.7 However, in case the requirement is meagre and complex technology is involved, or quantity of the equipment/ spares is limited/small/ uneconomic if distributed between two vendors, the entire order could be placed upon the Ll vendor only.

55.8 If specified in SIT, Advance and Intermediate Payment to Suppliers may be allowed.

55.9 Quantity for Development Commitment

In Next three years, after the newly developed firm is able to successfully complete Development orders with $\pm$5% tolerances, 20% of annual quantity requirement may be reserved for Newly Developed firms.

55.10 Period of Development Commitment.

A newly developed firm would be granted this facility till only three years after completing the initial Development order. However, this facility is not a bar to the firm from competing with already established firms for quantities larger than 20% provided their prices and performance so warrant. Thereafter they would have to compete on equal terms with other already developed firms.

56. Tenure of Contract:

The total work should be completed within the time as mentioned in Part-I (NIT). Since time is the essence of the contract, Supplier should mobilise all the resources to complete the work in time. On placement of Work Order in case the Supplier fails to start the job within stipulated time from date of issue of order, BRBNMPL reserves the right to cancel the contract and EMD / Security Deposit amount will be forfeited.

Request for extension of completion period on valid reason, shall be submitted at least two weeks before scheduled date of completion.

57. Before execution of above work the Supplier has to see the site condition, take measurement, submit Design, Drawing, lay out & work schedule etc. for approval of BRBNMPL

58. Compliance of Security Norms:

a) Bharatiya Reserve Bank Note Mudran Pvt. Limited, Mysuru is a security organization and its premises have been declared as `PROTECTED AREA' by the Govt. of KARNATAKA. Hence the bidder shall have to abide by the prevailing security Norms. Any of the bidder' employee/works man/labour deployed at site found by the Company as having doubtful integrity, shall be removed from the premises at the risk and cost.

b) The bidder shall provide security provisions to check infiltration, and safeguard of the works till the complete work is handed over. Nothing, extra shall be paid to the bidder by the BRBNMPL on this account.

59. Safety & Security Measures:

a) The contractor should scrupulously conform to the safety and security norms and stipulations while working in the security area. The contractor should maintain site clearance during the progress of the work and also after the completion of the work.

b) The Contractor will be required to take "Workmen's Compensation Insurance' policy to all of his workmen engaged for the said job and copy of the same to be submitted. It shall be the sole responsibility of the contractor to ensure safety to all his workers. The contractor shall take all the precaution during the execution of construction works against any type of personnel injury or any damage to the property, which can arise during working. Adequate safety gadgets shall be provided by the contractor to the workmen as per norms.

c) It shall be the sole responsibility of the contractor to ensure safety to all his workers. The contractor shall take all the precaution during execution of work against any hazards, personnel injury or any damage to the property. The contractor shall provide adequate safety gadgets to the workmen as per norms.

d) In respect of all labour, directly or indirectly employed on the works for the performance and execution of the contractor's work under the contract, the contractor shall at his own expense arrange for all the safety provisions as listed in (i) safety code forming part of the contract documents (ii) Indian Standards Regulations, Rules and orders made there under and such other acts as applicable.

e) Precautions as stated in the safety clause are the minimum necessary and shall not preclude the Contractor taking additional safety precautions as may be warranted for the particular type of work or situations. Also mere observance of these precautions shall not absolve the contractor of his responsibility and contractual obligations.

f) in case of loss or damage to property or injury to any person including the contractor's labour, the BRBNMPL representatives or any member of the public or resulting in the death of any of these.

g) Protective gear such as safety masks/goggles/helmets, boots, belts etc. shall be provided by the contractor at his own cost to all his manpower at site. It shall be the responsibility of the contractor to ensure that such protective

gear is worn at all times by all personnel working at site. BRBNMPL shall have the right to stop any person not wearing such protective gear from working on the site.

h) In case the contractor fails to make arrangements and provide necessary facilities as aforesaid, the BRBNMPL shall be entitled to do so and recover the costs thereof from the contractor. The decision of the BRBNMPL in this regard shall be final and binding on the contractor.

i) The contractor shall obtain valid license under the Contract Labour (R & A) Act 1970 and the Contract Labour (Regulation and abolition) Central Rules 1971 and under any other applicable rules before the commencement of the work and continue to have a valid license until the completion of the work.

j) Any untoward incident arising out of improper supervision or inadequate safety measures will be the sole responsibility of the contractor. The Contractor shall conform to all the Labour Laws and shall remain solely responsible for the obligation under the relevant statutory provisions.

k) BRBNMPL is a security organization and the Govt. of Karnataka declares the premise as Prohibited Area. Hence the contractor has to abide by the security rules of the Company. The contractor has to ensure the character and antecedent of the persons deployed. The contractor must be in a position to produce such documents whenever he is asked to do so. Details shall be furnished as per format when called for. The contractor has to issue printed photo identity card to its workers duly authenticated by the designated security officer of the Company. Contractor should apply for Gate Pass for labours, welding permission and material entry pass etc. as per approved format only, well in advance to avoid any delay in issue of Gate passes.

l) Contractor must ensure that the number of labours/masons or any other type of workers engaged for carrying out the work and requested for issue of gate pass are coming for the job awarded. In case any of the workers is not coming for which gate pass was requested/issued, the name of such persons should be brought to the notice of the concerned officer as well as to the Security section and surrender the pass issued immediately.

m) The BRBNMPL and their respective representatives shall at all reasonable times have free access to the work or other places where materials are lying or from which they are being obtained and the Bidder shall give every facility to the BRBNMPL and their representative necessary for inspections and examination and test of the materials and workmanship. No Person, not authorized by the BRBNMPL except the representatives of public authorities, shall be allowed on the works at any time.

n) Gate passes for all the workers shall be applied in the prescribed Gate Pass Format, contractor must enclose copy of address proof (Voters ID card or ration card or driving license or passport etc.), for all the workers for which gate pass has been requested. The details shall be submitted in the prescribed format.

Yours faithfully,

( )
Seal
Signature with date.
Name:

60. The following statement also has to be signed by the Contractor.

"It is certified that I know personally the person for whom the entry pass is required and there is nothing adverse report or Police cases against them to debar their entry. I take the responsibility for all those mentioned in the list who acts detrimental to the security and safety of BRBNMPL and other property of the undertaking as also violation of any provision of law & rules framed there under and instruction of Director, GM, DGM and any Executive of the company. It is also to be certified that the persons mentioned above are not holding any photo pass for the requested period."

The Format may be collected for applying the Gate pass from the concerned Section:

a. The contractor shall submit police verification certificate for good character / antecedents for all the workers/supervisor for complying Security formalities. This certificate or receipt of submission shall be submitted by the contractor. The same shall be submitted for workers/supervisors, who may be a replacement / addition, as the case may be. The cost of verification will be borne by the contractor.

b. On award of the contract the contractor shall sign the Non-disclosure format and abide with that.

c. Any worker of the contractor, if found by the Company as unsuitable or having doubtful integrity, shall be removed from the premises at the risk and cost of the contractor. The contractor shall vouch guarantee for the integrity of its workers.

d. The contractor shall make their own arrangement for providing working lunch/dinner to their employees.

e. All compensation or other sums of money payable by the Contractor to the employer under the terms of this contract will be deducted from the earnest Money deposit/Security Deposit or any other process or recovery of such dues.

f. The calculations made by the tenderer should be based upon probable quantities of several items of work which are furnished for the tenderer's convenience in the schedule of probable quantities but it must be clearly understood that the contract is not a lump sum contract.

g. The successful tenderer is bound to carry out any items of work necessary for the completion of the job though such items as are not included in the quantities and rates with the written approval of the employer.

61. Accommodation: For the Resident Engineer initially for 15 (fifteen) days accommodation may be provided as per availability of the Guest House, thereafter a quarter shall be allotted for his stay during the project stage as per Estate allotment terms on monthly chargeable basis. The cost to be borne by the Supplier.

62. Responsibility of the Supplier:

a) **Execution of the work:** The Supplier shall arrange competent persons for execution, supervision and measurement of the work.

b) **Progress Report:** Supplier should submit monthly Progress Report regarding a Progress of the work, in addition to Hindrance Register & Field Book.

Section III: Special Instructions to Tenderers (SIT)

The following Special Instructions to Tenderers will apply for this purchase. These special instructions will modify/ substitute/ supplement the corresponding General Instructions to Tenderers (GIT) incorporated in Section II. The corresponding GIT clause numbers have also been indicated in the text below:

In case of any conflict between the provision in the GIT and that in the SIT, the provision contained in the SIT shall prevail.

(Clauses of GIT listed below include a possibility for variation in their provisions through SIT. There could be other clauses in SIT as deemed fit.)

SI. No.	GIT Clause No.	Topic	SIT Provision
1	4	Eligible Goods and	No Change
2	8	Pre bid Conference	No Change
3	9	Time Limit for receiving request for clarification of Tender Documents	No Change
4	11. 2	Tender Currency	Shall be in INR only.
5	12. 11	Applicability of Octroi and Local taxes	No Change.
6	14	PVC Clause & Formula	Not applicable
7	19	Tender Validity	120 days from date of opening of tender. Extension of another 30 days, if required
8	20. 4	Number of Copies of Tenders to be submitted	One
9	20. 9	E- Procurement	Not applicable
10	35. 2	Additional Factors for Evaluation of Offers	Supplement with the following: Prospective bidders should meet our tender conditions and items being supplied should be strictly as per given specification without counter conditions.
11	43	Parallel Contracts	Not applicable
12	50. 1, 50. 3	Tender For rate Contracts	Not applicable
13	51. 1, 51. 2	PQB Tenders	Not Applicable
14	52. 1, 52. 3, 52. 5	Tenders involving	Not applicable
15	53. 4, 53. 5, 53. 7	EOI Tenders	Not applicable
16	54. 3. 1, 54. 5. 2	Tenders for Disposal of Scrap	Not applicable
17	55. 2, 55. 3, 55. 7, 55. 8	Development/Indigenization Tenders	Not applicable

18	Clarification of Bidders:	For any clarification bidder may contact this office on any working day during working hours before submission of tender paper. Contractor is advised to visit the site with prior information to understand the actual scope of work and prevailing site conditions. Authorization paper must be displayed for any person visiting on behalf of contractor. Once tender is submitted, it will be implied that the contractor has fully understood the detail specifications, site condition and scopes of work. After quoting ignorance regarding these will not be entertained.
19	Sub-contract	Sub-contracting in any form before and after placement of the work order will not be allowed. In case the contractor is found engaging sub-contractor, the contract is liable for termination forthwith and forfeit the Security Deposit
20	**CLARIFICATION OF BIDS**	During evaluation and comparison of bids, purchaser may, at its discretion ask the bidder for clarification of its bid. The clarification should be received within 7 days from the bidder from the date of receipt of such request. The request for clarification shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. No post bid clarification at the initiative of the bidder shall be entertained.
21	**DISCRIPANCY IN PRICES**	a) If in the price structure quoted by a tenderer, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price and the quantity), the unit price shall prevail and the total price shall be corrected accordingly, unless client feels that the tenderer has made a mistake in placing the decimal point in the unit price, in which case the total price as quoted shall prevail over the unit price and the unit price shall be corrected accordingly. b) If there is an error in a total price, which has been worked out through addition and/or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected, and c) If, as per the judgment of client, there is any such arithmetical discrepancy in a tender, the same will be suitably conveyed to the tenderer by registered/speed post, if the tenderer does not agree to the observation of the client, the tender is liable for rejection.

22	**VIRTUAL COMPLETION OF WORKS:**	The works shall be considered as Virtually Completed only upon fulfilment of the procedure laid down in clause above, and only after the work has been completed in every respect in conformity with the Contract documents and after all the systems and services have been tested and commissioned, and after the Site has been cleared and the Work cleaned in accordance with the clause and when the Client / Architect has in writing that the work is virtually completed. The Defects Liability Period shall commence from the date of such Certificate of Virtual Completion Should before Virtual Completion, the client decides to occupy any portion of the work or use any part of any equipment, the same shall not constitute an acceptance of any part of the work or of any equipment, unless so stated in writing by Client/Architect.
23	Other Instructions	a. A tenderer should quote the tender in figures as well as in word rate(s). The amount for each item should be worked out and the requisite totals given. Special care shall be taken to write rates in figures as well as in words and the amounts in figures only in such a way that interpolation is not possible. The Rates and total amounts should be rounded off to nearest Rupee value. In case of discrepancy between the rates in words and figures the rate quoted by the tenderer in words shall be taken as correct. The tenderer should quote for each item and not leave any item of BOQ blank or incomplete. In case any item is left blank the offer shall be summarily rejected. b. The tender document should be signed on each page by the tenderer or his duly authorized representative. Tender document should be accompanied by a certified true copy of an absolute power of Attorney in favour of signatory to the documents. c. Any discrepancies, omissions, ambiguities or conflicts in or among contract documents or any doubt as to their meaning should be called to the attention of The Dy. General Manager, Ink Project facility within three (3) days of issue of tender. Where information sought is not clearly indicated or specified, the company will issue a clarifying bulletin to all tenderers, which will become part of the contract. Any oral instructions will not form any part of contract. d. The use of whitener / eraser in the tender is prohibited. If any correction becomes of necessary, the same should be done by striking off originally written rates & figures etc. and then rewriting should be done under initials of person filling the tender. e. Please note that the contractors who have worked earlier with BRBNMPL, Mysuru and their performance was not found satisfactory for any of the jobs awarded to them, their tenders shall not be opened during technical bid stage and their offers shall be considered as invalid and shall be rejected.
24	Rights of the Company	a) BRBNMPL does not pledge itself to accept the lowest or any tender and reserves to itself the right of accepting/rejecting the whole or any part of the tender or portion of the quantity tendered without assigning any reason thereof. b) If the successful bidder refuses to accept the work order or take up the job or leave the job half way after opening the tender and becoming lowest party, BRBNMPL reserve the right to termite the contract and forfeit the EMD / Security Deposit and no correspondence will be entertained and decision of the BRBNMPL will be final. In such case Company reserve the right to take necessary action as deemed fit against the contractor and assign another agency for completion of the leftover job and the additional cost incurred thus shall be recovered from the original contractor.

Section IV: General Conditions of Contract (GCC)

General Conditions of Contract (GCC)

Part I: General Conditions of Contract applicable to all types of Tenders

1. **Definitions; Interpretation and Abbreviations**: In the contract, unless the context otherwise requires:

1.1 Definitions and Interpretation:

(i) "Contract" means the letter or memorandum communicating to the Contractor the acceptance of this tender and includes "Intimation of Award" of his tender; "Contract" includes and Bid Invitation, Instructions to Tenderers, Tender, Acceptance of Tender, General Conditions of Contract, Schedule of Requirements, particulars and the other conditions specified in the acceptance of tender and includes a repeat order which has been accepted or acted upon by the Contractor and a formal agreement, if executed;

(ii) "Contractor" or "Supplier" means the individual or the firm supplying the goods and services. The term includes his employees, agents, successors, authorized dealers, stockists and distributors. Other homologous terms are: Vendor, Firm, Manufacturer, OEM etc.;

(iii) "Drawing" means the drawing or drawings specified in or annexed to the Specifications;

(iv) "Government" means the Central Government or a State Government as the case may be;

(v) The "Inspecting Officer" means the person, or organisation specified in the contract for the purpose of inspection of stores of work under the contract and includes his / their authorised representative;

(vi) "Purchase Officer" means the officer signing the acceptance of tender and includes any officer who has authority to execute the relevant contract on behalf of the Purchaser;

(vii) The "Purchaser" means BRBNMPL — the organization purchasing goods and services as incorporated in the documents;

(viii) "Signed" includes stamped, except in the case of an acceptance of tender or any amendment thereof;

(ix) "Test" means such test as is prescribed by the particulars or considered necessary by the Inspecting Officer whether performed or made by the Inspecting Officer or any agency acting under the direction of the Inspecting Officer;

(x) The delivery of the stores shall be deemed to take place on delivery of the stores in accordance with the terms of the contract, after approval by the Inspecting Officer if so provided in the contract —

a. The consignee at his premises; or

b Where so provided, the interim consignee at his premises; or

c. A carrier or other person named in the contract for the purpose of transmission to the consignee: or

d.The consignee at the destination station in case of contract stipulating for delivery of stores at destination station.

(xi) "Writing" or "Written" includes matter either in whole or in part, in manuscript, typewritten, lithographed, cyclostyled, photographed or printed under or over signature or seal, as the case may be.

(xii) Words in the singular include the plural and vice-versa.

(xiii) Words importing the masculine gender shall be taken to include the feminine gender and words importing persons shall include any company or association or body of individuals, whether incorporated or not.

(xiv) The heading of these conditions shall not affect the interpretation or construction thereof.

(xv) Terms and expression not herein defined shall have the meanings assigned to them in the Indian Sale of Goods Act, 1930 (as amended) or the Indian Contract Act, 1872 (as amended) or the General Clauses Act, 1897 (as amended) as the case may be.

(xvi) PARTIES: The parties to the contract are the "Contractor" and the "Purchaser", as defined above;

(xvii) "Tender" means quotation / bid received from a firm / supplier.

(xviii) "Goods" means the articles, material, commodities, livestock, furniture, fixtures, raw material, spares, instruments, machinery, equipment, industrial plant etc. which the supplier is required to supply to BRBNMPL under the contract. Other homologous terms are: Stores, Materials etc.

(xix) "Services" means services allied and incidental to the supply of goods, such as transportation, installation, commissioning, provision of technical assistance, training, after sales service, maintenance service and other such obligations of the supplier covered under the contract.

(xx) "Earnest Money Deposit" (EMD) means monetary guarantee to be furnished by a Tenderer along with its tender.

(xxi) "Performance Security" means monetary guarantee to be furnished by the successful Tenderer for due performance of the contract placed on it. Performance Security is also known as Security Deposit or Performance Bank Guarantee.

(xxii) "Consignee" means the person to whom the goods are required to be delivered as specified in the Contract. If the goods are required to be delivered to a person as an interim consignee for the purpose of dispatch to another person as provided in the Contract then that "another" person is the consignee, also known as ultimate consignee.

(xxiii) "Specification" or "Technical Specification" means the drawing / document/ standard that prescribes the requirement to which product or service has to conform.

(xxiv) "Inspection" means activities such as measuring, examining, testing, analyzing, gauging one or more characteristics of the product or service and comparing the same with the specified requirement to determine conformity.

(xxv) "Day" means calendar day.

1.2 Abbreviations:

"AAEC" means "Appreciable Adverse Effect on

	Competition" as per Competition Act
"BG"	means Bank Guarantee
"BL or B/L"	means Bill of Lading
"CD	means Custom Duty
"CIF"	means Cost, Insurance and Freight Included
"CMD"	means Chairman and Managing Director
"CPSU"	means Central Public Sector Undertaking
"CST"	means Central Sales Tax
"DDO"	means Direct Demanding Officer in Rate Contracts
"DGS&D"	means Directorate General of Supplies and Disposals
"DP'	means Delivery Period
"ECS"	means Electronic clearing system
"ED"	means Excise Duty
EMD	means Earnest money deposit
"EOI"	means Expression of Interest (Tendering System)
"ERV"	means Exchange rate variations
"FAS"	means Free alongside shipment
"FOB"	means Freight on Board
"FOR"	means Free on Rail
"GCC"	means General Conditions of Contract
GIT	means General Instructions to Tenderers
GST	means Goods and Services Tax which will replace Sales Tax
"H1, H2 etc"	means First Highest, Second Highest Offers etc in Disposal Tenders
Incoterms	means International Commercial Terms, 2000 (of ICC)
"L1. L2 etc"	means First or second Lowest Offer etc.
"LC"	means Letter of Credit
"LD or L/D"	means Liquidated Damages
"LSI"	means Large Scale Industry
"NIT"	means Notice Inviting Tenders.
"NSIC"	means National small industries corporation
"PQB"	means Pre-qualification bidding
"PSU"	means Public Sector Undertaking
"PVC"	means Price variation clause
"RC"	means Rate contract
"RR or R/R"	means Railway Receipt
"SBD" or "T D"	means Standard Bid Document / Tender Document
"SCC"	means Special Conditions of Contract
"SIT"	means Special Instructions to Tenderers
"BRBNMPL"	means Bharatiya Reserve Bank Note Mudran Private Limited
"SS I"	means Small Scale Industry
"ST"	means Sales Tax
"VAT"	means Value Added Tax

2. Application

2.1. The General Conditions of Contract incorporated in this section shall be applicable for this purchase to the extent the same are not superseded by the Special Conditions of Contract (SCC) prescribed under Section V of this document.

2.2. General Conditions of the contract shall not be changed from one tender to other.

2.3. Other Laws and Conditions that will govern the Contract:

Besides GCC and SCC following conditions and Laws will also be applicable and would be considered as part of the contract:

i. Indian Contracts Act, 1872
ii. Sale of Goods Act, 1930
iii. Arbitration and Conciliation Act, 1996
iv. Competition Act, 2002 as amended by Competition (Amendment Act), 2007
v. Contractor's Tender Submissions including Revised Offer during Negotiations if any
vi. Conditions in other parts of the Tender Documents
vii. Correspondence including counter-offers if any; between the Contactor and BRBNMPL during the Tender Finalization
viii. Notification of award and Contract Documents
ix. Subsequent Amendments to the Contract

3. Use of contract documents and information

3.1. The supplier shall not, without BRBNMPL's prior written consent, disclose the contract or any provision thereof including any specification, drawing, sample or any information furnished by or on behalf of BRBNMPL in connection therewith, to any person other than the person(s) employed by the supplier in the performance of the contract emanating from this tender document. Further, any such disclosure to any such employed person shall be made in confidence and only so far as necessary for the purposes of such performance for this contract.

3.2. During the process of procurement of Security or Sensitive Machinery and Items, Tender Documents and the specifications/ drawings of such items would be issued only to Vendors having security clearance within the validity of such clearance and he shall maintain absolute secrecy and strictly control the number of copies and access to the documents and copies thereof, in addition to safeguards mentioned in sub-para above.

3.3. Further, the supplier shall not, without BRBNMPL's prior written consent, make use of any document or information mentioned in GCC sub-clause 3.1 above except for the sole purpose of performing this contract.

3.4. Except the contract issued to the supplier, each and every other document mentioned in GCC sub-clause 3.1 above shall remain the property of BRBNMPL and, if advised by BRBNMPL, all copies of all such documents shall be returned to BRBNMPL on completion of the supplier's performance and obligations under this contract.

4. Patent Rights

4.1. The supplier shall, at all times, indemnify BRBNMPL, free of cost, against all claims which may arise in respect of goods & services to be provided by the supplier under the contract for infringement of any right protected by patent, registration of designs or trademarks. In the event of any such claim in respect of alleged breach of patent, registered designs, trademarks etc. being made against BRBNMPL, BRBNMPL shall notify the supplier of the same and the supplier shall, at his own expenses take care of the same for settlement without any liability to BRBNMPL.

5. Country of Origin

5.1. All goods and services to be supplied and provided for the contract shall have the origin in India or in the

countries with which the Government of India has trade relations.

5.2. The word "origin" incorporated in this clause means the place from where the goods are mined, cultivated, grown, manufactured, produced or processed or from where the services are arranged.

6. Performance Bond / Security

6.1. Within twenty-one days after the issue of notification of award by BRBNMPL, the supplier shall furnish performance security to BRBNMPL for an amount equal to ten per cent of the total value of the contract, valid up to sixty days after the date of completion of all contractual obligations by the supplier, including the warranty obligations.

6.2. The Performance security shall be denominated in Indian Rupees or in the currency of the contract and shall be in one of the following forms:

a. Account Payee Demand Draft or Fixed Deposit Receipt drawn on any commercial bank in India, in favour of the same official of BRBNMPL as indicated in the clause 3 of NIT in reference to EMD.

b. Bank Guarantee issued by a commercial bank in India, in the prescribed form as provided in section XV of this document.

6.3. In the event of any loss due to supplier's failure to fulfill its obligations in terms of the contract, the amount of the performance security shall be payable to BRBNMPL to compensate BRBNMPL for the same.

6.4. In the event of any amendment issued to the contract, the supplier shall, within twenty-one days of issue of the amendment, furnish the corresponding amendment to the Performance Security (as necessary), rendering the same valid in all respects in terms of the contract, as amended.

6.5. Subject to GCC sub-clause 6.3 above, BRBNMPL will release the performance security without any interest to the supplier on completion of the supplier's all contractual obligations including the warranty obligations.

7. Technical Specifications and Standards

7.1. The Goods & Services to be provided by the supplier under this contract shall conform to the technical specifications and quality control parameters mentioned in 'Technical Specification' and 'Quality Control Requirements' under Sections VII and VIII of this document.

8. Packing and Marking

8.1. The packing for the goods to be provided by the supplier should be strong and durable enough to withstand, without limitation, the entire journey during transit including transhipment (if any), rough handling, open storage etc. without any damage, deterioration etc. As and if necessary, the size, weights and volumes of the packing cases shall also take into consideration, the remoteness of the final destination of the goods and availability or otherwise of transport and handling facilities at all points during transit up to final destination as per the contract.

8.2. The quality of packing, the manner of marking within & outside the packages and provision of accompanying documentation shall strictly comply with the requirements as provided in Technical Specifications and Quality Control Requirements under Sections V11 and VIII and in SCC under Section V. in case the packing requirements are amended due to issue of any amendment to the contract, the same shall also be taken care of by the supplier accordingly.

8.3. Packing instructions:

Unless otherwise mentioned in the Technical Specification and Quality Control Requirements under Sections VII and VIII and in SCC under Section V, the supplier shall make separate packages for each consignee (in case there is more than one consignee mentioned in the contract) and mark each package on three sides with the following with indelible paint of proper quality:

a) contract number and date
b) brief description of goods including quantity
c) packing list reference number
d) country of origin of goods
e) consignee's name and full address and
f) supplier's name and address

9. Inspection and Quality Control

9.1. BRBNMPL and / or its nominated representative(s) will, without any extra cost to BRBNMPL, inspect and/ or test the ordered goods and the related services to confirm their conformity to the contract specifications and other quality control details incorporated in the contract. BRBNMPL shall inform the supplier in advance, in writing, BRBNMPL's programme for such inspection and, also the identity of the officials to be deputed for this purpose.

9.2. The Technical Specification and Quality Control Requirements incorporated in the contract shall specify what inspections and tests are to be carried out and, also, where and how they are to be conducted. If such inspections and tests are conducted in the premises of the supplier or its subcontractor(s), all reasonable facilities and assistance, including access to relevant drawings, design details and production data, shall be furnished by the supplier to BRBNMPL's inspector at no charge to BRBNMPL.

9.3. If during such inspections and tests the contracted goods fail to conform to the required specifications and standards, BRBNMPL's inspector may reject them and the supplier shall either replace the rejected goods or make all alterations necessary to meet the specifications and standards, as required, free of cost to BRBNMPL and resubmit the same to BRBNMPL's inspector for conducting the inspections and tests again.

9.4. In case the contract stipulates pre-despatch inspection of the ordered goods at suppliers' premises, the supplier shall put up the goods for such inspection to BRBNMPL's inspector well ahead of the contractual delivery period, so that BRBNMPL's inspector is able to complete the inspection within the contractual delivery period.

9.5. If the supplier tenders the goods to BRBNMPL's inspector for inspection at the last moment without providing reasonable time to the inspector for completing the inspection within the contractual delivery period, the inspector may carry out the inspection and complete the formality beyond the contractual delivery period at the

risk and expense of the supplier. The fact that the goods have been inspected after the contractual delivery period will not have the effect of keeping the contract alive and this will be without any prejudice to the legal rights and remedies available to BRBNMPL under the terms & conditions of the contract.

9.6. BRBNMPL's contractual right to inspect, test and, if necessary, reject the goods after the goods' arrival at the final destination shall have no bearing of the fact that the goods have previously been inspected and cleared by BRBNMPL's inspector during pre-despatch inspection mentioned above.

9.7. Goods accepted by BRBNMPL and/ or its inspector at initial inspection and in final inspection in terms of the contract shall in no way dilute BRBNMPL's right to reject the same later, if found deficient in terms of the warranty clause of the contract, as incorporated under GCC Clause.

10. Terms of Delivery

10.1. Goods shall be delivered by the supplier in accordance with the terms of delivery specified in the contract.

11. Transportation of Goods

11.1. The supplier shall not arrange part-shipments and/ or transhipment without the express / prior written consent of BRBNMPL.

11.2. Instructions for transportation of domestic goods including goods already imported by the supplier under its own arrangement: In case no instruction is provided in this regard in the SCC, the supplier will arrange transportation of the ordered goods as per its own procedure.

11.3. Shipping Arrangement for Foreign Contracts: In the case of FOB/FAS contracts, shipping arrangements shall be made by the Ministry of Shipping & Transport (Chartering Wing), New Delhi, INDIA, in accordance with details given in SBD Section XVIII. The Contractor shall give adequate, notice to the Forwarding Agents/Nominees about the readiness of the cargo from time to time and at least six weeks' notice in advance of the required position for finalising the shipping arrangements. In the case of C&F contracts, the Contractor shall arrange shipment in accordance with the requirements of the Ministry of Shipping & Transport, New Delhi, INDIA, indicated in the same SBD section (as applicable).

12. Insurance:

12.1 Unless otherwise instructed in the SCC, the supplier shall make arrangements for insuring the goods against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the following manner.

12.2 In case of supply of domestic goods on CIF destination basis, the supplier shall be responsible till the entire stores contracted for arrive in good condition at destination. The transit risk in this respect shall be covered by the Supplier by getting the stores duly insured. The insurance cover shall be obtained by the Supplier in its own name and not in the name of BRBNMPL or its Consignee.

12.3 In the case of FOB and C&F offers for import of Goods, insurance shall be arranged by the Purchaser. However, the supplier must give sufficient notice to the Purchaser prior to the date of shipment, so that the Insurance Cover for the shipment can be activated. The Supplier must co-ordinate so as to ensure that the Shipment sails only with Insurance cover in place.

12.4 In case of Import of Goods, even in case where the insurance is paid by the Purchaser, and loss or damage shall be made good by the Contractor free of cost, without waiting for the settlement of insurance claim. The payment after settlement of insurance claim shall be reimbursed by the Purchaser to the Contractor. It will be entirely the responsibility of the Contractor to make good loss/damage without waiting for settlement of insurance claim so that machine is commissioned within the time specified in the contract.

13. Spare parts

13.1. If specified in the List of Requirements and in the resultant contract, the supplier shall supply / provide any or all of the following materials, information etc. pertaining to spare parts manufactured and/ or supplied by the supplier:

a) The spare parts as selected by BRBNMPL to be purchased from the supplier, subject to the condition that such purchase of the spare parts shall not relieve the supplier of any contractual obligation including warranty obligations; and

b) In case the production of the spare parts is discontinued:

i. sufficient advance notice to BRBNMPL before such discontinuation to provide adequate time to BRBNMPL to purchase the required spare parts etc., and

ii. immediately following such discontinuation, providing BRBNMPL, free of cost, the designs, drawings, layouts and specifications of the spare parts, as and if requested by BRBNMPL.

13.2. Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the goods so that the same are supplied to BRBNMPL promptly on receipt of order from BRBNMPL.

14. Incidental services

14.1. Subject to the stipulation, if any, in the SCC (Section-V) and the Technical Specification (Section – VII), the supplier shall be required to perform any or all of the following services:

a) Providing required jigs and tools for assembly, start-up and maintenance of the goods
b) Supplying required number of operation & maintenance manual for the goods
c) Installation and commissioning of the goods
d) Training of BRBNMPL's operators for operating and maintaining the goods
e) Providing after sales service during the tenure of the contract
f) Providing maintenance service after expiry of the warranty period of the goods if so incorporated in the contract

14.2. Prices to be paid to the supplier by BRBNMPL for any of the required incidental services, if not already included in the contract price during the placement of the contract, shall be settled and decided in advance by

BRBNMPL and the supplier. However, such prices shall not exceed the contemporary rates charged by the supplier to other customers for similar services.

15. Distribution of Despatch Documents for Clearance/ Receipt of Goods

15.1. The supplier shall send all the relevant despatch documents well in time to BRBNMPL to enable BRBNMPL to clear or receive (as the case may be) the goods in terms of the contract. Unless otherwise specified in the SCC, the usual documents involved and the drill to be followed in general for this purpose are as follows:

15.2. For Domestic Goods, including goods already imported by the supplier under its own arrangement Within 24 hours of despatch, the supplier shall notify BRBNMPL, consignee, and others concerned if mentioned in the contract, the complete details of despatch and also supply the following documents to them by registered post / speed post (or as instructed in the contract):

(a) Supplier's Invoice indicating, inter alia description and specification of the goods, quantity, unit price, total value;
(b) Packing list;
(c) Insurance certificate;
(d) Railway receipt / Consignment note;
(e) Manufacturer's guarantee certificate and in-house inspection certificate;
(f) Inspection certificate issued by BRBNMPL's inspector
(g) Expected date of arrival of goods at destination and
(h) Any other document(s), as and if specifically mentioned in the contract.

15.3. For Imported Goods, within 3 days of dispatch, the supplier will Notify BRBNMPL, consignee and other concerned if mentioned in the contract, the complete details of dispatch and also supply the following documents to them by Courier (or as instructed in the Contract), besides advance intimation by Fax/ email:

(a) Clean on Board Airway Bill/Bill of Lading (B/L)
(b) Original Invoice
(c) Packing List
(d) Certificate of Origin from Seller's Chamber of Commerce
(e) Certificate of Quality and current manufacture from OEM
(f) Dangerous Cargo Certificate, if any.
(g) Insurance Policy of 110% if CIF/CIF contract.
(h) Performance Bond / Warranty Certificate

16. Warranty

16.1 The supplier warrants that the goods supplied under the contract is new, unused and incorporate all recent improvements in design and materials unless prescribed otherwise by BRBNMPL in the contract. The supplier further warrants that the goods supplied under the contract shall have no defect arising from design, materials (except when the design adopted and / or the material used are as per BRBNMPL's specifications) or workmanship or from any act or omission of the supplier, that may develop under normal use of the supplied goods under the conditions prevailing in India.

16.2 This warranty shall remain valid for twelve months after the goods or any portion thereof as the case may be, have been delivered to the final destination and installed and commissioned at the final destination and accepted by BRBNMPL in terms of the contract or for fifteen months from the date of despatch from the supplier's premises for domestic goods (including goods already imported by the supplier under its own arrangement) or for eighteen months after the date of shipment from the port of loading in the source country for imported goods offered from abroad, whichever is earlier, unless specified otherwise in the SCC.

16.3. In case of any claim arising out of this warranty, BRBNMPL shall promptly notify the same in writing to the supplier.

16.4. Upon receipt of such notice, the supplier shall, with all reasonable speed (or within the period, if specified in the SCC), repair or replace the defective goods or parts thereof, free of cost, at the ultimate destination. The supplier shall take over the replaced parts/ goods after providing their replacements and no claim, whatsoever shall lie on BRBNMPL for such replaced parts/ goods thereafter.

16.5. In the event of any rectification of a defect or replacement of any defective goods during the warranty period, the warranty for the rectified/ replaced goods shall be extended to a further period of twelve months from the date such rectified / replaced goods starts functioning to the satisfaction of BRBNMPL.

16.6. If the supplier, having been notified, fails to rectify / replace the defect(s) within a reasonable period (or within the period, if specified in the SCC), BRBNMPL may proceed to take such remedial action(s) as deemed fit by BRBNMPL, at the risk and expense of the supplier and without prejudice to other contractual rights and remedies, which BRBNMPL may have against the supplier.

17. Assignment

17.1. The Supplier shall not assign, either in whole or in part, its contractual duties, responsibilities and obligations to perform the contract, except with BRBNMPL's prior written permission.

18. Sub Contracts

18.1. The Supplier shall notify BRBNMPL in writing of all sub contracts awarded under the contract if not already specified in its tender. Such notification, in its original tender or later, shall not relieve the Supplier from any of its liability or obligation under the terms and conditions of the contract.

18.2. Sub contract shall be only for bought out items and sub-assemblies.

18.3. Sub contracts shall also comply with the provisions of GCC Clause 5 ('Country of Origin").

19. Modification of contract

19.1. Once a contract has been concluded, the terms and conditions thereof will generally not be varied. However if necessary, BRBNMPL may, by a written order given to the supplier at any time during the currency of the contract, amend the contract by making alterations and

modifications within the general scope of contract in any one or more of the following:

(a) Specifications, drawings, designs etc. where goods to be supplied under the contract are to be specially manufactured for BRBNMPL,
(b) mode of packing,
(c) incidental services to be provided by the supplier
(d) mode of despatch,
(e) place of delivery, and
(f) any other area(s) of the contract, as felt necessary by BRBNMPL depending on the merits of the case.

19.2. In the event of any such modification/ alteration causing increase or decrease in the cost of goods and services to be supplied and provided, or in the time required by the supplier to perform any obligation under the contract, an equitable adjustment shall be made in the contract price and/ or contract delivery schedule, as the case may be, and the contract amended accordingly. If the supplier doesn't agree to the adjustment made by BRBNMPL, the supplier shall convey its views to BRBNMPL within twenty one days from the date of the supplier's receipt of BRBNMPL's amendment / modification of the contract.

19.3. **Option Clause**: By a suitable provision in the SCC, the Purchaser may reserve the right to increase the ordered quantity by 25% at any time, till final delivery date of the contract, by giving reasonable notice even though the quantity ordered initially has been supplied in full before the last date of Delivery Period.

20. Prices

20.1. Prices to be charged by the supplier for supply of goods and provision of services in terms of the contract shall not vary from the corresponding prices quoted by the supplier in its tender or during negotiations, if any, and incorporated in the contract except for any price adjustment authorized in the SCC.

21. Taxes and Duties

21.1. Supplier shall be entirely responsible for all taxes, duties, fees, levies etc. incurred until delivery of the contracted goods to BRBNMPL.

21.2. Further instruction, if any, shall be as provided in the SCC.

22. Terms and Mode of Payment: Unless specified otherwise in SCC, the terms of payments would be as follows:

22.1. Unless otherwise specified in SCC, usual payment term is 100% on receipt and acceptance of goods by the Purchaser and on production of all required documents by the supplier.

22.2. For Domestic Goods: Unless otherwise specified in the SCC, payments to suppliers are usually made by account payee cheque or through ECS only.

22.2.1. Where the terms of delivery is FOR dispatching Station, the payment terms, depending on the value and nature of the goods, mode of transportation etc. maybe 60% to 90% (as specified in SIT) on proof of dispatch and other related documents and balance on receipt at site and acceptance by the consignee.

22.2.2. Where the terms of delivery is CIF destination / delivery at site/FOR destination, usual payment term is 100% on receipt and acceptance of goods by the consignee and on production of all required documents by the supplier.

22.2.3. Where goods to be supplied also need installation and commissioning by the supplier, the payment terms are generally as under:

(a) For a contract with terms of delivery as FOR dispatching station

i. 60% on proof of dispatch along with other specified documents
ii. 30% on receipt of the goods at site by the consignee and balance
iii. 10% on successful installation and commissioning and acceptance by the user department

(b) For a contract with terms of delivery as CIF destination/ Delivery at site/FOR destination

i. 90% on receipt and acceptance of goods by the consignee at destination and on production of all required documents by the supplier
ii. 10% on successful installation and commissioning and acceptance by the consignee.

22.3. For Imported Goods: Unless otherwise specified in SCC, payments are made through an irrevocable Letter of Credit {LC).

(a) Cases where Installation, Erection and Commissioning (if applicable) are not the responsibility of the Supplier — 100 % net FOB/FAS price is to be paid against invoice, shipping documents, inspection certificate (where applicable), manufacturers' test certificate, etc.
(b) Cases where Installation, Erection and Commissioning are the responsibility of the Supplier — 80% to 90% net FOB/FAS price (as specified in the SCC) will be paid against invoice, inspection certificate (where applicable), shipping documents etc. and balance within 21-30 days of successful installation and commissioning at the consignee's premises and acceptance by the consignee.
(c) Payment of Agency Commission against FOB/FAS Contract — Entire 100% agency commission is generally paid in Indian Rupees after all other payments have been made to the supplier in terms of the contract.

22.4. Unless specified otherwise in the SCC, the following general conditions will apply for payment to the supplier.

22.5. The payment shall be made in the currency / currencies authorized in the contract.

22.6. The supplier shall send its claim for payment in writing as per Section XIX - "Proforma for Bill for Payments", when contractually due, along with relevant documents etc., duly signed with date, as specified in SCC and in a manner as also specified therein.

22.7. While claiming payment, the supplier is also to certify in the bill that the payment being claimed is strictly in terms of the contract and all the obligations on the part of the supplier for claiming that payment has been fulfilled as required under the contract.

22.8. The important documents which the supplier is to furnish while claiming payment are:

a) Original Invoice
b) Packing List
c) Certificate of country of origin of the goods from seller's Chamber of Commerce.
d) Certificate of pre-dispatch inspection by BRBNMPL's representative/ nominee
e) Manufacturer's test certificate
f) Performance/ Warrantee Bond
g) Certificate of insurance
h) Clean on Bill of lading/ Airway bill/ Rail receipt or any other dispatch document, issued by a government agency (like postal department) or an agency duly authorized by the concerned ministry/ department
i) Consignee's Certificate confirming receipt and acceptance of goods
j) Dangerous Cargo Certificate, if any, in case of imported goods.
k) Any other document specified.

22.9. While claiming reimbursement of duties, taxes etc. (like sales tax, excise duty, custom duty) from BRBNMPL, as and if permitted under the contract, the supplier shall also certify that, in case it gets any refund out of such taxes and duties from the concerned authorities at a later date, it (the supplier) shall refund to BRBNMPL, BRBNMPL's share out of such refund received by the supplier. The supplier shall also refund the applicable amount to BRBNMPL immediately on receiving the same from the concerned authorities.

22.10. In case where the supplier is not in a position to submit its bill for the balance payment for want of receipted copies of Inspection Note from the consignee and the consignee has not complained about the non-receipt, shortage, or defects in the supplies made, balance amount will be paid by the paying authority without consignee's receipt certificate after three months from the date of the preceding part payment for the goods in question, subject to the following conditions:

(a) The supplier will make good any defect or deficiency that the consignee (s) may report within six months from the date of despatch of goods.
(b) Delay in supplies, if any, has been regularized.
(c) The contract price where it is subject to variation has been finalized.
(d) The supplier furnishes the following undertakings:

"I/We, _____ certify that It We have not received back the Inspection Note duly receipted by the consignee or any communication from BRBNMPL or the consignee about non-receipt, shortage or defects in the goods supplied. I / We agree to make good any defect or deficiency that the consignee may report within three months from the date of receipt of this balance payment or six months from the date of dispatch whichever is later.

23. Delay in the supplier's performance

23.1. The time for and the date specified in the contract or as extended for the delivery of the stores shall be deemed to be the essence of the contract and the supplier shall deliver the goods and perform the services under the contract within the time schedule specified by BRBNMPL in the List of Requirements and as incorporated in the contract.

23.2. Subject to the provision under GGG clause 28, any unexcused delay by the supplier in maintaining its contractual obligations towards delivery of goods and performance of services shall render the supplier liable to any or all of the following sanctions besides any administrative action:

a) imposition of liquidated damages,
b) forfeiture of its performance security and
c) Termination of the contract for default.

23.3. If at any time during the currency of the contract, the supplier encounters conditions hindering timely delivery of the goods and performance of services, the supplier shall promptly inform BRBNMPL in writing about the same and its likely duration and make a request to BRBNMPL for extension of the delivery schedule accordingly. On receiving the supplier's communication, BRBNMPL shall examine the situation as soon as possible and, at its discretion, may agree to extend the delivery schedule, with or without liquidated damages for completion of supplier's contractual obligations by issuing an amendment to the contract.

23.4. When the period of delivery is extended due to unexcused delay by the supplier, the amendment letter extending the delivery period shall, inter alia contain the following conditions:

a) BRBNMPL shall recover from the supplier, under the provisions of the clause 24 of the General Conditions of Contract, liquidated damages on the goods and services, which the Supplier has failed to deliver within the delivery period stipulated in the contract

b) That no increase in price on account of any ground, whatsoever, including any stipulation in the contract for increase in price on any other ground and, also including statutory increase in or fresh imposition of customs duty, excise duty, sales tax or on account of any other tax or duty which may be levied in respect of the goods and services specified in the contract, which takes place after the date of delivery stipulated in the contract shall be admissible on such of the said goods and services as are delivered and performed after the date of the delivery stipulated in the contract.

c) But nevertheless, BRBNMPL shall be entitled to the benefit of any decrease in price on account of reduction in or remission of customs duty, excise duty, sales tax or any other duty or tax or levy or on account of any other grounds, which takes place after the expiry of the date of delivery stipulated in the contract.

23.5. The supplier shall not despatch the goods after expiry of the delivery period. The supplier is required to apply to BRBNMPL for extension of delivery period and obtain the same before despatch. In case the supplier despatches the goods without obtaining an extension, it would be doing so at its own risk and no claim for payment for such supply and / or any other expense related to such supply shall lie against BRBNMPL.

24. Liquidated damages

24.1. Subject to GCC clause 28, if the supplier fails to deliver any or all of the goods or fails to perform the services within the time frame(s) incorporated in the

contract, BRBNMPL shall, without prejudice to other rights and remedies available to BRBNMPL under the contract, deduct from the contract price, as liquidated damages, a sum equivalent to the 0.5% percent (or any other percentage if prescribed in the SCC) of the delivered price of the delayed goods and/ or services for each week of delay or part thereof until actual delivery or performance, subject to a maximum deduction of the 10% (or any other percentage if prescribed in the SCC) of the delayed goods' or services' contract price(s). During the above mentioned delayed period of supply and / or performance, the conditions incorporated under GCC sub-clause 23.4 above shall also apply.

25. Custody and Return of BRBNMPL's Materials/ Equipment/ Documents loaned to Contractor

25.1. Whenever stores are required to be issued to the firm/contractor for fabrication or prototypes or sub-assemblies are issued for guidance in fabrication, these would be issued against appropriate Bank Guarantee as specified in SCC. In addition to the Bank Guarantee, appropriate insurance may be asked if specified in the SCC.

25.2. All drawings and samples issued to the contractor in connection with the contract must be returned by him. Final payment will be withheld if this is not done, besides any other sanction deemed fit by BRBNMPL.

26. Termination for default

26.1. BRBNMPL, without prejudice to any other contractual rights and remedies available to it (BRBNMPL), may, by written notice of default sent to the supplier, terminate the contract in whole or in part, if the supplier fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by BRBNMPL pursuant to GCC sub-clauses 23.3 and 23.4.

26.2. In the event of BRBNMPL terminates the contract in whole or in part, pursuant to GCC sub-clause 26.1 above, BRBNMPL may procure goods and/ or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit at the "Risk and Cost" of the supplier and the supplier shall be liable to BRBNMPL for the extra expenditure, if any, incurred by BRBNMPL for arranging such procurement.

26.3. Unless otherwise instructed by BRBNMPL, the supplier shall continue to perform the contract to the extent not terminated.

27. Termination for insolvency

27.1. If the supplier becomes bankrupt or otherwise insolvent, BRBNMPL reserves the right to terminate the contract at any time, by serving written notice to the supplier without any compensation, whatsoever, to the supplier, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to BRBNMPL.

28. Force Majeure

28.1. In the event of any unforeseen event directly interfering with the supply of stores arising during the currency of the contract, such as war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, or acts of God, the Contractor shall, within a week from the commencement thereof, notify the same in writing to the Purchaser with reasonable evidence thereof. Unless otherwise directed by BRBNMPL in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. If the force majeure condition(s) mentioned above be in force for a period of 90 days or more at any time, either party shall have the option to terminate the contract on expiry of 90 days of commencement of such force majeure by giving 14 days' notice to the other party in writing. In case of such termination, no damages shall be claimed by either party against the other, save and except those which had occurred under any other clause of this contract prior to such termination.

28.2. Notwithstanding the provisions contained in GCC clauses 23, 24 and 26, the supplier shall not be liable for imposition of any such sanction so long the delay and/ or failure of the supplier in fulfilling its obligations under the contract is the result of an event of Force Majeure.

28.3. In case due to a Force Majeure event BRBNMPL is unable to fulfill its contractual commitment and responsibility, BRBNMPL will notify the supplier accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.

29. Termination for convenience

29.1. BRBNMPL reserves the right to terminate the contract, in whole or in part for its (BRBNMPL's) convenience, by serving written notice on the supplier at any time during the currency of the contract. The notice shall specify that the termination is for the convenience of BRBNMPL. The notice shall also indicate inter-alia, the extent to which the supplier's performance under the contract is terminated, and the date with effect from which such termination will become effective.

29.2. The goods and services which are complete and ready in terms of the contract for delivery and performance within thirty days after the supplier's receipt of the notice of termination shall be accepted by BRBNMPL following the contract terms, conditions and prices. For the remaining goods and services, BRBNMPL may decide:

a.to get any portion of the balance completed and delivered at the contract terms, conditions and prices; and / or

b. to cancel the remaining portion of the goods and services and compensate the supplier by paying an agreed amount for the cost incurred by the supplier towards the remaining portion of the goods and services.

30. Governing language

30.1. The contract shall be written in Hindi or English language following the provision as contained in GIT clause 2. All correspondence and other documents pertaining to the contract, which the parties exchange, shall also be written accordingly in that language.

31. Notices

31.1. Notice, if any, relating to the contract given by one party to the other, shall be sent in writing or by cable or telex or facsimile and confirmed in writing, The

procedure will also provide the sender of the notice, the proof of receipt of the notice by the receiver. The addresses of the parties for exchanging such notices will be the addresses as incorporated in the contract.

31.2. The effective date of a notice shall be either the date when delivered to the recipient or the effective date specifically mentioned in the notice, whichever is later.

32. Code of Ethics

BRBNMPL as well as Bidders, Suppliers, Contractors, and Consultants under BRBNMPL contracts shall observe the highest standard of ethics during the procurement or execution of such contracts. In pursuit of this policy, for the purposes of this provision, the terms set forth below are defined as follows:

(a) "Corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;
(b) 'Fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
(c) "Collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of the Purchaser, designed to establish bid prices at artificial, non-competitive levels; and
(d) "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract.
(e) A particular violation of ethics may span more than one of above mentioned unethical practices.

32.1. The following policies will be adopted in order to maintain the standards of ethics during procurement:

(a) A proposal for award will be rejected if it is determined that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question.

(b) A contract will be cancelled if it is determined at any time that BRBNMPL representatives/ officials have directly or indirectly, engaged in corrupt, fraudulent, collusive or coercive practices during the procurement or the execution of that contract

(c) In case any individual staff is found responsible, suitable disciplinary proceedings should be initiated against such staff under the applicable government conduct rules. The existing provisions under the Indian law including the instructions of Central Vigilance Commission should be followed in this regard.

(d) Firms or individuals shall be banned/ blacklisted after following due process, including declaring them ineligible, either indefinitely or for a stated period of time, to be awarded a BRBNMPL contract, if it at any time determines that they have, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a BRBNMPL contract.

33. Resolution of disputes

33.1. If dispute or difference of any kind shall arise between BRBNMPL and the supplier in connection with or relating to the contract, the parties shall make every effort to resolve the same amicably by mutual consultations. If the parties fail to resolve their dispute or difference by such mutual consultation within twenty one days of its occurrence, then, unless otherwise provided in the SCC, either BRBNMPL or the supplier may seek recourse to settlement of disputes through arbitration as per The Arbitration and conciliation Act 1996 as per following clause.

33.2. Arbitration Clause: - If both parties fail to reach such amicable settlement, then either party (the Purchaser or Seller) may within 21 days of such failure give a written notice to the other party requiring that all matters in dispute or difference be arbitrated upon. Such written notice shall specify the matters which are in difference or of difference of which such written notice has been given and no other matter shall be referred to the arbitration in accordance with the conciliation and arbitration rules of International Chamber of Commerce {ICC}/United National Commission on International Trade Law (UNCITRL) by three arbitrators appointed in accordance with the procedure set out in clause below. The arbitration proceeding shall be held in Bangalore and shall be conducted in English language. All documentation to be reviewed by the arbitrators and/ or submitted by the parties shall be written or translated into English. Venue of arbitration shall be Bangalore. The arbitrator or arbitrators appointed under this article shall have the power to extend time to make the award with the consent of the parties. Pending reference to arbitration the parties shall make all endeavours to complete the contract/work in all respects and all disputes, if any, will finally be settled in the arbitration.

34. Applicable Law

34.1. The contract shall be interpreted in accordance with the laws of India.

34.2. Irrespective of the place of delivery, or the place of performance or the place of Payments under the contract, the contract shall be deemed to have been made at the place from which the notification of acceptance of the tender has been issued.

35. Secrecy

35.1. The Contractor shall take all reasonable steps necessary to ensure that all persons employed in any work in connection with the contract, have full knowledge of the Official Secrets Act and any regulations framed thereunder.

35.2. Any information obtained in the course of the execution of the contract by the Contractor,: his servants or agents or any person so employed, as to any matter whatsoever, which would or might be directly or indirectly, of use to any enemy of India, must be treated secret and shall not at any time be communicated to any person.

35.3. Any breach of the aforesaid conditions shall entitle the Purchaser to cancel the contract and to purchase or authorise the purchase of the stores at the risk and cost of the Contractor, In the event of such cancellation, the stores or parts manufactured in the execution of the contract shall be taken by the Purchaser at such price as he considers fair and reasonable and the decision of the Purchaser shall be final and binding on the Contractor.

Section V: Special Conditions of Contract (SCC)

The following Special Conditions of Contract (SCC) will apply for this construction work. The corresponding clauses of General Conditions of Contract (GCC) relating to the SCC stipulations have also been incorporated below. These Special Conditions will modify / substitute / supplement the corresponding (GCC) clauses.

Whenever there is any conflict between the provision in the GCC and that in the SCC, the provision contained in the SCC shall prevail.

(Clauses of GCC listed below include a possibility for variation in their provisions through SCC. There could be other clauses in SCC as deemed fit).

Sl. No	GCC Clause No.	Topic	SCC Provision
1	8. 2	Packing and Marking	No Change
2	11. 2	Transportation of Domestic	No Change
3	12. 2	Insurance	No Change
4	14. 1	Incidental Services	No Change
5	15	Distribution of Dispatch Documents for clearance / Receipt of	Not applicable
6	16. 2, 16. 4	Warranty Clause	No Change
7	19. 3	Option Clause	Please refer, as per Sl.No 16 below
8	20. 1	Price Adjustment Clause	No change
9	21. 2	Taxes and Duties	No change
10	22, 22.1, 22.2, 22.3, 22.4, 22. 6	Terms and Mode of Payments	Please refer as per Sl.No 17, 18 and 19.
11	24.1	Quantum of LD	No change
12	25.1	Bank Guarantee and Insurance for Material loaned to Contractor	No change
13	33.1	Resolution of Disputes	No change
14	36.3.2, 36. 3. 9	Disposal/ Sale of Scrap by Tender	Not applicable
15	**Site Visit**	The successful contractor has to visit the site before commencement of work and procure/ fabricate the materials as per the site requirement. Payment shall be made as per actual certified work and no payment will be made against the extra quantity brought to site.	
16	**Optional Quantity/Additional Work order**	Quantities mentioned in the Schedule of Items are approximate and may vary as per actual work done/ site requirement; contractor shall not claim any extra rate on this account. BRBNMPL may extend the Work order/place additional work order upto 50% of Contract value, at a later date at the quoted rates within 06 months from date of successful completion of this caption work.	

17	**RA Bill**	i. The value of work done, less recovery if any will be payable as per progress of work as running account bills subject to satisfactory completion of work as per measurements submitted for certification to BRBNMPL Officer in MS excel MS sheets in standard measurements sheets. Deductions will comprise the deductions as stipulated including statutory deduction. ii. All progress payments made / RA bills paid shall be regarded as payment by way of advance against final payment only and not as payment for the work completed. iii. The contractors must finally complete the work strictly in accordance with the Specifications and drawings, if required, by reconstructing or rectifying faulty work. iv. All R/A bills/ invoices for progress payments as well as for final payments shall be submitted in prescribed printed computerized forms supported by detailed measurement of items of work. v. The minimum value of interim bill/monthly bill/progressive running account (RA) bill shall not be less than as mentioned in the tender form. vi. All payments to the Bidder shall normally be made by Account Payee Cheque/Electronics clearing facility. All Bank charges in connection with payment by way of Demand Draft on specific request to the Bidder shall be borne by the Bidder /RTGS on submission of the request by the bidder as per Finance Department requirement.
18	**Final Bill**	The final bill shall be submitted by the Bidder within 1 (one) months from the date of completion of the works. The final bill submitted by the Bidder shall be processed for payment only after receipt of ―No Claim Certificate and the clearance of site of all rubbish, debris, vats, tanks, materials, temporary structures and handing over the site in a tidy and clean condition to the BRBNMPL.
19	**Extra Items in the works**	Any extra items that are found to be necessary during the course of work, the same shall have to be executed by the contractor with written instruction from BRBNMPL. The rates for the extra items shall be at per with KPWD/CPWD Schedule of Rates with consideration of applicable taxes (VAT/GST). OR as per Market rates (for items which are not available in the KPWD/CPWD Schedule of Rates) with 10% contractor's profit.

20	**Liquidated Damages**	If the contractor fails to complete the work within the time frame as incorporated in the contract, BRBNMPL shall, under the contract, may deduct from the contract price, as liquidated damages, a sum equivalent to the 0.5% of the delayed contract value for each week of delay or part thereof until actual completion, subject to a maximum deduction of 10% of the delayed contract value.
21	**Defects Liability Period:**	Defects Liability period shall be 12 (twelve) months from the date of completion of works. Any defect noticed during the DLP shall be rectified by the contractor at his own cost. In case of default by the contractor, BRBNMPL may get the defects rectified by engaging other person and make payment for the same and all expenses thus incurred shall be at the risks and costs of the contractor.
22	**Withholding of Payments**	The Employer may withhold payment or, on account of subsequently discovered evidence, nullify the whole or a part of any payment certificate to such extent as may be necessary to protect the Employer from loss on account of the following: a) Defective work pointed out by the Employer and not rectified by the Contractor. b) Failure of the Contractor to make payments properly and regularly to his own workers, to his Sub-Contractors, to his suppliers, or to nominated Sub-Contractors. c) Damage by the Contractor to the work of other Contractors or Sub-Contractors. d) A reasonable doubt that the Contract cannot be completed for the balance unpaid amount. e) A reasonable doubt that the Contractor intends to leave work items incomplete. f) Failure of the Contractor to execute the Works in conformity with the Contract Documents. g) Failure of the Contractor to meet or keep-up with the approved Construction Program. h) Failure of the Contractor to comply with and all contractual obligations and liabilities stipulated in the Contract Documents.
23	**Security Deposit/ Performance Bond**	Within twenty-one days from the date of issue of notification of award by BRBNMPL, the supplier shall furnish Security Deposit by way of DD / BG to BRBNMPL for an amount equal to 10% of the Order Value les EMD, valid up to Sixty days after date of completion of all contractual obligations, including warranty period. (Please refer GCC Clause 6 under Section IV)

24	**Contract Agreement**:	A formal agreement has to be executed between the contractor and BRBNMPL on Rs. 100/-Non-judicial stamp paper purchased by the contractor within two weeks of submission of Security Deposit/Performance Bond as per the format given in SECTION-XVI. In case Contractor fails to complete the formalities for execution of agreement, Work Order shall be cancelled. In such case, EMD / SD of the contractor shall be forfeited and BRBNMPL may initiate appropriate action as deemed fit. All terms & conditions of this NIT shall be treated as part & parcel of the contract.
25	**Indemnity**	The Contractor shall indemnify the Purchaser from and against all actions, suits claims and demands brought or made against the Purchaser in respect of any matter or thing done or omitted to be done by the Contractor or any of his Sub- Contractor(s) or nominated Sub-Contractor(s) or their employees or workmen in the execution of or in connection with the Works of this Contract and against any loss or damage to the Purchaser in consequence of any action or suit being brought against the Contractor or any of his Sub-Contractor(s) or nominated Sub-Contractor(s) or their employees or workmen for anything done or omitted to be done in the execution of the Works under this Contract.
26	**Correction of Work Before Virtual Completion of Works**	The Purchaser, its representatives shall jointly conduct an extensive inspection just prior to the Virtual Completion of the Works and shall prepare a list of materials, equipment, and workmanship which are defective or damaged or of substandard quality or improperly executed or generally unacceptable due to not being in conformity with the requirements stipulated in the Contract Documents. The Contractor shall promptly remove, replace, re-execute, rectify and make good, to conform to the requirements stipulated in the Contract Documents and to the satisfaction of all concerned, all such materials, equipment, and / or workmanship included or itemized in the said list and the Contractor shall bear and pay for all expenses in connection therewith and consequent thereon and incidental thereto, including the cost for all remedial work on the work of other Contractors destroyed or damaged by such removal, replacement, re- execution, rectification and making good. If the Contractor fails to remove, replace, re- execute, rectify and make good the rejected materials equipment, and/ or workmanship within a reasonable time, fixed by written notice, Purchaser may employ and pay other persons or agencies to carry out such removal, replacement, re-execution, rectification and making good and all expenses incurred in connection therewith, including all damages, losses and expenses consequent thereon and incidental thereto shall be recovered from the Contractor and shall be deducted by Purchaser from any money that may be payable or that may become payable to the Contractor.

27	**Statutory obligations and effective regulations**	Workmen's Compensation Insurance Policy to all of his workmen engaged for the said job to be purchased and copy of the same to be submitted to BRBNMPL. In addition, Contractors All Risk Insurance Policy inter-alia covering the following shall be taken: a) i. CAR Policy shall be taken for a sum of which is equal to the contract value for the period of completion including Defects Liability Period. BRBNMPL shall be the beneficiary and the Contractor shall submit the CAR Policy with the Owner. ii. Third Party Insurance (Public Liability Insurance) to cover for any damages to the third party. This shall be upto the end of the DLP and shall include any damage to the properties and/or injury including death to persons of the general public or anyone else deemed to be third party. iii. Civil commodities, risks war and other disturbances. b) Policy to indemnify the Employer against all claims, damages & compensation under the provisions of the Workmen's Compensation Act 1923, payment of wages Act 1938, Fatal Accident Act, apprentices Act 1961, Industrial disputes Act 1947, Contract Labour & Regulation Act 1970 and other relevant Acts listed elsewhere. This shall be for the period upto Final Completion of work including DLP.

28	**Termination**	If the Contractor shall be adjudged bankrupt or if he should make a general assignment for the benefit of his creditors, or if a receiver shall be appointed on account of his insolvency, or if he should persistently or repeatedly refuse to carry out the work diligently, or if he should fail to provide enough properly skilled workmen or proper materials or equipment or plant and machinery or tools or anything else necessary for the progress of the works in accordance with the approved Construction Program, or if he should fail to make prompt payments to Sub-Contractors or to suppliers for materials or equipment or to his workers, or if he should persistently disregard laws or ordinances or instructions of the Purchaser, or if he should be guilty of a Violation of breach of any provision of the Contract, or if he has abandoned the Contract, or if he has failed to commence the works, or if he has suspended the Works, then the Purchaser/Purchaser on the basis that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the Contractor seven days' notice in writing, terminate the employment of the Contractor and take possession of the premises and of all materials, equipment, tools, and plant and machinery thereon and use these as Purchaser‘s property for the completion of the Works. In such case the Contractor shall not be entitled to receive any further payment until the work is completed. If the amount due to the Contractor for the work carried out by him as per the Contract terms exceeds the expenses, including for additional management and administrative services, for completing the Works and in respect of the damages and / or losses suffered by the PURCHASER due to the Contractor‘s default, then such excess shall be paid to the Contractor within three months of the Final Completion of the Works. If such expenses for completing of the Works and in respect of the Damages and / or losses suffered exceed such amount due then the contractor shall pay the difference to the PURCHASER within one month of receiving the notification to that effect from the Purchaser. The expenses incurred by Purchaser for completing the Works and in respect of the damages and / or losses suffered by him due to the Contractor‘s default, shall be certified by the Purchaser and his decision on this matter shall be final and binding on the Contractor.
29	**Resolution of Disputes / Arbitration**	If any dispute arises after the issue of LOI /Work Order and during the execution of the project which is not resolved within 30 days of their arising, they shall be referred to a sole arbitrator to be appointed by the Managing Director of BRBNMPL. The governing law in this regard will be The Arbitration and Conciliation Act, 1996 of India. The court of Mysuru (Karnataka State) only shall have jurisdiction to deal with and decide any legal matter of dispute whatsoever arising out of any LOI/ Work order placed by BRBNMPL.

30	**Architect for the work**	**An Architect has been appointed for design and execution of the work. During execution, Architect shall closely monitor the work and contractor is liable to follow the instructions/ directions (approved by BRBNMPL) issued to them. Architect's scope of work includes but not limited to the followings:** a) Day to day site supervision to ensure that the Contractor carry out the works according to the drawings and specifications supplied to them. b) For day-to-day close supervision/ monitor the progress of the work to complete the work within the allotted time period, the Architect will employ a site Engineer / Resident Engineer, who will generally carryout the supervision under the Architects guidance to see the quality of workmanship and materials used. Also monitoring and ensuring the progress of work as per time schedule. c) To check, measure, scrutinize and certify the Contractor's Running Account Bills and Final Bill within the prescribed time schedule with the Contractor in conformity with the Contract Agreement between BRBNMPL and the Contractor. d) To recommend for Extension of time as per Work Order clause provision, if necessary. e) To recommend for Work Completion Certificate to be issued to the Contractor.
31	**Water and Electricity**	Arrangement of water and electricity is Contractor's responsibility. However, single supply point of Water and Electricity shall be provided from the available source, but arrangement for drawing the same to the place of work, has to be done by the contractor in proper way. One Energy Meter has to be arranged by the contractor and consumption of electricity shall be paid on commercial rates.

32	**Notices, Fees Regulations**	The Contractor shall comply with all applicable laws and government acts including the By-laws or regulations of local authorities relating to the Work in so far as construction, fabrication and installation activities are concerned and he shall obtain from the local authorities all permissions and approvals required for the plying of trucks, construction of machinery etc., and also for constructions of temporary offices, labor camps, stores and other temporary structures in connection with the work and the Contractor shall give all notices and pay all fees and charges that are and that can be demanded by law there under. In the Contract Price for the work the Contractor shall allow for such compliance and work and for the giving of all such notices and shall include the payment of all such fees and charges.
33	**License and Permit**	All licenses and permits for the materials under Government control and those required to be obtained by the Contractor without any liability / expense to the Owner and the Project Management Consultancy for the execution of the Work shall be directly obtained by the Contractor. The Contract Price shall include all transportation charges and the other expenses that may be incurred in this connection.
34	**Royalties and Patent Rights**	All royalties or other sums payable in respect of the supply and use of ay patented articles, processes or inventions for the carrying out of the Work as described by or referred to in the Contract Documents shall be deemed to have been included in the Contract Price.
35	**Project and Site Organisation Description**	Tenderer must attach a description of the organization proposed to be committed for execution of the work. Organization chart must include full particulars and designations of key persons, number and categories of home office and filed personal along with qualifications and experience. The description shall show lines of authority / responsibility / Communication together with a written description of the overall working of the organization with particular emphasis on the Home office / site interfaces and monitoring and control of progress.
36	**Construction Schedule / Method Statement**	Tenderer to submit a detailed CPM chart indicating major milestones, such as Civil works / Electrical / Networking / Finishing items / Internal water supply / HVAC works / Plumbing and sanitary, etc. along with method statement in order to complete the work as per schedule.

Section VI: List of Requirements as per Scope of work

a. The Scope of work under this contract will broadly include the "**Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru"** as called for.

b. To execute the works mentioned in the BOQ as per the Technical Specification (Section-VII), CPWD/ KPWD specifications (whichever applicable) and to the satisfaction of the CONSULTANT and officials from BRBNMPL. To maintain all standard Registers/Formats as per KPWD/CPWD.

Section VII: Technical Specifications

TECHNICAL SPECIFICATION OF MATERIALS

1. Materials shall be of the approved quality. A list of materials of approved brand and manufacture is indicated in the annexure. If the list of materials mentioned above stipulates two or more or alternative brands/makes of any product, the decision as to which brand/make shall be used in the work shall be taken by the Architects/Employer and the contractor shall provide the brand/make so selected without any extra cost. Testing of materials even of approved brand shall have to be done by the contractor at their own cost, whether it is indicated in the list of "Mandatory Tests" or not to ensure quality. Materials stamped with ISI Mark shall be used if available.

   In case, materials are required to be obtained from any manufacturer other than those listed on account of non-availability then prior approval from Architects will be necessary supported by relevant test certificates qualifying the required standard. Further Tests as directed by the Architects shall also be carried out by the contractor at their own cost, if required.

2. Contractors shall obtain approval of the Architects/Owner of sample of all materials before placing order and the approved sample shall be carefully preserved in an appropriate manner at the site office for verification by the Owner/Architects.

3. For standard bought out items, the sizes manufactured by the firms listed shall prevail when there is discrepancy in the sizes mentioned in the schedule without any financial adjustment.

4. Materials shall be tested at site/any approved Testing Laboratory. The Laboratory Test Certificate in original shall be submitted to the Architects and then entire charges connected with testing including charges for repeated tests if ordered, shall be borne by the Contractor. Test results are also to be recorded at site registers appropriately.

5. It shall be obligatory for the Contractor to furnish certificates, if demanded by the Architects, from manufacturer or the material supplier, stating that the work has been carried out by using their material.

6. All materials supplied by the employer/any other specialist firms shall be properly stored and the Contractor shall be responsible for its safe custody until they are required on the works and till the completion of work.

7. All equipment and facilities for carrying out field tests on materials shall be provided by the Contractors with out any extra cost.

8. Unless other wise shown on the Drawings or mentioned in the "Schedule of Quantities" or any where in the contract. The quality of materials, workmanship, dimensions etc. shall be as specified herein under.

9.1 Earth for filling

Shall be selected earth suitable for filling and as approved by Architects and shall be free from building rubbish or organic decomposed material. They shall be obtained either from excavation or brought from outside, as specified in the schedule of items. Black Cotton Soil shall not be used for filling.

9.2 Cement

Cement conforming to IS:269/IS:455 shall be used. The use of cement other than ordinary Portland cement/Blast furnace slag cement may be allowed for small quantity with prior approval of Architect/Owner.

Cement shall be stored in dry weather proof godown/shed built by the contractor at his own cost in order to prevent deterioration by dampness or intrusion of foreign matter. Not more than 10 bags should be kept in one stack and it shall be stored in such a manner as to permit easy access for proper inspection. It shall be stored in such a way as to allow the removal and use of cement in chronological order of receipt. i.e., first received being first used. Cement deteriorated and/or clodded shall not be used on work but shall be removed at once from the site at contractor's cost.

Daily record of cement received and consumed shall be maintained by the Contractor in the cement register at site and submitted to Architects, if called for. Theoretical consumption vis-à-vis materials brought at site by the Contractor shall also be submitted with proper documents with every bill for verification. A chart showing the consumption of cement for different items of work is annexed. Consumption of cement in the corresponding items of work under the contract shall be computed on the basis of the quantities shown in the table subject to a variation of plus/minus three percent. The weight of 1 cum. of cement shall be taken as 1440 Kg. for the items not available in the enclosed cement consumption chart CPWD schedule shall be followed.

9.3 Lime

Lime shall be made from approved Lime Stone or Kankar and properly burnt and shall be as per IS:712-1984. It shall be free from excess of unburnt kankar or lime stone ashes or other extraneous materials and shall be stored to prevent damage by rain, moisture or air slaking and damages lime shall not be used but shall be removed from the site of work forthwith at contractors cost. Lime shall be slaked with fresh water and screened through appropriate screens and stored and used within 14 days provided it is protected from dyeing out.

9.4 Fine aggregate

Sand shall be from natural source, chemically inert, clean, sharp, hard, durable and well graded and free from deleterious materials not exceeding the permissible limit as per IS:383-1970. The Silt Content shall be within 8%. If it is in excess, washing shall be done in an approved manner to bring it within allowable limit.

The Fine aggregate for concrete shall be graded and the Finest Modulus shall be between 2.60 to 3.20. The finest modulus of fine aggregate shall be between 1.80 to 2.60 for plaster and masonry work.

The fine aggregate shall be stacked carefully on a clean hard dry surface so that it will not

get mixed up with deleterious foreign materials. If such a surface is not available brick floor or a thin layer of lean concrete shall be prepared.

The percentage of deleterious materials shall be within the permissible limits as specified in IS:383-1970.

9.5 Coarse Aggregate

Shall consist of crushed or broken stone 95% of which shall be retained on 4.75mm IS test Sleve. It shall be obtained from crushing Granite, Quartzite, Trap, Basalt or similar approved stones. Coarse aggregate can be chemically inert when mixed with cement and shall be roughly cubical in shape and free from soft friable, thin, laminated or flaky peaces. The maximum percentage of materials shall not exceed those specified in IS:383-1970. The Coarse aggregate used in the work shall conform to the grading as per limit specified in IS:383-1970.

9.6 Steel Reinforcement

Mild steel bars:
Mild steel reinforcement bars shall conform to IS:226-1962 "Standard Quality" or IS:432-1966-Grade-I. Other qualities of steel shall not be acceptable.

9.7 High Strength Deformed Bars

Where deformed high strength bars are specified, the contractor shall obtain the material from one of the following:

a. "Tistrong"-II as manufactured by M/s. Tata Iron and Steel Company conforming to IS:1139-1966 obtained from TISCO;

b. "Tor steel" as manufactured by M/s. Hindustan Steels or any ISI approved manufacturers conforming to IS:1786-1966;

c. Approved re-rollers of Tata /Sail;

d. Local dealers, if required for minor quantities.

Testing of bars will be necessary as indicated in "Mandatory Test".

9.8 Bricks

The bricks shall be locally available Kiln Burnt bricks of generally regular and uniform size, shape and colour, uniformly well burnt through out but not over burnt. They shall be free from cracks or other flaws.

They shall show a fine grained, uniform, homogenous and dense texture on fracture and be free from lumps of lime, laminations, cracks, air hole, soluble salts causing efflorescence or other defects which may in any way impair their strength, durability, appearance, usefulness for the purpose intended. They shall not break even after being dropped on the ground on their flat face in a saturated condition from a height of 60.00 cms. (About Two feet).

The size of brick shall be nominally 250mm x 125mm x 75mm or 230mm x 115mm x 65mm only.

Tolerance on dimensions up to (+ or -) shall be permitted. The dimension of bricks shall be tested as per method prescribed in CPWD Specification.

After immersion in water , absorption by weight shall not exceed 20% of the dry weight of the brick when tested according to ISS No. 1077-1970. The bricks shall have a minimum average compressive strength of 50 Kg/cm2 as specified in nomenclature of the item. The compressive strength of any individual brick on testing shall not fall below the average compressive strength by more than 20% (Twenty percent). The rating of efflorescence of bricks shall not be more than 'Moderate'.

The bricks to be used for the work shall be approved by the Owner/Architects before hand.

9.9 Water

Water for mixing Cement/Lime/Surkhi mortar of concrete shall not be salty or blackish and shall be clean, reasonably clear and free from injurious quantities of deleterious materials. It shall not contain any sugar or excess of oil, acid and injurious alkali, salts, organic matter which will either weaken the mortar or concrete or cause efflorescence or attack the steel in reinforced cement concrete. Water shall be obtained from sources approved by the Architect. Potable water is generally considered satisfactory for mixing and curing concrete, mortar, masonry etc. Water shall be tested once before undertaking the construction work in an approved testing laboratory to establish its suitability. All charges connected therewith shall be borne by the Contractor. The percentage of solids in the water shall not exceed the limit specified in IS:456-1978. The Ph value of water shall generally be noted less than 6.

9.10 Timber

Timbers for carpentry/joinery works of all description shall be as specified in schedule and seasoned, naturally or artificially as indicated therein. These shall be free from knot, shakes, fissures, flaws, sub- cracks and other defects to a reasonable extent. Architect's decision in this regard is final and binding. The moisture content for timber normally should not exceed the following limits.

i) Timber for frames : 14%

ii) Timber for planking/shutters etc.: 12%

Tolerance up to maximum 5% on above is permissible.

In measuring cross-sectional dimensions of timber for the frames/shutters styles, rails or panel members, tolerance up to 1.5mm shall be allowed for each planed surface.

9.11 Flush Doors

The doors manufactured by Indian Plywood Manufactures Limited. or M/s. Sita Board Mysore Commercial United Limited. Shall be used. The shutter shall be provided with lipping. The shutter shall be hot pressed.

All flush doors shall be ISI-stamped and obtained from approved manufacturer as listed, shall be solid core phenol formal dehyde bonded exterior grade unless otherwise specified. Destructive test as specified in the list of "Mandatory" Tests" are to be carried out by the contractors at his cost.

9.12 Steel Windows and Doors

Steel windows and doors shall be fabricated out of steel sections. They shall be obtained from IS approved manufacturers.

9.13 Glazed Tiles

White or coloured glazed tile shall be obtained from an approved manufacturer and shall be flat and true to shape they shall be free from cracks, crazing, spots, chipped edges and corners. The glazing and colour shall be of uniform shade and unless otherwise specified the tile shall be as per manufacturer's specification. Tolerance in dimension may be +_ 1.0mm in sizes and +_ .5mm in thickness. Testing as indicated in list of "Mandatory Test" shall be performed and all charges thereof shall be borne by the Contractor.

9.14 Glazing

Glass used for glazing shall be sheet glass unless other wise specified clear or obscured as directed by the Architects/Owner of approved quality, free from flaws, specks, bubbles and shall be 2.9mm thick up to 0.60 x 0.60 M size and for larger size it shall be 4mm thick unless otherwise specified in the Schedule of Quantities.

9.15 C.I. Rain Water Pipes

All. C.I. pipes and fittings shall be of approved manufacturer free from cracks, chipped edges or corners and other damages. The pipe shall be IS Stamped.

9.16 C.G.I. Sheets

C.G.I. Sheets shall be of the gauge specified in the description of the item. The sheets shall be free from cracks, split edges, twists, surface flaws etc. They shall be clean, bright and smooth. Galvanising shall be uninjured and in perfect condition. The sheets shall show no signs of rust or white powdery deposits on the surface. The corrugations, shall be uniform in depth and pitch and parallel

9.17 Paints

Dry distemper, oil bound distemper, cement primer, oil paint, enamel paint, flat oil paint, plastic emulsion paint, anti corrosive primer, red lead, yellow zinc chromate, water proof cement paint shall be from an approved manufacturer without any admixture shall be used, except for addition of thinner, if recommend by the manufacturer.

9.18 Cement Admixtures

Cement admixtures are to be obtained from approved manufacturer with the explicit approval of the Architects. The use of admixture containing Calcium Chloride, Fluorides, Nitrates and sulphates is prohibited. The Architects decision as regards use of admixture is final and binding.

9.19 Hardware Fittings

The Hardware Fittings, Iron or Aluminium shall be obtained from approved manufacturer and IS stamped, if available. The M.S./Iron fittings are to be oxidised and Aluminium fittings anodised in natural colour mat satin finish, even if not otherwise specified.

9.20 Polysulphide Sealant

Polysulphide sealant should be obtained from approved manufacturers.

9.21 Mortars

9.22 Cement Mortar

Cement mortar shall be of proportions specified for each type of work in the schedule. It shall be composed of Portland cement and sand. The ingredients shall be well and evenly mixed together in a mechanical pan mixture, care being taken not to add more water than is required. No mortar that has begun to set shall be used.

Hand mixing shall not be permitted except for unimportant structural members and purely at the discretion of the Bank/Architects.

If hand mixing is done, then it shall be done on pucca water-proof platform. The gauged materials shall be put on the platform and mixed dry. Water will then be added and the whole mixed again until it is homogenous and of uniform colour. The contractor shall use 10% extra cement for hand mixing for which no extra payment will be made.

10.0 Wherever references to codes are mentioned, they shall mean its latest revisions.

PREFERRED LIST OF MATERIALS OF APPROVED BRAND AND/OR MANUFACTURE

CEMENT	:	OP Cement or Slag Cement of A.C.C., L&T, Malabar, Zuvari, Penta.
STEEL	:	Tata, SAIL, TISCO, METCOM, or any ISI approved manufacturer/Re-roller.
WHITE GLAZED TILES	:	1st quality tiles of H&R Johnson/KAJARIA, 1st quality tiles of 'Somani'.
FLUSH DOORS	:	National Plywood, Kit ply green or equivalent ISI approved products. Jackson etc
PLYWOOD/PRODUCTS	:	National, Kit-ply, or equivalent ISI approved products.
STEEL DOORS, WINDOWS & VENTILATORS	:	(i) Bahar Bobbin & Engg. Works (ii) 'Steelex' Industrial Corporation (iii) ISI approved manufacturer.

WATER PROOFING COMPOUNDS	:	'CICO' , 'Accoproof'/equivalent.
PAINTS & DISTEMPERS	:	I.C.I., British Paints, Asian Paints, Janson Nicholson.
REDOXIDE (FOR IPS FLOORING)	:	'Shalimar', 'Blundel', 'Eomite'
RED OXIDE ZN-CHROMATE WATER PROOF CEMENT	:	'Shalimar', 'Asian Paints'
PAINTS	:	'Super Snowcem', 'Durocem'
GLASING SHEET GLASS	:	St:gobain,Modiguard.
HARDWARE FITTINGS		
1. Ferrous	:	'Mowjee' or equivalent ISI approved manufacturer.
2. Non-ferrous	:	'METACO', 'ARGENT' or equivalent ISI approved manufacturer.
3. Door Closer	:	'Ranjan', 'Everite' or equivalent ISI.
BRICK KOBA WATER PROOFING TREATMENT	:	India Water Proofing Company, Bombay, Overseas Waterproofing Corporation.
ROLLING SHUTTERS	:	DIANA/DHARIWAL/FRENCH ENGG.
SAND, FINE AGGREGATES, COARSE AGGREGATES, BRICKS, STONE SLAB, LIME, NEERU	:	To be got approved before use.
PRESSED STEEL DOOR FRAME	:	Multiwyn, T.I. Industries.

EARTH WORK

GENERAL

The excavation will generally refer to open excavation of foundation area wet or dry in all sorts of soils at any depth, unless otherwise specified except hard rocks for which separate provisions are made.

EXAMINE THE SITE

The contractor shall visit and ascertain the nature of the ground to be excavated and the work to be done and shall accept all responsibility for the cost of the work involved.

SETTING OUT

The contractor shall clear the entire site by cutting/uprooting jungles, bushes, grass, vegetation growth and tress and generally level the site and set out the centre line of the building or other involved works and get the same approved from Owner/Architects. It shall be the responsibility of the contractor to install substantial reference marks, bench marks etc. and maintain them as long as required by the Owner/Architects. The contractor shall assume full responsibility for proper setting out, alignment, elevation and dimension of each and all parts of the works.

GROUND LEVEL AND SITE LEVEL

Before starting the excavation the existing ground level of the entire plot shall be taken by the contractor in consultation with the Owner/Architects and a proper record of these levels kept, which shall be jointly signed by the contractor and the Owner/Architects.

EXCAVATION AND PREPARATION OF FOUNDATION FOR CONCRETE OTHER THAN HARD ROCK/

Excavation shall include removal of all materials of whatever nature including moorum, soft rock, boulders, old foundations, concrete, asphalt or paved surfaces etc. at all depths and whether we or dry necessary for the construction of foundation and sub structure including mass excavation for underground reservoir, cess pits, septic tanks etc. where applicable, exactly in accordance with lines, levels, grades and curves shown in the drawings or as directed by the Owner/Architects. The bottom of excavation shall be levelled both longitudinally and transversely or as directed by the Owner/Architects. Should the contractors excavate to a greater depth or width than shown on the drawings or as directed by the Owner/Architects, he shall at his own expense fill the extra depth of width in cement concrete in proportion as directed by the Owner/Architects but in no case with concrete of mix leaner than 1:5:10 cement concrete.

The contractor shall report to the Owner/Architects when the excavations are ready to receive concrete. No concrete shall be placed in foundation until the Contractor has obtained Owner/Architect's approval. In case, the excavation is done through different strata of soil and if the same is payable as per provision in the Schedule of Quantities the Contractor shall get the dimensions of the strata decided by the Owner/Architects for payment. If no specific provisions is made in the schedule of quantities it will be presumed that excavation shall be in all types of strata except hard rock and the contract's rate shall cover for the same, which are treated as a single entity.

After the excavation is passed by the Owner/Architects and before laying the concrete, the contractor shall get the depth and dimensions of excavation, levels, nature of strata (as applicable as per schedule of quantities, and measurement recorded from the Owner/Architects.

SHORING.

The sides of the excavation, if required, should be protected by shoring in such a way as is necessary to secure them from failing in, and the shoring shall be maintained in position as long as necessary. The contractor shall be maintained in position as long as necessary. The contractor shall be responsible for the proper design of the shoring to hold the sides of the excavation in position and ensure safety of persons and properties etc. The shoring shall be removed as directed after the items for which it is required are completed. No extra payment will be made for shoring.

PROTECTION

If instructed by the Owner/Architects all foundation pits, and similar excavations shall be strongly fenced and marked with red lights at night to avoid accidents. Adequate protective measures shall be taken to see that the excavation does not affect or damage adjoining structures. All measures required for the safety of the excavations, the people working in and near the foundation trenches, and people in the vicinity shall be taken by the contractor at his own cost. The Contractor will be entirely responsible for any injury or damage to property caused by his negligence or accident due to his constructional operations.

STACKING OF EXCAVATED MATERIALS

All materials excavated will remain the property of the Owner. The excavated materials, at the first instance, shall be sorted as directed by the Architect/Owner and stacked appropriately by the sides of trenches as directed by the Architects before they are disposed off and levelled within the site at locations directed by the Architect/Owner. Materials suitable and useful for back filling, plinth filling or levelling of the plot or other use shall be stacked in convenient places in such a way so as not to obstruct free movement of man, animals and vehicles or encroach on the area required for constructional purposes. The cost on account of sorting out useful materials/disposal within the site will not be additionally paid for.

BACK FILLING/PLINTH FILLING

All shoring and form work shall be removed after their necessity ceases and trash of any sorts shall be cleaned out from the excavation. All space between foundation masonry or concrete and the sides of excavation shall be refilled to the original surface with approved excavated materials in layers 15cm in thickness watered and rammed with iron and wooden rammers weighing 7.8 Kg. with a base of 20cm. square or 20cm diameter. The filling shall be done after concrete or masonry is fully set and done in such a way as not to cause undue thrust on any part of the structure. Where suitable excavated materials are to be used for refilling, it shall be brought from the space where it is temporarily stacked and used in refilling.

No excavation of foundations shall be filled in or covered up until all measurements of excavations, masonry concrete and other works below ground level are jointly recorded. Black cotton soil shall not be used for back filling or in plinth filling.

DEWATERING.

Rate for excavation shall include bailing of pumping out water which may accumulate in the excavation during the progress of work either from seepage, springs, rain or any other cause

and diverting surface flow if any bunds or other means. Pumping out water shall be done in such approved manner as to preclude the possibility of any damage to the foundation trench, concrete or masonry or any adjacent structure. When water is met in the foundation trenches or in tank excavations, pumping out water shall be from auxiliary pit of adequate size dug slightly outside the excavation. The depth of auxiliary pit shall be more than the working foundation trench levels. The auxiliary pit shall be refilled with approved excavated materials after the dewatering is over.

The excavation shall be kept free from water:

a) During inspection and measurement.
b) When concrete and/ or masonry wall are in progress and till they come above the natural water level and
c) Till the Owner/Architects consider that the concrete mortar is sufficiently set.

SURPLUS EXCAVATION MATERIALS

All excavated materials certified as surplus and not useful, unless otherwise specified, shall be removed by the Contractor from the site in an approved manner at locations to be arranged by him in conformity with local regulations for which no additional payment will be made unless separately included in the bill of quantities. The item of removal of surplus excavated materials shall only be undertaken by the contractor only when specific instruction in this regard has been obtained from The Owner/Architect.

PLAIN REINFORCED CEMENT CONCRETE

All concrete work shall be carried out by the contractor under the supervision of a concrete foreman sufficiently experienced in this type of work.

Ingredients to be used in concrete and Reinforced concrete work.

Ingredients to be used in concrete should conform to the specifications as indicated under “Technical Specifications for Materials" given earlier.

As regards admixture, this may be used with prior approval of Architects/Consultant.

Mix Proportion

The mix proportions shall be selected to ensure that the workability of the fresh concrete is suitable for the conditions of handling and placing, so that after compaction it surrounds all reinforcements and completely fills the form work.

The determination of the proportions of cement aggregates and water to attain the required strength shall be made as follows:

a) By designing the concrete mix; such concrete shall be called "Design mix Concrete" or

b) By adopting nominal concrete mix; such concrete shall be called "Nominal Mix Concrete". Design mix concrete shall be preferred to nominal mix. If design mix concrete cannot be used for any reason on the work for grades of M20 or lower, nominal mixes may be used with the permission of the Architect/Consultant by using higher cement content at no additional cost to the owner.

Design Mix Concrete

The mix shall be designed to produce the grade of concrete having the required workability and characteristic strength not less than approximate values given in Table 'A'. The procedure given in Indian standard SP-23 should be preferred for the design but other standard methods may also be followed. As long as quality of materials does not change a mix design done earlier may be considered adequate for later work. Grades of concrete lower than M15 shall not be used for reinforced concrete work. M5 and M7.5 grades of concrete may be used for lean concrete bases and simple foundation for masonry walls. These mixes may not be designed and may be obtained from nominal mix concrete.

Ready Mix Concrete of Equivalent strength may be used with the approval of the Architect/ BRBNMPL Engineers.

TABLE A - GRADES OF CONCRETE

Grade of Concrete	Specified characteristic compressive Strength	
	at 7 days	at 28 days
	N/mm2	N/mm2
M10	7	10
M15	10	15
M20	13.5	20
M25	17.00	25
M30	20.00	30
M35	23.5	35
M40	27	40

Nominal Mix Concrete

Nominal mix concrete may be used for concrete of grades M5, M7.5, M10, M15 and M20. The proportion of materials for nominal mix concrete shall be in accordance with Table 'B'.

The proportions of fine to coarse aggregates should be adjusted from upper limit to lower limit progressively as the grading of the Fine Aggregates becomes finer and the maximum size of coarse aggregate becomes larger. Graded coarse aggregates shall be used.

The cement in the mix specified in Table 'B' for any nominal mix be proportionately increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio as specified is not changed.

In the case of vibrated concrete, the limit specified may be suitably reduced to avoid segregation.

The quantity of water used in reinforced concrete work should be sufficient, but not more than sufficient to produce a dense concrete of adequate workability for its purpose, which will surround and properly grip all the reinforcement. Workability of concrete should be controlled by maintaining a water content that is found to give a concrete which is just sufficiently wet to be placed and compacted without difficulty with the means

TABLE 'B' – PROPORTIONS FOR NOMINAL MIX CONCRETE

Grade of Concrete	Total quantity of dry aggregates by Mass per 50 Kg. of Cement to be taken as the sum of the individual masses of Fine and coarse Aggregate (Maximum) Kg.	Proportion of Fine Aggregate to Coarse Aggregate (By Mass)	Quantity of Water per 50 Kg. Of cement (Maximum) Litres.
1	2	3	4
M5	800	Generally 1:2 but subjected to an upper limit of 1:1½ and a lower limit of 1:2½	60
M7.5	625		45
M10	480	34	32
M15	350		
M20	250		30

PRODUCTION AND CONTROL OF CONCRETE

In proportionating Concrete, the quantity of both Cement and Aggregate should be determined either by weight or volume as the case may be. Where weight of cement is determined on the basis of mass of cement per bag, a reasonable number of bags should be weighed periodically to check the nett mass. Where the cement is weighed on the Site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volume in calibrated tanks or weighed, any solid admixture that may be added may be measured by mass; liquid and paste admixture may be measured by volume or by mass. Batching plant where used should conform to IS 4925. All the measuring equipments should be maintained in a clean serviceable condition and their accuracy periodically checked.

Except where it can be shown to the satisfaction of the Architect/Consultant that supply of properly graded aggregate of uniform quality can be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in right proportions when required, the different sizes being stacked in separate Stock piles. The grading of coarse and fine aggregate should be checked as frequently as possible to ensure that the specified grading is being maintained. Where weigh batching is not practicable, the quantities of coarse and fine aggregates may be determined by volume and based with the permission of the Architect/Consultants. No change in proportions or substitutions in materials shall be made without additional tests to show the quality and strength of concrete is satisfactory.

Mixing-Concrete shall be mixed in a standard mechanical mixer. The mixing shall be continued until there is a uniform distribution of the materials and the mass is uniform in colour and consistency. If there is segregation after unloading from the mixer the concrete should be remixed. The mixing time may be 1 ½ to 2 minutes generally. In exceptional circumstances such as mechanical breakdown of mixer, work in remote areas of when the quantity of concrete work is very small, hand mixing may be permitted subject to additing 10% extra cement for which no extra payment will be made to the contractor. When hand mixing is permitted, it shall be carried out on a water-tight platform and care shall be taken to ensure that mixing is continued until the concrete is uniform in colour and consistency.

Workability of concrete should be controlled by direct measurement of water content, and it should be checked at frequent intervals. For nominal mix workability measured by slump test may have the values given in Table "C".

TABLE C

Sl.	Type of Work	When Vibrated	when not Vibrated
1.	Mass concrete in R.C.C. Foundation footings retaining walls and road slabs.	2.5 cms (1")	5 cms (2")
2.	Beams, slabs, columns, with simple reinforcement	2.5 cms to 5 cms (1" to 2")	5 cms to 10 cms (2" to 4")
3.	Thin sections with congested reinforcement	5 cms to 10 cms (2" to 4")	10 cms to 15 cms (4" to 6")

Note: Should conditions governing slump and workability change pointing to advisability of an increased slump, this shall only be done by decreasing the amount of aggregate and not by increasing the amount of water.

Transporting- Concrete shall be transported from the mixer to the form work as rapidly as possible by methods which will prevent the segregation or loss of any of the ingredients and maintaining the required workability. In no case, more than 30 minutes shall elapse between mixing and consolidation in its position. During hot and cold weather, concrete shall be transported in deep containers. Other suitable methods to reduce the loss of water by evaporation in hot weather and heat loss in cold weather may also be adopted.

Placing- The concrete shall be deposited as nearly as practicable in its final position to avoid rehandling. The concrete shall be placed and compacted before setting commences and should not be subsequently disturbed. Methods of placing should such as to preclude segregation. Care should be taken to avoid displacement of reinforcement or movement of form of work. Concrete shall not be dropped into position from a height greater than 2.0m.

Compaction- Concrete should be thoroughly compacted and fully worked around the reinforcement, embedded fixtures and into corners of the form work. Mechanical vibrators should generally be used. Over-vibration or vibration of very wet mixes is harmful and should be avoided. Under vibration is also harmful.

Whenever vibration is to be applied externally the design of form work and the disposition of vibrators should receive special consideration to ensure efficient compaction and to avoid surface blemishes.

Beams and columns shall be vibrated using immersion vibrators. Thin sections like walls of water tanks, chajjah, aprons etc. should be vibrated preferably using surface vibrators. It is better to vibrate in similar intervals for short period of time, rather than at wider intervals for longer periods of time. The vibrator shall be used only to aid compaction and not to push concrete laterally in the forms.

Construction Joints- Concreting shall be carried out continuously up to construction joints the position and arrangement of which shall be indicated by the designer.

When work is to be resumed on a surface which has hardened, such surface shall be roughened. It shall then be swept clean and thoroughly wetted. For vertical joints neat cement slurry shall be supplied on the surface before it is dry. For horizontal joints the surface shall be covered with a layer of mortar about 10 to 15mm thick composed of cement and sand in the same ratio as the cement and sand in concrete mix. This layer of cement slurry or mortar shall be freshly mixed and applied immediately before placing of concrete.

Where concrete has not fully hardened, all laitance shall be removed by scrubbing the wet surface with wire or bristle brushes. care being taken to avoid dislodgement of particles of aggregate. The surface shall be thoroughly wetted and all free water removed. The surface shall then be coated with neat cement slurry. On this surface, a layer of concrete not exceeding 150mm in thickness shall first be placed and shall be well rammed against old work, particular attention being paid to corner and close spots. Work thereafter shall proceed in the normal way.

Curing

Unless otherwise specified, all exposed surfaces of concrete shall be kept continuously in a damp or wet condition by pounding or by covering with a layer of sacking canvass Hessian or similar materials and kept constantly wet for at least 7 days from the date of placing of concrete.

Mere sprinkling of water on vertical surfaces shall not be allowed. The rate for R.C.C./ plain concrete work shall include cost of curing.

Approved curing compounds may be used at no additional cost to the owner in lieu of moist curing with the permission of the Architect/Consultant. Such compounds shall be applied to all exposed surfaces of the concrete as soon as possible after the concrete has set.

Facilities for preparation and Testing of concrete at site:

In order to exercise the required degree of constant control over the concrete material and its preparation the contractor is expected to set up and maintain at his own expense a Testing Laboratory at Site equipped with at least the following equipments:

i) Compression Testing Machine of capacity 80t/100t;
ii) A set of standard sieves;
iii) Measuring cylinders, adequate number of cubes and cylinder moulds and slump cones;
iv) Weighing balance;
v) Vicat Apparatus;
vi) Curing tanks for cubes:

SAMPLING, TESTING AND ACCEPTANCE OF CONCRETE

Samples from fresh concrete shall be taken and cubes shall be made, cured and tested at 28 days in accordance with IS 516.

Tests shall be conducted for compressive strength on 15 cmsx 15cmsx 15cms Cubes of Concrete. Companion Specimens shall be cast from a single batch of concrete and shall be of the same age at the time of testing. In order to get a relatively quicker idea of the quality of concrete, additional tests of compressive strength tests at 7 days shall be carried out in addition to 28 days Compressive Strength Tests. In all cases 28 days Compressive Strengths specified in Table ' A' shall along be the criterion for acceptance or rejection of the concrete

Frequency of Sampling:

The frequency of sampling is indicated in the list of mandatory tests.

Works test cubes shall represent quality of concrete incorporated in the work and taken out in sets of 6 cubes. The concrete for preparation of 1 set of 6 cubes shall be taken from one batch of mixed concrete discharged from mixer. The cubes shall be moulded in accordance with IS Code of Practise. Out of 6 cubes, 3 cubes shall be tested at an age of 7 days. In case of testing in an approved laboratory the contractor shall arrange to transport the cubes from the site to the laboratory and forward the test results to the Owner/Architects. The contractors shall bear all expenses in connection with the preparation test cubes, cost of concrete labour and transportation charges to the approved laboratory etc. including laboratory testing charges and his rate for concrete items shall be coated accordingly.

The Specimens shall be tested as per IS 516. The Samples may be tested at site laboratory generally but should be tested in any other Government Test House or approved laboratory whenever asked for by the Architect/Consultant for which no additional payment shall be made.

The concrete shall be deemed to comply with the strength requirements if, the individual variation is not more than +_ 15% of the average strength of three specimens.

For mix design however, acceptance criterion will be decided based on “Standard Deviations" as per IS 456.
Concrete which does not meet the strength requirement shall be dealt with as under at the discretion of Consultant/Owner:

i) The Structural adequacy of the parts affected shall be investigated and consequential action has needed shall be taken. Costs of any special tests to be advised by the Architect is to borne by the Contractor;

ii) If it is advised by the Consultant to retain the concrete having strength less than that specified payment shall be made at a reduced rate pro-rata to the strength obtained;

iii) If the deficiency in the opinion of the Architect/Consultant is such as to necessitate removal of the concrete from the structure, then on being so directed by the Architect/Consultant the Contractor at his own expense shall remove the portion of the concrete certified as deficient, and replaced by concrete of specified strength at no additional cost.

Where the strength of a concrete mix, as indicated by test, lies in between the strengths of any two grades specified in table 'A', such concrete shall be classified as a grade belonging to the lowest of 2 grades between which its strengths lie. In case the cube test strength shows higher strength that those specified for the particular grade of concrete such concrete shall not be placed in any higher grade nor the contractor shall be entitled for any extra payment on such account.

A register shall be maintained at the site by the contractors with the following details entered and initialled by the contractor and the Architect/Employer.

i) Reference to specific structural members receiving the batch of concrete from which the cubes were cast;
ii) Identification marks on cubes;
iii) Mix of concrete;
iv) Date and time of casting;
v) Crushing strength as obtained at the end of 7 days and 28 days for each set;
vi) Laboratory in which tested and certificate reference.

Concrete of each grade shall be assessed separately and shall be assed daily for compliance. Concrete is liable to be rejected if it is porous or honey-combed, its placing has been interrupted without providing a proper construction joint, the reinforcement has been displaced beyond acceptable standards or construction tolerances have not been met. However, the hardened concrete may be accepted after carrying out suitable remedial measures to the satisfaction of the Consultant/Bank.

If nominal mix concrete made in accordance with the aggregate cement proportions given for the particular grade does not yield specified strength, such concrete shall be classified as to belonging to the appropriate lower grade. Nominal mix concrete proportioned for a given grade shall not, however, be placed in higher grade than the minimum specified.

FORM WORK

The form work shall be not less than 2.5 cms. thick and shall conformed to the shape , lines and dimension as shown on the plans and be so constructed as to remain sufficiently reject during the placing and compacting of the concrete and shall be sufficiently water tight to prevent loss of cement slurry from the concrete.

The allowable tolerances to form work shall be as under ;

i) Deviation from specified dimension of cross-section of - -6mm
Columns and beams - +12mm

ii) Deviation from dimension of footing

a) Dimension in plan - -12mm +50mm

b) Eccentricity - 0.02 times the width of footing in the direction of deviation but not more than 50mm.

c) Thickness - +0.05 times the specified thickness.

If directed by the Architects/Employer, craft paper or polythene sheets shall be used by the contractor to ensure water tightness without additional costs to the Employer Form work or centring shall be constructed of steel or timber or shuttering ply and adequately designed to support the impact load of full weight of wet concrete and labourers without deflection and retain its form during laying, ramming and setting of concrete. Timber used shall be properly seasoned so as to prevent warping when wetted. A camber in all direction of 6mm for every 5 m. span in all slab and beam centring shall be provided to allow for unavoidable sagging due to compression or other causes. All props either timber or steel, shall be straight and of full height and no joints shall be allowed. Where timber props like bullies are used, they shall have a minimum diameter of 100 mm and shall be straight and adequately strong. Props shall be braced with wooden battens and where additional staging is necessary extra care shall be taken to use bigger diameter props with bracing at 4 or 5 levels at no extra cost. All prop shall be supported on sole plates and double wedges. At the time of removing props, wedges shall be gently eased off and not knocked out.

All rubbish, chippings, shavings and saw dust shall be removed from the interior of the forms and shall be cleaned and thoroughly wetted or treated, if considered necessary, with non-sticking mineral oil or any other approved material before concrete is poured at contractor own cost. care shall be taken that oil or such approved material is kept out of contract with the requirement

Form work shall be removed when the concrete has reached a strength of at least twice the stress to which the concrete may be subjected at the time of removal of form work. This shall be stripped without shock or vibration and shall be cased off carefully in order to allow the structure to take up its load gradually. Forms shall not be disturbed until concrete has adequately hardened to take up the superimposed load.

In normal circumstances (generally where temperatures are above 20*C and where ordinary Portland cement is used) forms shall be struck after expiry of the following periods unless otherwise directed at site by the Architects/Employer.

Location	Striking time in days
a) Vertical sides of walls, slabs, beams and columns.	2
b) Bottoms of slabs upto 4.5m span	7
c) tom of slabs above 4.5m span and bottom of beams upto 6m span	14
d) Bottom of beams over 6 m span	21

REINFORCEMENT CLEANING, BENDING, PLACING ETC.

Cleaning of Reinforcement:

Before steel reinforcement is placed in position, the surface of the reinforcement shall be cleaned of rust, dust , grease and any other objectionable substances.

Bar Bending Schedule of Reinforcement

On receipt of structural drawing, contractor shall prepare bar bending schedule of reinforcement and shall got approved by the Employer/Architect.

Cutting in Reinforcement

Before steel reinforcement bars are cut, the contractor shall study the length of bars required as per drawing and shall carry out cutting only to suit the sizes required as per drawings.

Placing and Security

Reinforcement bars shall be accurately placed and secured in position and firmly supported or wedged by precast concrete blocks of suitable thickness, at sufficiently close intervals so that they will not sag between the supports or get displaced during the placing of concrete or any other operation of the works. It is most important to maintain reinforcement in its correct position without displacement and to maintain reinforcement in its correct position without displacement and to maintain the correct specified cover. The contractor shall be responsible for all costs for rectification required in case the bars are displaced out of their correct positions.

Binding Wire

The reinforcements shall be securely tied whenever they cross each other or whenever required for with 20 gauge black soft annealed steel wire. The cost of materials and labour required for binding the reinforcement shall be included in the contractor's quoted rate for reinforcement.

Welding

Welding in lieu of splices may be carried out only after authorisation in writing by the Employer/Architect. Welding shall be carried out as per relevant IS Code of practice. However, no extra payment shall be allowed for the same.

Bend etc.

Bends, cranks, etc. in steel reinforcement shall be carefully formed, care being taken to keep bends out of winding. Otherwise all rods shall be truly straight. For any bend minimum radius of eight times diameter of the bar shall be used unless otherwise specified in the drawings. However, in respect of standard hooks the radius of bend shall be two times the diameter of bar. Heating of reinforcement bars of facilities bending will not be permitted. The bars shall always be bent cold. In case of mild steel reinforcement bars of larger sizes where cold bending is not possible they may be bent by heating with written permission of the Employer/Architect. Bar when bent shall not be heated beyond cherry

red colour and after bending, shall be allowed to cool slowly without quenching. The bars damaged or weakened in any way in bending shall not be used on the work. High strength deformed bars shall in no case be heated to facilitate bending.

Inspection of Reinforcement

No concreting shall be commenced until the Employer/Architects have inspected the reinforcement in position and until their approval have been obtained. A notice of at least 72 hours shall be given to the Employer/Architect by the contractor for inspection of reinforcement. If in the opinion of the Employer/Architect any materials is not in accordance with the specification or the reinforcement is incorrectly spaced, bent or otherwise defective, the contractor shall immediately remove such materials from the site and replace with new and rectify any other defects in accordance with the instruction of the Employer/Architect to their entire satisfaction at his own cost.

Stock Piling of Steel

Reinforcement Steel required shall be stock piled well in advance of the need in the work.

Cover for Reinforcement:

Cover shall be measured from the outer surface of main reinforcement. Cover shall be as follows:

a: At each end of a reinforcing bar, 25mm or twice the diameter of such rod or bar, whichever is greater.

b: For longitudinal reinforcing bar in beam 25mm or the diameter of such rod or bar, whichever is greater.

c: For tensile, compressive, shear or in other reinforcement in slab 15mm or the diameter of such reinforcement whichever is greater.

d: For reinforcement in any other member such as a lintel, chajja, canopy or pardi, 15mm or the diameters of such reinforcements, whichever is greater.

e: For main reinforcement in isolated footing (side & bottom) clear cover shall be 50mm

f: For column bars clear cover shall be 40mm, unless otherwise specified in drawing.

g. For bars in slabs of strip footings and mat foundations clear cover shall be 50mm. Slab bars shall be placed over beam bars in the case of beam and slab type foundation.

h. For any other types covers as specified in I.S. 456 shall be provided.

BRICK MASONRY

BRICK WORK

General

All brick work shall be carried out as shown on the drawings with set backs, projections, curvatures, cuttings, footings etc. No additional cost for use of cut bricks shall be allowed. Wherever the proportion of cement mortar has not been specifically mentioned, cement mortar in the proportion of 1:6 shall be used. Flat brick arches shall be provided wherever required without any extra cost. Brick work shall be kept wet while in progress, till mortar has properly set. Minimum curing period for masonry work shall be 10 (ten) days. On holidays or when work is stopped, top of all unfinished masonry shall be kept wet. Should the mortar become dry, white or powdery, for want of curing, work shall be pulled down and rebuilt at the contractor's expense. All external brick work shall be done from outside by erecting rigid external scaffolds only.

Brick Masonry

Soaking

All bricks shall be immersed in water for twenty four hours before being put into work so that they will be saturated and will not absorb water from the mortar.

Bats

No bats or cut bricks shall be used in the work unless absolutely necessary around irregular openings or for adjusting the dimensions of different course and for closures, in which case, full bricks shall be laid at corners, the bats being placed on the middle of the courses.

Laying

Unless, otherwise specified, the brick work shall be laid in English bond. The brick shall be laid in cement mortar to line, level and thoroughly bedded in mortar and all joints shall be properly flushed and packed with mortar and no hollows left anywhere. Brick shall be handled carefully so as not to damage their edges. They should not also be thrown from any height to the ground but should be pit down gently. All courses shall be laid truly horizontal and all vertical joints made truly vertical. Vertical joints on the course and the next below should not come over one another and shall not normally be nearer than quarter of a brick length. Fixtures, lugs, frames etc. if any shall be built in at place shown in the plans while laying the courses only and not later by removal of bricks already laid unless otherwise instructed by the Architect.

Care shall be taken during construction to see that edges of bricks at quoins, sills, head etc. are not damaged.

The vertically of the walls and horizontally of the courses shall be checked very often with plumb bob and spirit level respectively.

Joints

Joints shall preferably not exceed 10mm (about 3/8") in thickness. The Joints shall be raked out not less than 10mm (about 3/8") deep when the mortar is green where pointing is to be done. When the brick surface are to be plastered, the joints shall be raked to a depth of 5mm when the mortar is green so as to provide good key to plaster.

Uniform raising

Brick work shall be carried up regularly in all cases where the nature of work will admit,

not leaving any part 60cm. lower than another. But where building at different levels is necessary, the bricks shall be stopped so as to give later a uniform level and effective bond. Horizontal courses should be to line and level, and face plumb as shown on the plan. The rate of laying masonry may be upto a height of 80cm (about 32") per day if cement mortar is used, and 45cm (about 18") if lime mortar is used.

Scaffolding

The scaffolding must be strong and rigid stiffened with necessary cross bearers and always decked and bared on the sills with close boarding/ceilings to prevent swings and injury to persons or damage to materials. The contractor shall have to allow other tradesman engaged by the Employer to make use of the scaffolding at no additional cost. Rates for brick work is to include all necessary costs for erection, maintenance and removal on completion of suitable scaffolding needed for the work. If for the interest of the work the contractor has to erect scaffolding in the other properties including local bodies/corporation, the arrangement for the same including licensing fees etc. shall be borne by the contractor and the employer is kept free from any liability on this account.

HALF BRICK WORK AND 75/65 MM THICK BRICK WORK

The mortar mix for half brick and 75/65mm brick work shall be as specified in the schedule of quantities. Half brick thick and brick on edges walls, shall be provided 20 BWG, wire netting reinforcements. For half brick thick wall and brick on edge wall wire netting shall be provided at every third course and at alternate course respectively with the netting 40mm mesh made of 20 SWG black soft iron wire.

BRICK FLAT SOLING

For soling the bricks shall be picked jhama of approved brand, sound, hard, durable, dense, clean, and free from soft spots, cracks, decay and other defects. Brick Bat shall not be used. All the fillings shall be watered and compacted to get maximum consolidation. All necessary trimming or filling for laying of the soling in line and required grade shall be done. The sub-grade shall be marked by stacks and strings for required depth for laying of soling. The cushioning as well as filling of joints shall be done with local sand.

The bricks shall be laid on flat (unless otherwise specified) touching each other. Brick shall be laid in parallel rows breaking bond or in herring bond pattern as directed by the Architects and firmly embedded true to line and filled with local sand.

PLASTERING

Scaffolding

Scaffolding for carrying out plastering work shall preferably be double scaffolding having two sets of vertical supports so that the scaffolding is independent of the walls.

Preparation of surface

All putlog holes in brick work and junction between concrete and brick work shall be properly filled in advance. Joints in brick work shall be raked about 5mm. deep and concrete surface

hacked to provide the grip to the plaster. Projecting burns of mortar formed due to gaps at joints in shuttering shall be removed.

The surface shall be scrubbed clean with wire brush/coir brush to remove dirt, dust etc. and the surface thoroughly washed with clean water to remove efflorescence, grease and oil etc. and shall be kept thoroughly wet prior to application of plaster.

Ordinary cement plaster

The preparation of surface shall be as stated above. The thickness and proportion of plaster shall be as specified in the schedule of items.

To mortar shall be applied evenly with force on the surface to be plastered. The mortar surface shall be finished at once by rubbed over with a trowel till the cement appears on the surface. All corners, angles and junctions shall be truly vertical and horizontal as the case may be and neatly finished. Rounding of corners and junctions where required shall be done without extra charges. Plastering in narrow grooves or making designed grooves or plastered surface are not separately payable. The mortar shall adhere to the surface intimately when set and there should be no hollow sound when struck.

The completed plastered surface shall be cured for a minimum period of 10 (ten) days.

FLOOR FINISHING

TERRAZO (MARBLE CHIPS) FLOORING LAID IN SITU:

General

The thickness of the under layer shall be measured with a permissible tolerance of +-3mm. The thickness of the top layer after polishing shall be measured with a tolerance of +_1.5mm.

Under Layer

Cement concrete of specified mix shall be used. The panels shall be of sizes as directed by Architects/Employer and generally not exceeding 2 sq.m in area and 2M in length for inside situations. In exposed situations the length of any side of the panel shall be preferably be not more than 1.25 metres or as directed. Cement slurry 2.00 Kg. per Sq.m shall be applied before laying of under layer over the cement concrete/R.C.C. surface.

Strip Fixing

Glass strips or aluminium strips as given in the schedule shall be fixed with their top at proper level.

Top Layer

Mortar: The mix for terrazzo topping shall consist of cement with or without pigment, marble aggregate (marble chips) and water. The cement and marble powder shall be mixed in the proportion of 3 parts of cement to one part marble powder by weight. For every part of cement marble powder mix, the proportion of aggregate by volume shall be as follows.

Size of Aggregate		Proportion of Aggregates to binder mix.
For predominantly grade 00,0 and 1	..	1.50 parts
For predominantly grade 2 and 3	..	1.25 parts
For predominantly grade 4 and 5	..	1.25 parts
For mixed size aggregate	..	1.50 parts

Before starting the work, the contractor shall get the sample of marble chips approved by the Architects. The cement to be used shall be ordinary grey cement, white cement, coloured cement or cement with admixture of colouring matter of approved quality in the ration specified in the description of the item or in the ratio to get the required shade as ordered by the Architects. Colouring matter where specified, shall be mixed dry thoroughly with the cement and marble powder and them marble chips added and mixed as specified above. The full quantity of dry mixture of mortar required for a room shall be prepared in a lot in order to ensure a uniform colour. This mixture shall be stored in a dry place and well covered and protected from moisture. The dry mortar shall be mixed with water in the usual way as and when required. The mixed mortar shall be

homogeneous and stiff and contain just sufficient water to make it workable.

The terrazzo topping shall be laid while the under layer is still plastic, but has hardened sufficiently to prevent cement from rising to the surface. This is normally achieved between 18 to 24 hours after the under layer has been laid. A cement slurry preferably of the same colour as the topping shall be brushed on the surface immediately before laying is commenced. It shall be laid to a uniform thickness slightly more than that specified in order to get the specified finished thickness after rubbing. The surface of the top layer shall be trowelled over,, pressed and brought true to required level by a straight edge and steel floats in such a manner that the maximum amount of marble chips come up and are spread uniformly over the surface.

Polishing, Curing and Finishing

Polishing shall be done by machine. About 36 hours after laying the top layer, the surface shall be watered and ground evenly with machine fitted with special rapid cutting grit blocks (carborundum stone) of course grade (No. 60) till the marble chips are evenly exposed and the floor is smooth. After the first grinding, the surface shall be thoroughly washed to remove all grinding mud and covered with a grout of cement or/ and colouring matter in same mix and proportion as the topping in order to fill any pin holes that appear. The surface shall be allowed to cure for 5 to 7 days and then ground with machine fitted with fine grit blocks (No. 120). The surface is cleaned and repaired as before and allowed to cure again for 3 to 5 days. Finally the third grinding shall be done with machine fitted with fine grade grit blocks (No.320) to get even and smooth surface without pin holes. The finished surface should show the marble chips evenly exposed where use of machine for polishing is not feasible or possible, rubbing and polishing shall be done by hand, in the same manner as specified for machine polishing except that carborundum stone of coarse grade (N0. 60) shall be used for the 1st rubbing, stone of medium grade (No. 80) for second rubbing and stone of fine grade (No. 120) for final rubbing and polishing.

After the final polish either by machine or by hand, oxalic acid shall be dusted over the surface 33gm per square meter sprinkled with water and rubbed hard with a namdah block(Pad of woollen rags). The following day, the floor shall be wiped with a moist rag and dried with a soft cloth and finished clean.

Curing shall be done by suitable means, such as laying moist sawdust or ponding water. The finished floor shall not sound hollow when tapped with a wooden mallet.

Precautions:

Flooring in lavatories and bath rooms shall be laid after fixing of water closet and squatting pans and floor traps. Traps shall be plugged, while laying the floors and opened after the floors are cured and cleaned, Any damage done to W.C.'s squatting pans and floor traps during the execution of work shall be made good by the Contractor.

The floor shall be protected from any damage during the execution of work.

EXTERNAL AND INTERNAL PAINTING WORKS

PAINTING

Approved paints, oils or varnishes shall be brought to the site of work by the contractor in their original containers in sealed condition. The materials shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnight's work. The empties shall not be removed from the site of work, till the relevant item of work has been completed and permission obtained from the Architects/Owner. Ready mixed paint as received from the manufacturer without any admixture shall be used.

Commencing work

Painting shall not be started until the Architects/ Owner has inspected the items of work to be painted, satisfied themselves about their proper quality and given their approval to commence the painting work. Painting of external surface should not be done in adverse weather condition like hail storm and dust storm.

The rooms should be thoroughly swept out and the entire building cleaned up, at least one day in advance of the paint work being started.

Preparation of surface

The surface shall be thoroughly cleaned and dusted. All rust, dirt, scales, smoke and grease shall be thoroughly removed before painting is started. The prepared surface shall receive the approval of the Architects/Owner after inspection, before painting is commenced.

Application

Before pouring into smaller containers for use, the paint shall be stirred thoroughly in the containers. When applying also, the paint shall be continuously stirred in the smaller containers so that its consistency is kept uniform.

If for any reason, thinning is necessary in case of ready mixed paint, the brand of thinner recommended by the manufacturer or as instructed by the Architects/Owner shall be used.

The painting shall be laid on evenly and smoothly by means of crossing and laying off, the latter in the direction of the grain of wood. The crossing and laying off consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternately in opposite direction, two or three times and then finally brushing lightly in a direction at right angles to the same. In this process, no brush marks shall be left after the laying off is finished. The full process of crossing and laying off is finished. The full process of crossing and laying off will constitute one coat. Where so stipulated, the painting shall be done by spraying. Spray machine used may be (a) high pressure (small air aperture) type, or (b) a low pressure (large air gap) type, depending on the nature and location of work to be carried out. Skilled and experienced workmen shall be employed for this class of work. Paints used shall be brought to the requisite consistency by adding a suitable thinner.

Spraying should be done only when dry condition prevails. Each coat shall be allowed to dry out thoroughly and rubbed smooth before the next coat is applied. This should be facilitated by thorough ventilation. Each coat except the last coat, shall be lightly rubbed down with sand paper or fine pumice stone and cleaned off dust before the next coat is laid.

No left over paint shall be put back into the stock tins. When not in use, the containers shall be kept properly closed.

No hair marks from the brush or clogging of paint puddles in the corners of panels, angles of mouldings etc. shall be left on he work.

In painting doors and windows, the putty round the glass panes must also be painted; but care must be taken to see that no paint stains etc. are left on the glass. Top of shutters and surfaces in similar hidden locations shall not be left out in paint.

In painting steel work, special care shall be taken while painting over bolts, nuts, rivets, overlaps etc.

Brushes and containers

After work, the brushes shall be completely cleaned of paint by rinsing with linseed oil or with turpentine. A brush in which paint has dried up is ruined and shall on no account be used for painting work, the containers when not in use, shall be kept closed and free from air so that paint does not thicken and also shall be kept closed and free from air so that paint does not thicken and also shall be kept safe from dust. When the paint has been used, the containers shall be washed with turpentine and wiped dry with soft clean cloth, so that they are clean, and can be used again.

PRIMING COAT ON WOOD, IRON OR PLASTERED SURFACE

Preparation of Surface

i) Wooden Surface

The wood work to be painted shall be dry and free from moisture.

The surface shall be thoroughly cleaned. All unevenness shall be rubbed down smooth with sand paper and shall be well dusted. Knots, if any, shall be covered with preparation of red lead made by grinding red lead in water and mixing with strong glue sized and used hot. Appropriate filler material with same shade as paint shall be used where specified.

The surface treated for knotting shall be dry before painting is applied. After the priming coat is applied, the holes and indentations on the surface shall be stopped with glazier's putty or wood putty. The primer shall be prepared on site or shall be of approved brand and manufacture as specified in the item. Paint shall be bitumen paint/aluminium paint or other types of paint as specified in the description of the item. Stopping shall not be done before the priming coat is applied as the wood will absorb the oil in the stopping and the latter is therefore liable to crack.

ii) Iron & Steel surface

All rust and scales shall be removed by scrapping or by brushing with steel wire brushes. Hard skin of oxide formed on the surface of wrought iron during rolling which become loose by rusting, shall be removed.

All dust and dirt shall be thoroughly wiped away from the surface.

If the surface is wet, it shall be dried before priming coat is undertaken.

iii) Plastered Surface

The surface shall ordinarily not be painted until it has dried completely. Trial patches of

primer shall be laid at intervals and where drying is satisfactory, painting shall then be taken in hand. Before primer is applied, holes and undulations, shall be filled up with plaster of Paris and rubbed smooth.

Application

The primer shall be applied with brushes, worked well into the surface and spread even and smooth. The painting shall be done by crossing and laying off as described in cement paint above.

PAINTING WITH READY MIXED PAINT/SYNTHETIC ENAMEL PAINT

Preparation of Surface

i) Wood Work

The surface shall be cleaned and all unevenness removed as specified in wooden surface. Knots if visible, shall be covered with a preparation of red lead. Holes and indentations on the surface shall be filled in with glazier's putty or wood putty and rubbed smooth before painting is done. The surface should be thoroughly dry before painting.

ii) Iron and Steel work

The priming coat shall have dried up completely before painting is started. Rust and scaling shall be carefully removed by scrapping or by brushing with steel wire brushes. All dust and dirt shall be carefully and thoroughly wiped away.

iii) Plastered surface

The priming coat shall have dried up completely before painting is started. All dust or dirt that has settled on the priming coat shall be thoroughly wiped away before painting is started.

Application

The specification described in Cement Paint shall hold good as far as applicable. The number of coats to be applied will be as stipulated in the item. The painted surface shall present a uniform appearance and glossy/mat finish as described in schedule of quantities free from streaks, blisters etc.

FRENCH SPIRIT POLISHING

Pure shellac varying from pale orange to lemon yellow colour, free from resin or dirt shall be dissolved in methylated spirit at the rate of 140 gm. of shellac to 1 litre of spirit. Suitable pigment shall be added to get the required shade.

Polishing new surface

Preparation of surface-The surface shall be cleaned. All unevenness shall be rubbed down smooth with sand paper and well dusted. Knots if visible shall be covered with a preparation of red lead and glue sized and used hot. Holes and indentations on the surface shall be slopped with glazieries putty. The surface shall be then be given a coat of wood filler made by mixing whiting (Ground chalk) in methylated spirit at the rate of 1.5Kg. of whiting per litre of sprit. The surface shall again be rubbed down perfectly smooth with glass paper and wiped clean.

Application

The number of coats of polish to be applied shall be as specified in the item. A pad of woollen cloth covered by fine cloth shall be used to apply the polish. The pad shall be

used to apply the polish. The pad shall be moisture with the polish and rubbed hard on the wood., in a series of over lapping .circles applying the mixture sparingly but uniformly over the entire area to give an even level surface. A trace of linsed oil on the face of the pad facilities this operation. The surface shall be allowed to dry the remaining coats applied in the same way. To finish off, the pad shall be covered with a fresh piece of clean fine cotton cloth slightly damped with methylated spirit and rubbed lightly and quickly with circular motions. The finished surface shall have a uniform texture. In case additional coats are needed for uniformity, the same shall have to be done at no additional cost.

CARPENTRY & JOINERY

GENERAL

Arrangement for procurement of timber sections shall be made well in advance of use to facilitate natural airseasoning at site.

The contractor shall submit test certificate for moisture content and chemical treatment from manufacturers in cases where factory made seasoned and treated timbers have been specified.

No /timber material shall be painted till such time it has been approved by the Architects/ Consultant. A coat of primer shall immediately be applied on receipt of approval from the Architect/ Consultant. The final painting shall be done as indicated in the Schedule or as directed by the Architect/ Consultant, when all other works are generally completed and Architect/Consultant has given approval to proceed with final painting.

If after finishing and erection of wood work any undue shrinkage or cracks due to bad workmanship or material is found, the contractor shall remove the same supply better and approved materials at his own cost.

All wood shavings, cuttings and other rubbish shall be removed and the site left clear as the work progresses. All precautions against fire shall also be taken by the contractor.

WORKMANSHIP

Frames-

The workmanship shall be first class and to the approval of the Architect/Consultants. Scantlings and boarding shall accurately be sawn and shall be of the required width and thickness within allowable tolerance tolerance $\pm$ 1.5 mm on each planed face for sizes and $\pm$ 1 mm for each planed face in thickness. All carpenters work shall be wrought (planed) except where otherwise described. The workmanship and joinery shall be accurately set out in strict accordance with the drawings and shall be framed together and securedly fixed in approved manner with properly made joints. All work is to be properly tennoned, shouldered, wedged, pinned, bedded, etc. and properly glued with approved quality adhesive to the satisfaction of the Architect/Consultant.

All edges of timber frames shall be protected from being damaged during construction by providing rough timber casing securedly fixed and other adequate protective measures.

Doors/windows frames shall have cut rebates. Planted rebates unless shown in drawing shall not be permitted.

The faces of frames or any timber coming in contact with masonry or concrete or embedded in ground shall be treated with hot tar primer or creosoted before they are placed in position.

The frame shall be remaining are in the direction of the Architect/Consultant and passed. Immediately after it is passed, it shall be given a coat of primer. The final

painting or polishing shall be completed only when advised by Architect/Consultant.

Panelled and Glazed Shutter

Solid wood panels for shutter shall be of pattern and size as specified. Generally each panel shall be in a Single width piece. If unavoidable, the panels can be made from more than one piece with the prior approval of the Architect/Consultant. In such cases, the pieces shall be jointed with continuous tongue and groove joints and glued together and reinforced with metal dowels. Jointed pieces of timer shall be of the same species. The styles and rails shall have 12 mm groove in panelled portion, for the panel to fit in. Tenons in rails shall pass through the styles. While assembling leaf, styles shall be left projecting as a horn. After the joinery work is assembled and approved by the Architect/Consultant the joints will be pressed and secured by about 6 mm dia. Bamboo/wooden pins and the horns of styles sawn off.

The grains of the solid panel shall run along with the longer dimensions of the panel. Panels shall be framed into grooves to the full depth of groove leaving can air-space of 1.6 mm and faces shall be closely fitted to the sides of the grooves.

The styles and rails of glazed shutter shall be rebased of sizes as shown in drawing to receive glass.

Allowable tolerance, to styles & rails are $\pm$ 3mm fir each planed face for cross – section and $\pm$ 1mm on each planed face for thickness.

Shutters

Shutters shall be planed at site to match the finished dimension between rebated of frames leaving an uniform gap of not more than 3mm between the frame and the shutter end. Shutters shall be hung by screws, as per drawing and specification and properly threaded in. The finished work shall be true to plumb and true to shape. For double leaf shutters, it shall be fixed, that while closing the left hand lead of the shutters is closed first and the right hand leaf of the shutter overlaps on the left had leaf by minimum 20mm.

Flush door shutters shall be provided with 3 mm thick teak wood external lipping all round the shutter and fixed to it by means of pins and glues.

Where specified or otherwise shown in drawings, opening for vision panels shall be made within shutters at no additional cost. Openings for vision panel in flush shutters shutters shall be provided with 3 mm thick teak wood lipping at the edges without any additional cost.

SPECIFICATIONS FOR WATER PROOFING

1. DAMPROOF COURSE (D P C)

D P C shall be of thickness as shown in drawing or in drawing or in the schedule of quantities. Unless otherwise mentioned, proportion shall be 1 part cement, 2 parts of sand 4 parts of aggregate mixed with approved water proofing compound as per manufacturer's specification. Before laying the concrete, the top surface of the wall shall be thoroughly cleaned of all dirt and loose particles, mortar droppings and laitance, if any, scrubbing with coir or steel wire brush or by hacking, if necessary. The surface is then thoroughly wetted and the concrete is placed . The concrete shall be laid in every case for the full width of the plinth or as shown in drawing. The top surface shall be kept rubbed or rough or double-chequered for adhesion of mortar for brick work. Proper curing shall be done before starting the brick work over D P C .

METAL DOORS, WINDOWS & VARIOUS STEEL WORKS.

STEEL DOORS, WINDOWS etc.

The frames of doors, windows, ventilators etc. shall be formed by cutting section to required lengths and metres. The corners shall be electrically flash welded to form a solid framed welded joints. Sash bars of units shall be tenoned and rivetted into the frames and where they intersect the verticals tie shall be broached and the horizontal tie threaded through it, and the interaction closed by hydraulic presssure. For fixing steel hinges, slots shall be cut in the fixed frames and the hinges inserted inside and welded to the frame at the back. For fixing hinges to inside frmae, the method described for fixing to outside frame may be adopted but weld shall be cleaned or holes made in the inside frame and hinge rivetted. The hinge pin and washer shall be galvanised or aluminium alloy 51 SWP of suitable thickness.

Each side hung shutter shall be provided with suitable protruding hinges and 300mm long peg stays and shall have holes to keep the shutter open in three different position up to 900 (The peg and the arm for the peg stay shall be rivetted).

The handle shall be mounted on the handle plate which shall be welded to the opening frames. The handle shall have a two points nose which will engage with suitable tapered striding plate of brass provided on the fixed frame.

Top hung and bottom hung ventilators shall be provided with two plain hinges, with 300mm long peg stays which will keep the shutter open is three different positions and will act as a stopper too.

Centre hung ventilators shall be made with tow outer frames, with mastic water-proof compound embedded between these two outer frames. Unless otherwise specified the ventilators shall be provided with spring catch which when pulled by a cord, will allow the shutter bottom half to open outside and the top half opening inside.

Steel windows and ventilators shall be fixed to brick work with M.S. lugs of sizes 160 x 16 x 3mm and to concrete work by means of 100mm long counter sunk screw with rawl plugs or other approved fastener after drilling into concrete with a power drill as advised. The lug shall be grouted in concrete (1:2:4) mix as directed.

The frames should not be fixed in position until the structural work has been completed and the free deflection has taken place. The doors, windows etc. shall be erocted in the true plumb, line and level.

All steel doors, windows, ventilators shall be given a cost of anticorrosive zinc-chromate primer at the shop before delivery to site for erection but in no case prior to the materials have been inspected by the Architect / Owner.
Final cost of primer and final painting shall be done after obtaining approval from the Architect / Owner.

STEEL GRILL AND RAILING :

The grills and railing for windows, verandha and balcony etc. shall be of mild steel. The design of grills / railings and shape and sizes of various components shall be according to the drawings.

The edge angles and corners shall be cleaned and cut true to shape. The joints, if possible, shall be mechanically interlocked and neatly spot welded in such a way that the grill is rigid. Grinding of the joints to achieve a neat regular finish shall be done. The grills shall be fixed to true plumb, line and level as per drawing.

Grills etc. shall be painted with one coat of zinc-chromate primer before they are fixed. The final coat of primer and final painting shall be done only after obtaining approval from the Architect / Owner.

ROLLING SHUTTER

Shall be of approved manufacture suitable for fixing in the position ordered i.e. outside, inside, on or below lintel or between jambs. Shutters up to 10 Sq.m. in area shall be manually operated or push and pull type while bigger sizes shall be of reduction gear type mechanically operated by chain or handles. The manually operated or push and pull type shutters shall be used up to a maximum of about 8 Sq.m. clear area without ball bearing and for area above 8 Sq.m. ball bearings shall be used.

These shall consist 1.25mm sheet or as specified with 80mm M.S. laths of best quality mild steel strips machine rolled and straightened with an effective bridge depth of 16mm and shall have convex corrugation. These shall be interlocked together throughout their entire length with end locks. These shall be mounted on specially designed pipe shaft. The lath sections shall be 0.9mm thick for shutters up to 3.5mm width and 1.25mm for shutters 3.5m width or above unless otherwise specified.

The springs shall be of approved make coiled type. These shall be manufactured from tested high tensile spring steel wire or strip of adequate strength to balance the shutters in position. The spring, pipe, shaft etc. shall be supported on strong M.S. iron brackets.

Both the side guides and bottom rail shall be jointless and for single piece of 3.15mm thick steel.

Hood covers shall be made of mild steel sheets not less than 0.90mm thick for shutters having with 3.5m and less. The thickness of M.S. sheet for the hood cover above 3.5m shall be not less that 1.25mm.

Top cover of shaft, spring etc. shall be of the same material as that of lath.

For rolling shutter with wicket-gate night latch shall be provided free of cost.

COLLASPSIBLE GATE

These shall be of approved manufactures and shall be fabricated from the mild steel sections.

The gates shall consists of double or single collapsible gates depending on the size of the openings. These shall consist of vertical double channels each 20 x 10 x 2mm at 10cm centres braced with flat iron diagonals 20 x 5mm and top and bottom rails of T-Iron 40 x 40 x 6mm @ 3.5 kg/m with 40mm dia ball bearings in every fourth double channel, unless otherwise specified.

Wherever collapsible gate is not provided within the opening and is fixed along the outer surface T-Iron at the top may be replaced by flat iron 40 x 10mm.

The collapsible gate shall be provided with necessary bolts and nuts, locking, arrangements, stoppers, handles. Any special fittings like spring, catches and locks, shall be so specified in the description of item where so required.

The gate shall open and close smoothly and easily.

PRESSED STEEL DOOR FRAMES

Materials

Steel door frames shall be manufactured from commercial mild steel sheet of 1.25mm thickness.

Steel door frames with or without fan light shall be made in the profiles indicated in drawing which may be manufactured to suit doors of either hand, opening inwards or outwards as directed by Engineer-in-Charge.

Construction

Each door frame shall consist of hinge jamb, lock jamb, head and if required, angle threshold. The whole shall be welded or rigidly fixed together by mechanical means. Where no angle threshold is required, temporary base tie shall be screwed to the feet of frames in order to form a rigid unit. Where so specified base ties shall be pressed mild steel 1.25mm thick adjustable to suit floor thickness of 35 or 40mm and removable or alternatively, threshold of mild steel angle of section 50 x 25mm minimum shall be provided for external door frames.

Fabrication

Fixing lugs. There shall be three adjustable lugs with split and tail to each jamb without fan light, and four for jamb with fan light.

The head of the fixing lug shall be of one of the following lengths :

(a) 95mm long for use with profile A
(b) 120mm long for use with profile B
(c) 160mm long for use with profile C

The head shall be made from the flat steel strip 25mm wide and not less than 1.60mm thick.

The tail of the lugs shall be 200mm long and shall be made to steel strip not less than 40mm wide and not less than 40mm wide and not less than 1.0mm thick.

Hinges – 100mm mild steel butt hinges shall be used.

In all cases the hinges shall be so fixed that the distance from the inside of the head rebate to the top the upper hinge and distance from the bottom of frame to the lower end of lowest hinge is about 17.5cm. Distance between hinges shall be equally spaced.

Hinges shall be made of steel 2.5mm thick with a zinc-coated removable pin of 6mm diameter. The space between the two leaves of the hinge when closed shall be 3mm., and the leaf that is not welded to the frame shall have four counter sunk holes to take no.10 wood screws.

Mortar Guards :- Mortar guards as instructed by Architects / Engineer-in-Charges shall be provided. These shall be welded to the frame for double shutter doors to make provision for bolts.

Lock-Strike Plate :- There shall be and adjustable lock-strike plate of steel, complete with mortar guard, to make provision for locks or latches complying with the relevant Indian Standards. Lock-strike plates shall be of galvanised mild steel and fixed at 95cm from the head of the frame.

Shock Absorbers :- For side hung door there shall not be less than three buffers or rubber or other suitable material inserted in holes in the rebate and one shall be located on the centre line of the lock strike plate and the other two al least 45cm. above and below the centre line of the lock strike plate. For double shutter doors there shall be two buffers of rubber of similar suitable materials inserted in holes in the rebate in the lock jamb only at the head and spaced 15cm at either side of the centre line of the door.

Finish :- The door frames shall be either hot-dip galvanised or painted or as specified. The surface shall be thoroughly cleaned, free of rust, mill-scale dirt, oil etc. either by mechanical means such as picking and then painted or galvanised as specified.

After pre treatment of the surface, primer coats of zinc-chromate as specified and two coats of pain shall be applied to the exposed surface.

Measurements :- The length shall be measured in running metres correct to a cm out to out of frames.

Rate :- The rate shall be include the cost of labour and material involved in all the operations described above including primer coat as specified but excluding the two coats of paint.

ANTI-TERMITE TREATMENT

Site Preparation :-

Trees, stumps, logs or roots are to be removed from the buildings site. Similarly, the sub-floor area should be kept free from all debris. In order to ensure uniform distribution of the treating solution and to assist penetration, some site preparation may be necessary. The information given hereunder is for guidance in preparing a building site for chemical treatment.

Heavy soils and sloping sites – On clays and other heavy soils where penetrations are likely to be slow and on sloping sites where run off of the treating solutions is likely to occur, the surface of the soil should be scarified to a depth of at least 75mm.

Sandy or Porous Soils :-

On loose, sandy or porous soils where loss of treating solution through piping or excessive percolation is likely to occur, preliminary moistening to fill the capillary spaces in the soil is recommended.

Levelling, Excavations and Filling – All sub-floor levelling and grading should be completed; all cuttings, trenches and excavations should be completed with backfilling place, borrowed fill must be free from organic debris and should be well compacted. If this is not done supplementary treatments should be made to complete the matter.

Concrete Formwork – All concrete formwork, levelling pegs, timber off cuts and other builder's debris should be removed from the area to be treated.

Soil Treatment :-

The treatment for anti-termite for forming a chemical barrier between the ground & wood work or any Cellulose materials shall be done with either of the following chemicals :

Chemical	Relevant Indian Standard	Concentration by Weight percent
(1)	(2)	(3)
a) Aldrin emulsifiable concentrate	IS : 1307-1973	0.5
b) Heptachlor emulsi-fiable concentrate	IS : 6439-1972	0.5
c) Chlordane emulsi-fiable concentrate	IS : 2682-1966	1.0

ESSENTIAL REQUIREMENTS FOR BARRIER AND METHOD OF APPLICATION

Conditions of Formation :-

Barrier shall be complete and continuous under the whole of the structure to be protected. All foundations shall be fully surrounded by and in close contact with the barrier of treated soil. Each part of the are treated shall receive the prescribed dosage of chemical.

Time of Application :-

Soil treatment should start when foundation trenches and pits are ready to take mass concrete in foundations. Laying of mass concrete should start when the chemical emulsion has been absorbed by the soil and surface is quite dry. Treatment should not be carried out when it is raining or when the soil is wet with rain or sub-soil water. The coregoing requirement applies also in the case of treatment to be filled earth surface within the plinth are before laying the sub-grade for the floor.

Disturbance

Once formed, treated, soil barriers shall not be disturbed. If, by chance, treated soil barries are disturbed, immediate steps shall be taken to restore the continuity and completeness of the barrier system.

Treatment for Masonry Foundations and Basements :-

The bottom surface and the sides (up to a height of about 300mm) of the excavations are made for masonry foundations and basements shall be treated with the chemical at the rate of 5 litres per square metre surface area.

After the masonry foundations and the retaining wall of the basements come up, the backfill in immediate contact with the foundation structure shall be treated at the rate of 7.5 litres per square metre for the vertical surface of the sub-structure for each side. If water is used for ramming the earth fill, the chemical treatment shall be carried out after the ramming operation is done by rodding the earth at 150mm centres close to the wall surface and working the rod backward and forward parallel to the wall surface and spraying the chemical emulsion at the above dosage. After the treatment, the soil should be tempted in place. The earth is usually returned in layers and the treatment shall be carried out in similar stages. The chemical emulsion shall be directed towards the masonry surface so that the earth in contact with this surface is well treated with the chemical.

Treatment for RCC Foundations and Basements :-

The treatment shall start at a depth of 500mm below the ground level except when such ground level is raised or lowered by filling or cutting after the foundations have been cast. In such cases, the dept of 500mm shall be determined from the new soil level resulting from the filling or cutting mentioned above, and soil is immediate contract with the vertical surfaces of RCC foundations shall be treated at the rate of 7.5 litres per square metre. The method of treatment shall be the same so that for treatment of Masonry foundation & basement above.

Treatment of Top Surface of Plinth Filling :-

The top surface of the consolidated earth within plinth walls shall be treated with chemical emulsion at the rate of 5 litres per square metre for the surface before the sand bed of sub-

grade is laid. If the filled earth has been well rammed and the surface does not allow the emulsion to seep through, holes up to 50 to 75mm deep at 150mm centres both ways may be made with 12mm diameter mild steel rod in the surface of facilitate saturation of the soil with the chemical emulsion.

Treatment at Junction of the Wall and the Floor :-

Special care shall be taken to establish continuity of the vertical chemical barrier on inner wall surfaces from ground level up to the level of the filled earth surfaces. To achieve this, a small channel 30 x 30mm shall be made at all the junctions of wall and columns with the floor (before laying the sub-grade) and rod holes made in the channel up to the ground level 150mm apart and the iron rod moved backward and forward to break up the earth and chemical emulsion poured along the channel at the rate of 7.5 litres per square metre of the vertical wall or column surface so as to soak the soil right to the bottom. The soil should be tamped back into place after this operation.

Treatment of Soil along External Perimeter of Building :-

After the building is complete, the earth along the external perimeter of the building should be rodded at intervals of 150mm and to a depth of 300mm. The rods should be moved backward and forward parallel to the wall to break up the earth and chemical emulsion poured along the wall at the rate of 7.5 litres per square metre of vertical surfaces. After the treatment, the earth should be tempted back into place.

In the event of filling being more than 300mm, the external perimeter treatment shall extend to the full depth of filling up to the ground level so as to ensure continuity of the chemical barrier.

Treatment of Soil under Apron along External Perimeter of Building :-

Top surface of the consolidated earth over which the apron is to be laid shall be treated with chemical emulsion at the rate of 5 litres per square metre of the vertical surface before the apron is laid. If consolidated earth does not allow emulsion to seep through, holes up to 50 to 75mm deep at 150mm centres both ways may be made with 12mm diameter mild steel rod on the surface to facilitate saturation of the soil with the chemical emulsion.

Treatment for Walls Retaining Soil above Floor level :-

Retaining walls like the basement walls or outer walls above the floor level retaining soil need to be protected by providing chemical barrier by treatment of retained soil in the immediate vicinity of the wall, so as to prevent entry of termites through the voids in masonry, cracks and crevices, etc. above the floor level. The soil retained by the walls shall be treated at the rate of 7.5 litres per square metre of the vertical surface so as to effect a continuous outer chemical barrier, in continuation of the one formed under 6.2.

Treatment of Soil Surrounding Pipes, Wastes, and Conduits :-

When pipes, wastes and conduit enter the soil inside the area of the foundations, soil surrounding the point to entry shall be loosened around each, of such pipes, waste or conduit for a distance of 150mm and to a depth of 75mm before treatment is commenced. When they enter the soil external to the foundations, they shall be similarly treated for a distance of over 300mm unless then stand clear of the walls of the building by about 75mm.

Treatment for Expansion Joints :-

Expansion joints at ground floor level are one of the biggest hazard for termite infestation. The soil beneath these joints should receive special attention when the treatment under 6.4 is carries out. This treatment should be supplemented by treating through the expansion joint after the sub-grade has been laid, at the rate of 2 litres per linear metre.

Precautions for Health Hazard and Safety measures:

All the chemicals used for termite control are poisonous and hazardous to health. These chemicals can have an adverse effect upon health when absorbed through the skin, inhaled as vapours or spray mists or swallowed. Persons handling or using these chemicals should be warned of these dangers and advised that absorption through the skin is the most likely sources of accidental poisoning. They should be cautioned to observe carefully and safety precautions given hereunder particularly when handling these chemicals in the form of concentrates. These chemicals are brought to the site in the form emilsifiable concentrates. These containers should be clearly labelled and should be stored carefully so that children and pets cannot get at them. They should be kept securely closed.

Particular care should be taken to prevent skin contact with concentrates. Prolonged exposure to dilute emulsions should also be avoided. Workers should wear clean clothing and should wash thoroughly with soap and water specially before eating and smoking. In the event of severe contamination, clothing should be removed at once and the skin washed with soap and water. If chemicals splash into the eyes they shall be flushed with plenty of soap and water and immediate medical attention should be sought.

The concentrates are oil solutions and present a fire hazard owing to the use of petroleum solvents. Flames should not be allowed during mixing.

Care should be taken in the application of soil toxicants to see that they are not allowed to contaminate wells or springs which serve as source of drinking water.

MODE OF MEASUREMENTS

The method of measurement for various items in the tender shall be generally in accordance with the latest CPWD practice subject to the following:

1. Excavation :
   (a) Footings : Area of Excavation shall be measured equal to the area of the lowest concrete course or brick flat soling or dry rubble packing as shown on the drawing. Depth shall be measured vertically from ground level to bottom of concrete course or dry rubble packing or brick flat soling as the case may be
   (b) Plinth beams : Depth of excavation for plinth beam shall be measured from ground level upto bottom of beam and width equal to width of beam. If a levelling course is ordered, it shall be measured up to the bottom of the levelling course.
   (c) Where excavation is made in trenches, measurements for cutting shall be taken by means of tape and staff and the width of concrete or rubble packing or brick flat soling as shown on the Drawing shall be considered as width of excavation.
   (d) Where excavation is made for levelling the site, levels shall be taken before start and after completion of work and total quantity of excavation computed from these levels in manner approved by the Architect.

(e) Where soil including soft rock and hard rock are mixed, hard rock after excavation shall be stacked separately. Measurement of the entire excavation shall be taken as indicated above. Excavation of hard rock shall be measured from stacks of excavated hard rock and reduced by 50% for bulk age and voids. The quantity so arrived at shall be paid for under hard rock. The difference between the quantity of entire excavation and quantity payable under hard rock shall be paid as soil including soft rock.

(f) Any additional excavation required for working space, form work, Planking, dewatering, strutting etc. Shall not be measured and paid for separately but rates quoted for excavation shall include for all these factors. No increase in bulk after excavation shall be made.

2. Earth filling:

In open spaces : Filling shall be measure from cross section embankments, levels of which are recorded by means of levels before start of work and after completion of work. When it is not possible to measure filling from cross sections, it may be measured from loose stacks of lorry measurements with previous written permission from the Architect and 20% deduction shall be from the measured quantity to arrive at the net quantity payable

Earth filling in plinth:
The payment of earth filling in plinth shall be made on measurement of finished consolidated quantity.

Disposal :
If payable the net volume shall be based on theoretical calculation.

3. Cement Concrete (Reinforced)

Cement concrete in R.C.C. items shall be measured in cum. without reduction for volume of reinforcements and other inserts.

Items like R.C.C. precast jali, R.C.C. pipes and other such items which are normally manufactured in factories as well as those items which have been specifically mentioned in schedule of quantities shall be measured inclusive of reinforcement.

No deduction will be made for openings up to 0.1 sq.mm. and no extra labour for forming such opening or voids shall be paid for.

Columns shall be measured from the top of the footing and shall be measured through the slab including flare of the column in case of flat slab construction.

Beams shall be measured from face to face of columns / beams and shall include haunches, if any. The depth of the beam (other than raft foundation beams) shall be measured from the top of the slab to bottom of the beam.

In case of combined footings and raft foundation, the exposed portion of beam rib shall be measured as beam and the remaining portion measured in footing / raft slab.

Slab (other than in raft foundation) shall be measured in between bays of beams with deduction for column portion.

Chajja : Only projected portion shall be measured.

Staircase : Measurements shall be in Cu.M. staircase comprising of step, soffit slab, landing slab shall be measured and paid under this item. Side parapet walls, railings, finishing of risers and treads, M. S. reinforcement and plastering etc. shall be paid separately under respective times.

4. Reinforcement :

Shall be measured in lengths of bars as shown in drawing. Weight will be calculated as per standard tables with 3 places of decimals; no allowance being made in the weight for rolling margin. Wastage and binding wire shall not be measured. Authorised overlaps and spacers shall only be measured.

Form work :

Area in contact with concrete shall be measured and paid for. In case of formwork below ground level, no extra shall be payable for earth work in excavation / filling required for such formwork.

5. Brick Work :

Except walls of half-brick thickness or less, all brick work shall be measured in cubic metres.

Under otherwise mentioned wall of half-brick thickness or less shall each measured separately and given in square metres stating the thickness.

Thickness of wall :

Brick walls up to and including three bricks in thickness shall be measured in multiples of half-brick which shall be deemed to be inclusive of mortar joints. Where fractions of half-brick occur due to architectural or other reasons, the measurements shall be taken as full half-brick.

For walling, which is more than three bricks in thickness the actual thickness of wall shall be measured to the nearest centimetres.

Honey combed brick walling shall be given in square metres stating the thickness of wall and the pattern of hone combing. Honey comb openings shall not be deducted.

Deduction :

No deduction or additions shall be made on any account for

(1) ends of dissimilar materials (i.e. joists, beams, lintels, lofts, girders, rafter, purlins, trusses, corbels, steps etc.) up to 500 square centimetres in section.

(2) Openings up to 0.1 Sq.m. in section.

(3) Wall plates, bed plates and bearing of slabs, chajjas and the like where the thickness does not exceed 10cm. and the bearing does not extend over the full width of the wall.

6. Wood Work :

Wood work wrought and framed shall be measured for finished dimensions. No allowance shall be made for wastage and for dimensions supplied beyond those specified. Length of each piece shall be measured overall nearest to a cm. so as to include projections for tenons, scarves or mitres, width and thickness shall be measured to the nearest mm. Cubical contents shall be worked out in units of 10 cubic decimetre in whole numbers.

In case of mouldings, roundings, rebates, circular and varying sections, the sectional area of the piece shall be taken as the area of the least square or rectangles from which such a section can be cut.

7. Steel doors, windows, ventilators, louvers :

Clear area over one face inclusive of exposed frame shall be measured. Holdfasts or portions embedded in masonry or flooring shall not be measured. All composite units shall be measured as fixed. Extra for side hung, top hung and centre hung portions shall be measured from outside of the casement frames.

8. Steel rolling shutters and rolling grills :

Clear width between side jambs and clear height between floor and bottom of lintel / beam shall be measured. Hood shall not be measured separately. The rate should be inclusive of the cost of hood.

9. Collapsible Gate :

The height of the gate shall be measured as the length of the double channels and breadth from outside to outside of the end fixed double channels in open portion of the gate.

10. Flooring, Skirting, Dado :

Flooring shall be measured from skirting to skirting and where the wall surfaces are plastered or provided with dado it shall be measured from plaster to plaster or dado to dado.

The skirting and dado shall be measured clear from the floor to the top of tile, and length shall be between finished tiles faces measured along the floor.

The measurement of floor, skirting and dado shall be in Sq.m.

11. Plastering & Pointing :

All plastering and pointing work shall be measured in square metres unless otherwise described.

Net area of surface plastered (the area of the surface before plastering) shall be measured after deducting half the area of openings. Jambs and soffits, will not be separately added. No deduction will be made for ends of joints, beams, posts, etc.

Plastering in narrow grooves or for designed grooves shall not be separately paid for.

12. Painting, French polishing, White washing, Colour washing and Distempering :

All painting work shall be measured in accordance with IS : 1200.

13. Lime Punning – same as Plastering.

Note : - All work under this contract shall be carried out in accordance with the technical specifications specified in the contract. However, if specifications for any item has not been specified I the contract, the relevant Indian Standard specification applicable to the particular class of work shall apply. In case of any confusion or dispute regarding the meaning and interpretation of any specification for any item, the decision of the Employer / Architects shall be final and binding on the contractors.

Sl No	**Description of Work (1)**	**How Measured (2)**	**Multiplying Factor (3)**
1	Panelled, or Framed and Braced or Ledged and Battened or Ledged battened and Braced joinery.	Measured flat (not girthed), including CHOWKAt or frame. Edges, Chocks, Cleats etc. shall be deemed to be included in the item.	1.30 (for each side)
2	Flush Doors	Measured flat (not girthed), including CHOWKAt or frame. Edges, Chocks, Cleats etc. shall be deemed to be included in the item.	1.20 (for each side)
3	Fully Glazed or Gauzed joinery	- do -	0.80 (for each side)
4	Partly Panelled and Partly Glazed or Gauzed joinery.	- do -	1.00 (for each side)
5	Fully venetioned or louvred joinery	- do -	1.80 (for each side)
6	Weather boarding	Measured flat (not girthed), supporting frame work shall not be measured separately.	1.20 (for each side)
7	Wood shingle roofing	Measured flat (not girthed).	1.10 (for each side)
8	Boarding with cover fillets and match boarding.	Measured flat (not girthed).	1.05 (for each side)
9	Tiles and Slate battening	Measured flat over all; no deduction shall be made for open spaces.	0.80 (for painting all over)
10	Trellis (of JAFFRI) work one-way or two-way.	Measured flat over all; no deduction shall be made for open spaces; supporting numbers not be measured separately.	2.00 (for painting all over)
11	Guard bars, balustrades, gates gratings, grills, expanded metal and railings.	Measured flat over all; no deduction shall be made for open spaces; supporting numbers not be measured separately.	1.00 (for painting all over)
12	Gates and open palisade fencing, including standards,	- do - (see note)	1.00 (for painting all over)

	bruces, rails, stays etc.		
13	Carved or enriched work.	Measured Flat	2.00 (for each side)
14	Steel roller shutters	Measured flat (size of openings) overall, jamb guides, bottom rails and locking arrangement, etc shall be included in the item (top cover shall be measured separately).	1.10 (for each side)
15	Plain sheet steel doors and windows	Measured flat (note girthed) including frame, edges, etc.	1.10 (for each side)
16	Fully glazed or gauzed steel doors and windows.	Measured flat (note girthed) including frame, edges, etc.	0.50 (for each side)
17	Partly Panelled and partly glazed or gauzed steel doors.	Measured flat (note girthed) including frame, edges, etc.	0.80 (for each side)
18	Collapsible gate	Measured flat Isize of opening)	1.50 (for painting all over)
19	R.C.C. Jallies	Measured flat	1.25 (for each side)

Note :- The height shall be taken from the bottom of the lowest rail, if the palisades do not go below it (or from the lower end of palisades, if they project below the lowest rail) up to the top of palisades, but not up to the top of the standards, if they are higher than the palisades. Similarly for gates, depth of roller shall not be considered while measuring the height.

Where doors, windows, etc. are of composite types other than those included in this table, different portions shall be measured separately with their appropriate coefficients, centre line of common rail being taken as the dividing line between the two portions.

Measurement of painting of doors, windows, collapsible gates, rolling shutters, etc. as given in this table shall be deemed to include painting, if required, of all iron fittings in the same shade.

When two faces of a door, windows, etc. are to be treated with different specified finishes, measurable under separate items, edges of frames and shutters shall be treated with the one or the other type of finish and measurement thereof shall be deemed to be included in the measurement of the face treated with that finish.

In case where shutters are fixed on both faces of a frame, measurement for the door frame and shutter on one face shall be taken in the manner already described, while the additional shutter on the other face shall be measured exclusive of the frame.

Whether shutter is provided with clearance exceeding 15cm. at top and / or at bottom, such openings shall be deducted from the overall measurement and relevant coefficients applied.

TECHINICAL SPECIFICATIONS FOR SANITARY AND PLUMBING

1.0 SANITARY WARES AND ALLIED FITTINGS

All sanitary wares with their allied fittings must be first quality (best) of approved make and brand. The contractor must state in his tender clearly the brand and make of sanitary wares for which he has quoted. No extra claim will be entertained for concreting / for encasing the bottom or making bed for setting of I.P.W.C. which are to be included in tender items. The flushing cisterns shall be automatic or manually operated, high level or low level, as specified for water closets and urinals.

2.0 SQUATTING PATTERN W.C. PAN (INDIAN TYPE)

The W.C. Pan shall be of white vitreous Chine of specified size and pattern (Orissa or long pattern as specified) with an integral flushing rim. It shall have the flushing horn in the back unless it is not possible to accommodate cistern to suit this design. The pan shall be of approved quality. It shall have 100mm C.L. or porcelain trap 'P' or 'S' type with minimum effective seal of 50mm and 50 vent arm.

2.1 Fixing of W.C. Pan

The Squatting type W.C. Pan shall be sunk in floor sloped towards the pan in a workmanship like manner, care being taken not to damage the pan in the process of fixing. If damaged in any way it shall be replaced at contractor's cost. It shall be fixed on a proper cement concrete base of 1:3:6 proportions taking care that the cushion is uniform and even without having any hollows between the concrete base and pan and finished just below level of rim of pan to receive the specified thickness of the floor finishing.

The joint between the pan and the trap shall be made with cement mortar 1:1 and shall be leak proof.

3.0 PEDESTAL WASH DOWN SYPHONIC (SINGLE OR DOUBLE TRAP) WATER CLOSET (EUROPEAN TYPE)

The W.C. Pan shall be of white vitreous China unless otherwise specified of one piece construction of wash down type with integral 'P' or 'S' trap as required. It shall be of approved quality and pattern.

3.1 Installation

The weight of the fixture and user are supported on the floor and not on the drainage pipe and this should be done in standard approved method.

3.2 Seat and Cover

The seat with lid shall be of well seasoned teak wood varnished or mahogany polished or plastic seat as specified with rubber buffers and shall be fixed in position by using Chromium plated brass hinges and screws. The seat shall be non-absorptive and free from cracks and crevices in the materials. The plastic seat and cover, where specified, shall conform it I.S. specifications, and shall be of white colour unless otherwise specified.

3.3 Flushing

The flushing of the Squatting and pedestal W.C. Pan shall be done by high level or 'low level' valve less symphonic flushing cistern of approved quality and capacity, as specified. In the former case, the connection between the flush pipe of the cistern and W.C. pan shall be made by using G.I. or lead inlet connection as specified. The other specification will be as for squatting pattern W.C. Pan.

The flush pipe shall be fixed to wall by using holder bat clamps or embedded, as required.

As specified, 12.5 litres or of any other capacity low level Cisterns shall be fitted with all internal fittings, brackets and C.P. brass flushing handle, and connected to the W.C. pan by means of 40mm diameter Chromium plated brass bend and rubber or any other, as specified.

4.1 BRACKETS

The cistern shall be fixed on Cast Iron or rolled steel cantilever brackets or required strength which shall be firmly embedded in the wall or fixed by using wooden plug and screws, to the satisfaction of the Engineer. Depending on the quality of work and type of sanitary fixtures, the fixing of cistern should vary in quality of material and design also. Or it may be installed in other ways like placing on the top at the back of the W.C.

4.2 OVERFLOW

The cistern shall be provided with 20mm G.I. overflow pipe with fittings which shall terminate into mosquito proof coupling secured in a manner that will permit it to readily cleansed or renewed, when necessary.

4.3 FLUSH PIPE

The outlet or flush pipe from the high level cistern shall be of 32mm galvanised (medium quality ITC) iron pipe or lead pipe of minimum thickness of 2.6mm as specified or PVC pipe as required by the Engineer which shall be connected to the W.C. pan by means of and approved type of joint. The flush pipe shall be fixed to wall by using holder bat clamps or embedded as required.

If the connection between the cistern and the W.C. pan is made with G.I. pipe, the bends, off sets shall be made cold.

4.4 PAINTING

Inside cistern and fittings shall be painted with approved bitumastic paint and outside of the cistern, brackets, overflow and flush pipes etc. shall be painted, with any synthetic enamel paint of approved shade and make to give an even appearance. The cost of such painting shall be included in the rate quoted for the flushing cistern.

4.0 STANDING URINALS

5.1 Bowl Urinal

The urinal shall be flat back or angular pattern lipped front basin of required dimensions of white vitreous china and one piece construction with internal flushing box rim of an approved make as specified. It shall be fixed in the position by using wooden plug embedded in the wall with screw of proper size. Each urinal shall be connected to a 40mm dia. waste lead pipe unless otherwise specified, which shall discharge into a channel or a floor trap, or as specified.

5.2 Stall Urinals

The urinal shall and its screen shall be of white vitreous China of approved quality and manufacture. The stall shall be 114cm high and 46cm wide and 40cm deep. The stall shall be provided with 84cm x 36cm division plates. In case of two or more urinals there shall be further division plates similar to end screens. The range shall have 15cm deep tread plates of first class quality unless otherwise specified.

5.3 Flushing

The stall shall be provided with white glazed vitreous China automatic flushing cistern of proper capacity with 6 mm minimum body thickness unless otherwise specified. The cistern shall be complete with fittings and brackets which shall be fixed to the wall. The cistern shall be connected to the stall through standard size C.P. brass flush pipe with spreader arrangement and clamp unless otherwise specified.

5.4 Outlet

Each of stall be provided with C.I. urinal trap with vent arm having C.P. brass outlet grating of size 50mm for one or two stalls and 75mm for more stalls or as specified.

5.0 SQUATTING URINALS

6.1 Squatting plates

The urinal plates shall be of white glazed vitreous China with integral flushing rim of size 600 mm x 350mm as specified. There shall be white vitreous channel with stop and outlet pieces in front. The plate and channel shall be of approved quality.

The Joint between the urinal plate and the flush pipes shall be made with putty or white lead mixed with chopped hemp.

6.2 Outlet

The squatting plate or a range of squatting plates shall be provided with a 65 mm dia. standard urinal C.I. trap with vent arm having 65 mm. C.P. brass outlet grating or as specified.

6.3 Walling

The squatting plate shall have 1.22 m. high wall in front and on either side. These shall be lined as specified

7.0 CISTERN

7.1 Material

A high level cistern is intended to operate with minimum height of 191 cm. and a low level cistern with a height of 60 cm. approx. from the floor finish and the underside of the cistern.

The body thickness of a cast iron cistern shall not in any place be less than 0.5cm and that of an earthenware cistern 1.3cm. The body of a pressed steel cistern shall be of seamless or welded construction of thickness not less than 1.6mm before coating and shall be porcelain enamelled or otherwise protected against corrosion by an equally efficient coating. The cistern with internal parts shall be free from manufacturing faults and other defects and operate smoothly and efficiently. The cistern shall be considered mosquito proof only if there is no clearance anywhere which would be permit a 1.6 mm wire to pass through coupling in the permanent position (i.e. flushing or filling) of the cistern. The outlet fitting of each cistern shall be securely connected to the cistern. In the case of high level, the outlet shall be of 32 mm. Dia. (Nominal bore) and for low level 40mm dia. (nominal bore). The outlet of flush pipe from the cistern shall be connected to the pan by means of putty or cement and for E.P.W.C. with rubber joint and putty. The flush pipe shall be fixed to wall by using holder bat clamps; for the G.I. flush pipe, the bends and others shall be made cold.

The cast iron cisterns shall be painted with the two coats of bitumastic paint on the inside and synthetic enamel paint of approved colour and make to give an even appearance on the outside. The discharge rate of cistern shall be about 5 litres in 3 seconds when connected to an appropriate flush pipe and there shall be no appreciable change in the flush pipe and there shall be no appreciable change in the full discharge. The cistern shall have discharge capacity of 5, 10, 12.5, 1.3 litres with tolerance of +/- 1 ltr. The rate must include the cost of painting of cistern in and outside along with flush pipe as directed.

The cistern for a `stall' type urinal or a w.c. may, depending on situation be of glazed vitreous China, coloured or white with the best quality fittings including brackets, as specified.

7.2 CAPACITY OF CISTERNS AND THE SIZE OF FLUSH PIPE FOR FLAT BACK (BOWL) URINAL

Capacity : The capacity of the flushing cistern and the size of the flush pipe for the number of urinals in a range will be as follow

Number of urinals in range	Capacity of flushing cistern	Size of pipe Main distribution
1	5 Litres	15mm
2	10 Litres	20mm 15mm
3	10 Litres	25mm 25mm
4	14 Litres	25mm 15mm

the joint between the urinal basin flush and waster pipe shall be made by means of putty of white lead mixed with chopped hemp, or as specified in case of lead pipe.

7.3 For Squatting Plate Urinal

Capacity : The capacity of the flushing cistern and the size of the flush pipe for the number squatting place urinals in a rance will be as follows :

Number of urinals in range	Capacity of flushing cistern	Size of flush pipe Main distribution
1	5 Litres	20mm
2	10 Litres	25mm 20mm
3	15 Litres	25mm 20mm

The cistern shall be fixed on R.S or C.I. cantilever brackets of requisite strength which shall be embedded or fixed to the wall by means of wooden plugs and screws.

8.0 WASHING BASINS

8.1 Basin :-

The wash basins shall be of white or coloured vitreous China as specified and of approved quality, make and pattern. It shall be one piece construction with an integral combined overflow. The size of the basin shall be as specified.

8.2 Fittings :-

Each wash basin shall be provided with 15mm C.P. brass pillar taps as specified, 32mm C.P. waster chain and rubber plug, unions, joints etc. complete in all respects of approved quality.

8.3 Fixing :-

The basin shall be supported on a pair of R.S. or C.I. Cantilever brackets of requisite strength embedded or fixed in position by means of wooden cleats and screws. These brackets shall be painted to the required shade including a coat of anti-corrosive paint. The wall plaster on the rear shall be cut to overhand the top edge of the basin.

8.4 Waste Connection :-

The waste shall discharge in to a floor trap leading to a gully trap on ground floor and on upper floor it may be connected to waste stack.

Where specified wash basins shall be provided with a 20mm G.I. puff pipe terminating with a brass perforated cap screwed on to it on the outside of the wall or connected to antisyphon stack. When the waste pipe discharges freely into a channel or floor trap and is of short length without any bends, no puff will be necessary.

9.0 KITCHEN SINKS

Unless otherwise mentioned, the kitchen sink with drain board shall be of white vitreous China as specified and of approved quality, make and pattern. It shall be of one piece construction with an integral combined overflow. The size of the sink and drain board shall be as specified.

9.1 Fittings :-

Each sink shall be provided with 15mm bib cock, 40mm waste, chain and rubber plug, unions, joints etc. complete in all respects as specified and of approved quality.

9.2 Fixing :-

The sink shall be supported on a pair of R.S. or C.I. Cantilever brackets of requisite strength embedded or fixed in position by means of wooden cleats and screws. These brackets shall be painted to the required shade including a coat of anti-corrosive paint.

9.3 Waste Connection :-

The waste shall discharge in to a floor trap leading to a gully trap on ground floor and on upper floor it may be connected to waste pipe stack.

10.0 KITCHEN SINKS

10.1 Mirror :-

The mirror shall be approved make glass with bevelled edges. The size and shape of the mirror shall be as specified. It shall be mounted on an asbestos sheet and shall be fixed in position by means of 4 C.P. brass screws and washers over rubber washers and wooden plugs firmly embedded in the wall. C.P. brass clamps with C.P. screws may be an alternative method of fixing.

10.2 Shelf :-

The shelf shall be of glass of approved quality with edge rounded off or of vitreous China (coloured or white) of approved make the size of shelf shall be as specified. The shelf shall have C.P. brass or aluminium guard rail with rubber washers on positions resting on glass plate and C.P. brass or aluminium brackets which shall be fixed with C.P. brass or aluminium screws to wooden plugs firmly embedded in the wall.

10.3 Towel Rail :-

The towel rail shall be of C.P. brass or aluminium with two C.P. brass or aluminium brackets. The size of the rail shall be as specified. The bracket shall be fixed by means of C.P. brass or aluminium screws to wooden cleats firmly embedded in the wall.

10.4 Chromium plated Stop Cock, Taps, Bib Cocks, Shower set. Gun Metal Peets Valves

Where not mentioned, cocks and taps are to be of brass standard head chromium plated of approved make and pattern. They must be capable to withstand at least 10.5 kg. Per sq.cm. Pressure applied for 5 minutes without leakage. The valve are to be of peet type gunmetal valves. Other conditions remain same as cocks and taps. The cocks and taps of brass bakelite head are to be of `SOMA' brand manufactured by SOMA plumbing Fixtures Ltd.

10.5 Liquid Soap Holder

This shall be glass or P.V.C. or C.P. brass as specified. It shall be fixed in position by means of C.P. brass screw to wooden cleats embedded in the wall. The liquid soap holder shall be of approved make.

10.6 Toilet paper holder

The paper holder shall be of C.P. brass or vitreous China as specified. The rolled wooden paper holder shall be made of well seasoned teak wood.

TECHNICAL SPECIFICATIONS FOR SOIL WASTES PIPES AND FITTINGS

1. PVC PIPES AND FITTINGS:

1.1. Scope:
The scope of supply covers the manufacture, inspection, transportation and door delivery of PVC Pipes and Specials as per the drawing and IS specified herein.

1.2.Technical particulars:
The technical particulars of the pipes and specials shall be in accordance with specification and standards adopted by Kerala Water Authority.

1.3. Inspection of Materials:
The pipes are to be dispatched only after the inspection of pipes at your works by an approved third party inspecting agency or an Engineer authorized from this office, specially deputed for carryout the inspection for testing and certification.Necessary facilities for testing and certification are to be provided by the supplier.The charges for testing shall be met by the supplier. A minimum of 3 days advancenotice is necessary for deputing the depart mental officers for inspection.

1.4.Color code:
The pipe to be supplied should bear a color bandof minimum of 5cm width, 30cm away from one end for easy identification of class of pipes as per standard specification of Kerala Water Authority.

1.5.ISI Marking: The pipes to be supplied under this order shall be with ISI marking only.

1.6.Specific Gravity:
The specific gravity of the material of the pipes shall be within 1.40 to1.46gm/cm3when deter mined in accordance with IS 13360(Part3/scc1) 1995or revisions if any

1.7.Stacking:
Pipes shall be stacked in lots in the order of date of manufacturing on levelgroundStacking of untested Pipes over tested ones shall not be permitted. Each stack shall be given identification boards indicating date of manufacturing and number of pipes in the lot. Dispatching and Loading of pipesin to vehicles shall be arranged in the order of marking.

1.8.Loading,Unloading and Transportation of Poles:
Handling, loading, transportation and unloading should be done in accordance with IS: 7321 of 1974 and its latest amendments and its costs.

1.9. Installation
Step 1 - Cut the Pipe
PVC can be cut easily. You can cut it with a hacksaw, but abrasive disks are made for miter saws that work better to get a straight edge. A joint that is skewed due to pipe not being cut straight can throw off the entire run of pipe.

Step 2 – Deburr and Fit

After cutting, clean all shavings out of the pipe and deburr the inside edges. When the pipe is cut to the proper length, lay it out on the floor with fittings in place to determine if the length is correct. If it is the proper length, proceed to installation.

Step 3 - Clean and Cement

First, the pipe must be cleaned with all-purpose pipe cleaner, called primer. Swab the primer around the end of the pipe and the inside of the fitting to ensure there are no contaminants that can get in the way of adhesion.

PVC is joined with a special type of cement. The cement sets up very quickly, so you must be ready to go as soon as it is applied. Coat the inner surface of the joint with the cement, insert the PVC pipe, and turn the pipe in the fitting a full turn if you can, and then turn it back to ensure that the glue has covered the entire joint. Be certain that the pipe is seated correctly in the joint.

Step 4 – Install Pipe Hangers

Once the PVC pipe is in place, and you have determined it is of proper length, install pipe hangers to support the pipe. This eases strain on the joints that could lead to possible leakage. Follow recommendations for the distances from hanger to hanger, usually every 4 feet, allowing for movement in expansion and contraction. Be sure to protect the pipe from nails, screws, or abrasive materials.

Testing :

Hydrostatic pressure testing (testing with water filled lines) is the only test method recommended and approved for pressure testing GF Harvel PVC and CPVC piping products. During pressure testing appropriate safety precautions must be taken to protect personnel and property from damage should a failure occur. The test pressure and duration of the pressure test performed should meet requirements of any local, state, or federal regulations as applicable. In the absence of any such requirements or regulations the following procedures can be used to properly conduct a hydrostatic pressure test on newly installed PVC and CPVC piping systems.

Strict adherence to proper solvent cementing instructions and set and cure times is essential to ensure the highest system integrity prior to pressure testing. Particular attention should be paid to pipe sizes, temperature at time of installation and any temperature variations over the set and cure period.

All solvent-cemented connections in the system must be fully cured properly prior to filling the system with water.

Pipe must be adequately anchored/restrained to prevent movement during testing.

The system should not be tested until authorized and subsequently witnessed by the responsible engineer.

Extreme care shall be used to ensure complete venting of all entrapped air when filling the system with water. Entrapped air is a major cause of excessive surge pressures that result in burst failures of rigid plastic piping systems.

Air must be removed from the system to prevent it from being locked in the system when pressure is applied.

The system should include the use of air release and air/vacuum relief valves located at high points in the system to vent air during filling, as well as during normal operation of the system.

The system must be filled slowly with water, venting air from valves at piping run ends and at elevations during the filling process. Whether a hydraulic hand pump or available water line pressure is used, any slow build-up of gauge pressure or any rapidly fluctuating gauge needle on a completely liquid filled system is a strong indication that entrapped air is present within the system. Should this occur, pressure should be immediately released and the line re-bled. Failure to do so can lead to a catastrophic failure when the water column is suddenly accelerated by the rapidly decompressing air should a faulty joint separate or other failure occur.

A maximum test pressure of 150% of the maximum stated system design operating pressure is considered satisfactory. The test pressure selected must not exceed the working pressure rating of the lowest pressure rated component in the system (i.e. threaded components, flanges, unions, valves etc.). Reduced test pressures must be used for any elevated temperature testing due to field conditions affecting temperatures. Appropriate temperature de-rating factors must be applied to determine a suitable test pressure at elevated temperatures (>73°F).
A test period of two (2) hours is usually considered satisfactory to demonstrate the integrity of the system.

If a leak is found the pressure must be relieved, the failed section cut-out, replaced, and allowed to cure properly prior to recharging and retesting the system.

GF Harvel recommends that large and/or complex systems be tested in segments as they are installed to permit evaluation and correction of improper installation techniques or other deficiencies as the project progresses. In buried applications the system should be hydrostatically tested prior to backfilling operations. During testing of buried lines, fittings and joints should be left exposed to aid in visual inspection for leakage. Sufficient earth cover should be placed over the pipe sections located between the fittings/joints to help prevent movement during testing. Any concrete anchors and/or thrust blocks must be allowed to cure completely prior to pressure testing.

Caution: Compressed air or gases must never be used for testing of rigid PVC and CPVC piping systems (refer to Caution Areas section for additional information). Improper installation, especially poor workmanship in solvent cementing techniques, can lead to an abrupt release of tremendous stored energy in the presence of compressed air or gas. This abrupt release of energy creates a “whipping action” of the piping where shattering of pipe and fittings is then apt to occur at directional changes and at points where the system is rigidly restrained. This scenario creates a substantial safety hazard to personnel. In addition, secondary hairline stress fractures caused by this effect can also be initiated which will tend to propagate over time resulting in additional failures. It is also known that certain additives present in air compressor lubricants are not chemically compatible with PVC/CPVC materials and will initiate stress cracking of the plastic, further increasing the potential for additional failures.

1.0 CAST IRON PIPES AND FITTINGS

1.1 Material

The cast iron soil waste anti-syphonage and drain pipes (spigot and socket joints) shall be of approved brand or make as specified with projecting ears or cast iron (centrifugally cast) soil pipes manufactured be M/s. Indo Swedish Pipe Manufactures Ltd., Agra with approved clamps.

Cast iron soil, waste fittings should be of similar type of approved and reputed manufacture. The pipe and fittings are to be clear, true to shape smooth casting, free from flaw, cylindrical, their inner and outer surfaces being as nearly as practicable concentric and to be securely fixed by stout iron nails driven through the clamps or ears into hard wooden plugs built into the walls. All bends and branches and other parts are to be similar in every respect of the pipes. They shall be sound and nicely cast and shall be free from cracks, laps, pin holes and other imperfection and shall be nearly dressed and carefully fitted. All pipes and fittings shall ring clearly when struck over with a light and hammer and shall be capable of being easily worked with a drill or file.

i) Dimension of Sand Cast Iron Socket & Spigot Pipes

Sl. No.	Nominal dia or bore	Thickness	Overall 1.5m	Weight of Pipe 1.80m	Length 2.0m
1	50mm	5.0mm	9.56 Kg.	11.41 Kg.	12.65 Kg.
2	75mm	5.0mm	13.83 Kg.	16.52 Kg.	18.37 Kg.
3	100mm	5.0mm	18.14 Kg.	21.67 Kg.	35.66 Kg.
4	150mm	5.0mm	26.70 Kg.	31.92 Kg.	36.66 Kg.

ii) Dimension of Centrifugally Cast Socket and Spigot Pipes

		Approximate Weight for an Effective Length						
Nominal dia.	Thickness mm	3m Kg.	2.5m Kg.	2m Kg.	1.75m Kg.	1.5m Kg.	1m Kg.	0.5m Kg.
50	3.05	13.4	11.3	9.2	8.2	7.1	5.0	2.9
75	3.50	20.0	16.8	13.8	12.2	10.6	7.4	4.3
100	4.0	30.0	25.5	21.0	18.4	16.0	11.2	6.5
150	5.0	56.0	47.0	28.5	34.0	29.5	21.0	12.0

A tolerance up to minus 15% in thickness and 20mm in length will be allowed. For fittings tolerance in length shall be plus 25mm and minus 10mm. The access door fittings shall be designed so as to avoid dead space in which filth may accumulate. Door shall be provided with 3mm rubber insertion packing when closed and bolted.

A tolerance up to minus 10% may, however, be allowed against these standard weight.

All lead joints should be done with Pig lead of approved quality. Our sample of pig lead for the entire work shall be tested for composition to ensure its conformity to IS-782.

		Approximate requirement of Lead required for joint
a. 100mm dia. pipe joint	:	0.98 Kg.
b. 75mm dia. pipe joint	:	0.88 Kg.
c. 50mm dia. pipe joint	:	0.77 Kg.

1.2 Laying of Pipes

By centering the spigot with in socket and using packing yarn / gasket compacted so as to leave a depth for receiving quantity of lead in a continuous pouring from ladle. After pouring lead in the joints in full, caulking is to be done 3 times may be sealed with pure virgin lead.

Door shall be provided with 3mm rubber / asbestos packing insertion when closed and bolted.

Quantity of lead and yarn to be used in every joint must be 35mm depth of lead from the lip of pipes and spun yarn dipped in bitumen solution for the rest depth / and approximate requirement of lead as shown above.

For laying horizontal H.C.I. pipe inside the building it should be suspended from R.C. slab by means of special brackets or handers fixed to walls or slab as directed with a given grade 38mm per metre.

1.3 Testing

The soil and waste pipes and fittings as laid shall be smoke tested to the entire satisfaction of the Engineer. Cost of testing shall be included in rates including the tools, machinery and fuel. No extra claim for this will be entertained. The material usually burnt in grease cotton waste which gives out a clear pungent smoke which is easily detected by sight and smell. Smoke shall be pumped into the drains of the lowest end from a smoke machine which consists of blower and burner.

1.4 Measurement

All pipes shall be measured net / length as laid or fixed and shall be measured over all fittings such as bends, junctions, traps etc. The length shall be taken along the centre line of the pipes and fittings. Fittings will be counted extra over. Before fixing and painting, the pipe shall be tested hydraulically on ground at a pressure of 0.4 kg./sq.cm for pipes under sand cast iron and at a pressure of 0.7 kgf/sq.cm. for pipes under centrifugally cast iron pipes without showing any sign of leakage, sweating or other defect of any king. The pressure shall be applied internally and shall be maintained for not less than 15 seconds.

TECHNICAL SPECIFICATION FOR WATER SUPPLY PIPES & FITTINGS

1.0 G.I. PIPES AND FITTINGS

1.1 Mineral

All galvanised iron pipes are to be of mild steel continuously welded, screwed tubes, medium quality of M/s. Indian Tube Company, Jamshedpur make. The pipes and sockets shall be cleanly finished well galvanised in and out and free from cracks surface flaws, lamination, and any defects with threads well cut and clean. The details of pipes and sockets regarding nominal bore, thickness, and weight in kg/m are given below. All G.I. fittings shall be of approved brand or make as specified. The pipes and fittings are to be screwed conforming to British Standard gas thread. In jointing the pipes, threaded portion of both pipes and sockets shall be oiled and rubbed over with white Zinc and fine spun yarn.

The Zinc coating of galvanised tubes is to be 6% heavier than Black tubes. Every length of tube is to be hot stamped at manufacturing stage with ITC-TATA symbol and letter M.

DIMENSIONS AND NOMINAL WEIGHTS OF STEELL TUBES & SOCKETS

Approx. Outside Dia. in mm	Nominal bore in mm	Screwed and socketed Lot Kg/metre			S o c k e t s	
		Approx.. Minimum Mm				
		Light	Medium	Heavy	outside Dia. mm	length mm
21.3	15	0.961	1.23	1.46	27	37
26.9	20	1.42	1.59	1.91	32.5	39
33.7	25	2.03	2.46	2.99	39.5	46
42.4	32	2.61	3.17	3.87	49	51
48.3	40	3.29	3.65	4.47	56	51
60.3	50	4.18	5.17	6.24	68	60
76.1	65	5.92	6.63	8.02	84	69
88.9	80	6.98	8.64	10.3	98	75
114.3	100	10.2	12.4	14.7	124	87
139.7	125	--	16.7	18.3	151	96
165.1	150	--	19.8	21.8	178	96

15mm (1/2") n.b up to and including 80mm (3") n.bb – Hot finished Continuous Weld Tubes.
100mm (4") n.b. and up to 150mm (6") n.b. – Hot finished seamless tubes.

Manufactures Tolerance shall be permitted on tubes as indicated below:

	THICKNESS	WEIGHT
Not limited	I)for quantities 150metres and over of	One size: +/- 4% 10%
	ii) for single tube and quantities less than 50 meters of one size: + 10 & - 8%	

1.2 Laying of Pipes

The layout of the mains and service pipes will be according to the drawings. The contractor is to mark out the exact position of the fittings and the exact run of all the pipes and must ascertain from the Engineer, that these are approved, before commencing the work.

1.3 External Line

Where the pipes run underground these must be fixed at least 45cm below ground level and coated with one coat of approved bituminous paint.. the galvanised iron pipes and fittings shall be laid in trenches, the width and depth of the trenches for different dimension of the pipes shall be as given below

Dia. of Pipe of trench	Width of trench	Depth
15mm to 51mm	30 cm	60 cm
65mm to 100mm	45 cm	75 cm

The pipes shall be painted with two coats of anticorrosive paint of approved quality. The pipes shall be laid on a layer of 7.5cm sand and filled up to 15cm above pipes and the remaining shall then be filled with excavated earth with proper ramming as described in "Excavation and refilling".. Pipes shall not be laid so as to pass through manhole, catch pit drain under any circumstances. Where it is unavoidable,, the pipes shall be carried in sleeve MS/GI Pipe as approved by the Engineer, cost of which should be included in the item rate. Where the service pipe will enter the building below ground level a sleeve pipe is to be provided. The underground water service pipe should be kept at a sufficient distance apart from sewer line, at least 30cm above where it will cross over the sewer pipe or in common trench. The rates for all above work should be included in item of pipes.

1.4 Internal Work

Where the pipes run along walls, these are to be fixed at 25mm away by holder bat clamps fixed at a distance not exceeding 1.80cm apart and both sides of turning point. Where the pipes are chased in wall as shown in the drawing or specified in the bill of quantities, the pipes are to be secured to wall by hook fixed at an interval of 1 M and hooks at all sides of the branches and turning point, where the pipes are passing through the RCC/masonry wall, column, beam or pillar, these must pass through the appropriate higher sizes of CI/GI sleeve

pipe and are to be included in the rates. No extra claim will be entertained. In case the pipe id embedded in walls and floors,, it should be painted with anticorrosive bituumastic paint of approved quality.

It should not come in contact with lime mortar or lime concrete as it is corroded by lime. All pipes should be fixed horizontal and vertical..

For pipes 15mm to 50mm diameter the holes in the walls and floors shall be made by drilling with chisel of jumper and not dismantling the brick work or concrete. After fixing, the holes shall be made good with cement mortar 1:3 and properly finished to match the adjacent surface. Union is to be provided in each of the vertical riser or drop on and from water tank one each near the peets valve.. The long screw fittings are to be fitted at an interval of 3 metres for long horizontal line and inside the lavatory/kitchen/laboratory etc,, after 2 meters..

1.5 Testing the joints and Lines

After laying and jointing the pipes and fittings shall be inspected under working condition of pressure and flow. Any joint found leaking pipes should be removed and replaced without extra cost. The pipes and fittings after they are laid shall tested to hydraulic pressure 6kg/Sq.cm... (60 meter) for internal work and for CI water main a pressure of 7Kg.. per Sq.Cm the pipes shall be carefully charged with water allowing all air to escape and voiding all shock or water hammer. As water comes out of tapps, stop cocks shall then be closed and specified hydraulic pressure shall be applied gradually, PRESSUIRE gauge should be accurate and preferable should have been tested. The test pressure should be maintained without loos for at least half an hour.

1.6 Painting (exposed)

On completion of the test the exposed pipes and fittings are to be painted with two coats of Synthetic enamel paint of approved colour over a coat of priming and the pipes running underground shall be painted with two coats of anticorrosive bitumastic paint with and bed all round.

1.7 Measurement

The length shall be measured in running metre correct to 2 decimal for the finished work, which shall include the G.I. pipes and fittings such as bends, tees, elbows etc. but excludes brass or gun metal fixtures like taps, cocks, valves, PVC connectors etc. The length shall be taken along the centre line of the pipes and fittings as mentioned above. All pipes and fittings shall be classified according to their diameters, method of jointing and fixing substance, quality and finish. The diameter shall be the described as including all cutting and waste. In case of fittings of an unequal bore the larger bore shall be considered. Digging and refilling trenches, cutting and chasing, painting, clamps testing etc. should be clubbed with the main item.

2.0 BALL VALVE

2.1 Material

The ball valve shall be of high or low pressure class as mentioned in the schedule of quantities and shall be obtained from approved and reputed manufacturer. The nominal size of ball valve shall be that corresponding to the size of pipe for which it is used. The ball valve shall be of brass or gunmetal and the float for low pressure in polythene and for high pressure in copper. Details of all associated components and their materials are to be best available quality.

Every ball valve while in closed position shall withstand an internally applied hydraulic pressure of 20Kg/sq.cm for a minimum period of 2 minutes without leakage or sweating. Every HP ball valve when assembled in working condition with the float immersed to not more than half its volume shall remain closed against a test pressure of 10.5Kg/sq.cm and a L.P. ball valve against a test pressure of 5.3Kg//Sq.cm.

2.2 Polythene Floats

Polythene floats shall be water tight and non—absorbent and shall not contaminates water and with no adhesive jointing parts. Bosses shall be integral part of the plastic float fitted with a copper corrosion resistant insert to carry the thread and tapped. The thickness of the wall measured at the major diameter of the thread shall be equivalent to not less than half the nominal thread diameter. All bosses and inserts in bosses of plastic floats shall be rigid in relation to the float under working condition.

2.3 Copper Float

The minimum thickness of the copper sheet used for making balls finished bright shall be 0.45 mm for ball up to 115mm dia. and 0.55mm float ball over 115mm dia. The thickness of materials of the float shall be uniform throughout.

Dimensions of float and boss

Sl. No.	Particulars	Dimensions for Nominal Size: (in mm)					
		(15mm)	(20mm)	(25mm)	(32mm)	(40mm)	(50mm)
1.	Dia. of spheri- Cal float HP	127	152	203	229	254	305
	LP	114	127	178	203	203	254
2.	Tapping of boss	M8x 1.25	M8x 1.25	M12x 1.75	M14x 2	M14x 2	M16x 2
3.	Axial length of Thread minimum	8 (Min)	8 (Min)	133 (Min)	16 (Min)	16 (Min)	18 (Min)
4.	Dia. of barrel Or if tapered dia. Of small and Minimum	12.5 (Min)	16.5 (Min)	17.5 (Min)	20.5 (Min)	22.5 (Min)	22.0 (Min)

3.0 FERRULES

The ferrules for connection with CI main shall be obtained from the approved manufacture as specified. It shall be of non-ferrous materials with a CI bell mouth cover and shall be of nominal bore as specified. The ferrule shall be fitted with a screw and plug or valve capable of complete shutting off the supply to the connected pipe as and when required. For fixing ferrule the empty main shall be drilled and tapped at 45 degree to the vertical and ferrule screwed in. he ferrule must be so fitted that no portion of the sunk shall be left projecting within the main to which it is fitted.

DIAMETER OF IN AND OUT OPENINGS:

DIA IN	DIA OUT	:	DIA IN	DIA OUT
1/8"'	½"	:	¾"	¾"
3/8"	½"	:	1"	1"

4.0 BRASS GUN METAL, NON-RETURNN VALVE (CHECK VALVE)

The non return valve shall be of brass or gunmetal and shall be of horizontal or vertical flow type and of the size as listed. The valve shall be approved quality heavy type shall be obtained from the approved manufacturer and shall have the following weights with a tolerance of 5 percent.

Dia. in mm	Horizontal type in Kg.	Vertical type in Kg.
15	0.30 (Provisional)	0.25 (Provisional)
20	0.55 ,,	0.25 ,,
25	0.90 ,,	0.75 ,,
32	1.25 ,,	0.90 ,,
40	1.70 ,,	1.20 ,,
50	2.90 ,,	1.45 ,,
65	5.25 ,,	2.15 ,,
80	7.70 ,,	4.10 ,,
20	0.55 ,,	0.25 ,,

5.0 FOOT VALVE

This is generally placed at the lower end of the suction pipe of centrifugal or other pumps to prevent the sunction pipe from emptying. When the pump is first started it does not have to exhaust the air from the sunction with pipe, the result is that prompt starting of the pump is secured. Foot valve is particularly useful when the sunction lift or vertical height of the pipe is considerable.

6.0 SLUICE VALVE

The sluice valves are used in a pipe line for controlling or stopping flow of water. This should be of inside screw, non-rising spindle type sluice valves from 50mm to 300mm sizes with hand wheel for operation usually. These shall be obtained from the approved listed manufacturer. Sluice valve shall be of two classes and the test pressure and maximum working pressure are as follows:

	Test Pressure Kg/cm2	Maximum Working Pressure Kg/cm2	
		Body	Seat
Class I	20	10	10
Class II	30	15	15

The bodies, domes, covers, stuffing box, thrust plates, hand wheel, wedges, and gland shall be of cast iron and spindle shall be machines from rolled, extruded or forged high tensile brass or aluminium bronze. The tensile strength of the rolled, extended or forged metal shall not be less than 44 kg/m2 with a minimum elongation of 20 percent on a gauge of 5cm. The rings and spindle nut may be of the non-ferrous or ferrous metal.

MINIMUM FINISHED WEIGHT OF SLUICE VALVE
(all dimensions in millimetre)

Sl. No.	Particulars	Weight in Kg of nominal size (mm)								
		50	65	80	100	125	150	200	250	300
1.	Weight of valve Excluding cap Or hand wheel									
	Class – I	20	22	31	43	55	71	120	178	240
	Class – 2	24	27	36	55	67	85	149	228	301

2. Weight of cap

Class 1	1.3	1.3	1.3	1.3	1.3	1.5	1.5	1.9	2.4
Class 2	1.3	1.3	1.3	1.3	1.3	1.5	1.5	1.9	2.4

The test shall be conducted under constant pressure for a period of time sufficient for a thorough inspection of the valve but not less than 2 minutes for each test. For sluice valves above 300 mm size should conform to relevant IS specification.

Air Valves

They are placed at every summit in the pipe to permit the escape of air when main is filled and afterwards air, if any is carried into the main (They were also placed on long stretches of nearly level main)

Scour Valves

These are placed at the bottom of all depressions for emptying the main or letting out sediment.

Reflux Valves

These are fixed on the ascending parts of the main which open in the direction of flow but automatically close if a burst occurs and the water flows back. They diminish the damage done by the escape of water at a burst.

Safety or Relief Valves

These are fixed at the down stream end of long lengths of mains and where water hammer may take place so as to reduce to the normal any excessive pressure that may occur.

7.0 WATER METERS

7.1 Water Meters (Domestic Type)

The water meter body shall be of bronze, gunmetal or brass and marked to read in litres complete with registration box, can and lid. The water meters shall be provided with strainers. Strainers shall be of material which is not susceptible to electrolytic corrosion. They shall be rigid, easy to remove and clean and shall be fitted on the inlet side of water meter. It shall be possible to remove and clean the strainer in such a way as not to permit disturbing the registration box for cleaning, and shall be fitted with an additional external strainer on the inlet side and rates quoted by contractor shall include for same.

The nominal sizes of Domestic meter are 15, 20, 25, 40 and 50mmm and denote the nominal bore of its inlet.

The meter casting shall be fitted in the pipe line by two conical or cylindrical nipples or tail pieces with connecting nuts.. Water meters should be made of the same materials as specified for body.

7.2 Water Meters (Bulk Type)

This shall be of size 50mm to 500mm. Water meter may be either vane wheel type ranging from 50mm to 300mm or helical type ranging from 50mm to 300mm.

In vane wheel type meter runner or impeller is mounted on a vertical spindle which has several vanes symmetrically spaced around the axis. In helical meter running is provided with nos. of vanes forming a multi threaded helix.

7.3 Marking

Each meter shall be marked with the following information

(a) Nominal size

(b) Direction of flow

(c) I.S.I. certification mark

(d) Manufactures name and trade mark

7.4 General

Water meter and their parts, especially parts coming in continuous contact with water, shall be made of materials resistant to corrosion and shall be non-toxic. Use of dissimilar metals in contact under water shall be avoided as far as possible to minimise electrolytic corrosion. The drop in pressure, in ft.. Of water in passing through the meters (of all sizes) should be stated specifically...

7.5 Body

The body of the meter shall be made from cast iron of non-ferrous metals but no aluminium alloy; where made of cast iron,, the quality of cast iron shall conform to Grade 20 of I,S, 210-1962: where made of non-ferrous metals, it shall be made from bronze, brass or any other corrosion resistant metal having physical properties not less than Grade 2. The body shall be made free from all manufacturing and processing defects such as blow holes and spongy structure and shall not be repaired by plugging, welding or by the addition of the materials. The internal shape shall ensure easy dismantling.

7.6 Connection

The meter casing shall be fitted into pipe line by means of a double flange, the internal diameter of which shall be equal to the nominal size of the meter. Flange shall be machined flat, that is without raised joint face.

The maximum dimension across the flanges of the water meter shall not exceed the following:;

NOMINAL SIZE mm	LENGTH OVER FLANGE mm
50	350
80	450
100	650
150	750
200	875
250	1000
300	1100
350	1150
400	1200
500	1300

7.7 Screws,, Studs and Nuts

Screws, studs and nuts shall be of mild steel, brass or other corrosion resistant material of approved type and quality.

7.8 Cap

The cap shall be of same material as those specified for body or shall be made of brass of approved type and quality.

Cap may be made of suitable aluminium alloy where so desired. The edge shall lap over the circumference of the registration box in order to prevent the penetration of dirt. The transparent window which covers the dial shall be inserted from inside into the cap. The protective lid shall be secured by a robust hinge or other suitable method of robust construction. The provision shall be such that it may be conveniently operated from the top.. Where the provision is designed for use in conjunction with pad locks the hole provided for pad locks shall be of a diameter not less than 4mm.

Where so required, for dry type water meters, the transparent window covering the dial shall be provided with a wiper on the inner side for wiping of condensed water.

8.0 BRASS BIB COCK AND STOP COCK

A bib cock is a draw off tap with a horizontal inlet and from outlet and Stop Cock is a valve with a suitable means of connection for insertion in a pipe line for controlling or stopping the flow. They shall be of screw down type.. The closing device should work by means disc, carrying a renewable non-metallic washer which shuts against water pressure on a seating at right angles to the axis of the threaded spindle which operates it. The handle shall be either crutch or butter fly type or standard head securely fixed to the spindle. Valve shall be of the loose leather seated pattern.

The cocks shall open in anti-clock wise direction. The bib cock and stop cock shall be polished bright, if chromium plated. Finish must be of approved type. Finished weight of the bib tape and stop taps are as follows:

Size in Mm	Minimum finished weight in Kg	
	Bib Taps	Stop taps
15	0.40	0.40
20	0.75	0.75
25	1.25	1.36
32	1.80	
40		2.25
50		3.85

In finish and appearance the plated articles when inspected shall be free from plating defects such as blisters, pits, roughness and unplated areas and shall not be stained or discoloured. Before a fitting is plated, the washer plates shall be removed from the fittings.. The gland packing shall be protected from the plating solution.

8.1 Gunmetal Bib Cock and Stop Cock

These shall be of gun metal screw down patterns. So far as the general requirements of materials are concerned these shall be similar to those as described above. The weights are also same.

9.0 BRASS FULLWAY VALVE

Full way valve is a valve with suitable means of connection for insertion in a pipe line for controlling r stopping the flow. The valve shall be of gate valve type opening full way and of the size as specified.

The valve shall be of best quality of approved make as listed and shall have the following approximate weights with tolerance of 5 per cent.

Dia. (in mm)	Flanged end (Kg)	Screwed end (Kg)
15	1.021 (Provisional)	0.567 (Provisional)
20	1.503 (,,)	0.680 (,,)
25	2.495 (,,)	1.077 (,,)
32	3.232 (,,)	1.559 (,,)
40	4.082 (,,)	2.268 (,,)
50	6.691 (,,)	3.232 (,,)
65	10.149(,,)	6.804 (,,)
80	13.381(,,)	8.845 (,,)

9.10 Gun Metal Full Way Valve with Wheel

This shall be of the gun metal fitted with wheel and shall be of gate valve type opening full way. This shall generally be of approved make as listed.

10. Water Tank

Installing, hoisting of ready made mild steel, galvanised iron pressed steel, asbestos cement water tanks constructing the RCC tanks shall be carried out with proper care, using best quality materials, care being taken that no part of the tank or of the structure is damaged during operation. The tanks or of the structure is damaged during operation. The tanks shall be installed true to level and drawing. Steel tanks of capacity up to 1800 litres (Mild Steel or galvanised iron as specified) shall be of 1.6mm thick sheet riveted to 32mmx32mmx6mm angle iron frame complete with MS/CI cover with locking arrangement including providing pads of sizes as required for inlet and outlet pipes. GI overflow pipe piece of specified size with mosquito proof coupling and with backing nut of required sizes shall also be provided as specified and shall be measured and paid for separately. P.S. tanks, details and arrangements, installation should be as per manufacturer's specification..

10.1 Pipe Inserts/Puddle Piece

GI pipe inserts or MS/CI puddle pieces to be kept in position for outlets wash out and interconnection of tanks while casting RCC/Masonry tank shall be of the specified size and diameter and shall be threaded throughout its length. For GI Pipe insertion a 150mmx150mm MS plate 6mm thick shall be welded centrally on to the threaded throughout its length. For GI pipe insertion a 150mm x 150mm MS plate 6mm thick shall be welded centrally on to the threaded body of pipe as directed. Rates quoted shall include for the same.

11.0 CAST IRON AND SPUN IRON PIPE AND FITTINGS (Water main type)

11.1 Pipes and Specials

The cast iron spun pipes and specials shall be obtained from approved and reputed manufacturers listed. The pipes shall be either with spigot and socket ends or socket ends or flanged and of approved make and brand as listed. The spun iron pipes shall be cast iron cast centrifugally and vary in diameters from 80mm to 750mm. These shall be of Class LA, Class A and Class B as specified in the item. These pipes and specials shall be used for water pressures up to half of the hydraulic test pressure of various pipes as given below:;

ii) PIPES

	Test pressure in kg/cm2		
Type of Pipes	Class LA	Class A	Class B
Spigot and socket pipe in all dia.	12	18	24
Flanged pipes up to 600 mm. Dia.	---	18	24

iii) SPECIALS

Nominal diameters	Test pressure Kg/c. m2 (Metre Head)	
	Fittings without branches or with branches not greater than half the principal diameter	Fittings with branches greater than half the principal dia.
Up to and including 300 mm	25 (250)	25 (250)
Over 300 mm and up to and Including 600 mm	20 (200)	20 (200)
Over 600mm and up to and And including 1500 mm	15 (150)	10 (100)

11.2 Stacking

The pipes and specials shall be handled with sufficient care to avoid damages to them. These shall be lined up on one side of the alignment of the trench, socket facing uphill or in the direction of flow of water as the case may be.

11.3 Trench for CI Pipes and specials (for underground water main)

The trench for the pipes shall be excavated to lines and levels as directed. The bed of the trench shall have to be truly and evenly dressed throughout from one change of grade to the next. The gradient is to be set out by means of bonning rods and the required depth and similar to as described under excavation of branches in S.W. pipes.

Laying

Before laying the pipes they shall be examined to see that there are no cracks or defects. Subject to the approval of the Engineer the damaged portion of the Cracked pipe may be cut at a point not less than 15 cm beyond the visible extremity of the crack with diamond pointed chisel. The pipe shall be thoroughly cleaned of all dust and dirt. Special care shall be taken to clean the ` inside of the sockets and the outside of the spigots before lowering the pipes into the trenches. Holes to receive the sockets shall be scooped out in the trench bed so as to firmly bed the full length of the pipe.

The pipes shall be lowered into the bench by means of suitable pulley blocks, shear legs, chains, ropes etc. In no case the pipe shall be rolled and dropped into the trench. After lowering the pipes, they shall be arranged to coincide the centre line of pipes with the centre line of alignment. The spigot of one shall be carefully cantered into the socket of the next pipe and driven to the full distance that kept in position by earth filling, well watered and rammed at two or more places in is length.

In case thrust or anchor blocks of cement concrete 1:2:4 shall be constructed on all bends or branches to transmit the hydraulic pressure without impairing he ground and spreading it over a sufficient area.

1.0 CHAMBERS/MANHOLES

1.1 At every change of alignment, gradient or diameter of a drain there shall be a manhole or inspection pit. The maximum distance between manhole chamber shall be 30M for road, 15M within compound.

1.2 Size

All manholes shall have internal dimensions as shown on drawings. The depth of invert shall be according to the gradient.

1.3 Foundation

The base concrete shall be 15cm thick and with 1:3:6 concrete mixture laid over the brick flat holing. The slab shall be finished 75mm beyond the external faces of the brick work.

1.4 Brick work

The brick work shall be in cement sand mortar in the proportion 1:4 and 250mm thick or as mentioned in the tender. The joints shall be raked out and finished with cement and sand mortar 1:2 trowelled hard and smooth to a thickness of 20mm.

1.5 Plaster

Inside the walls shall be plastered as specified in the item and shall be finished with floating coat of neat cement. In wet ground 20mm thick plaster shall be done on the exterior surface of the walls also and this plaster shall be water proof with the addition of approved water proofing compound as per manufacture's specification.

1.6 Ponting

In dry ground shall be done in 1:2 cement mortar the outside surface.

1.6 Haunching and Construction

On the top of the base slabs from half pipe channel longitudinally at the centre, the channel is to be haunched up with concrete slopping towards from the edge of channel to meet the side of the chamber at gradient of 1:6. The channel and the benching are to be floated to smooth hard surface with a coat of cement mortar 1:1 using extra cement. Sewers of unequal sectional are shall not be jointed at the invert in a manhole unless it is unavoidable. The branch sewers should deliver sewage in the manhole in the direction of main flow and the junction must be made with care so that flow in main is not impeded. In case of drop connection flow in main is not imbedded. In case of drop connection C.I. shall be provided with heel rest bend at the bottom and bend with access door at the top for cleaning purposes.

1.7 Channel

Channel for drains coming from side of the manhole chamber shall be curved to meet the main drainage channel . The channels and benching shall be done in cement concrete 1:3;6 and rendered smooth with neat cement. The depth of channels and benching shall be as follows:

Size of Drain inn Mm	Top of Channel at the centre above bed concrete (mm)	Depth of benching of side walls above bed concrete (in cm)
100	15	20
150	20	30
200	25	35
250	30	40
300	35	45
350	40	50
400	45	55
450	50	60

The brick work in shallow manhole shall be corneled to the required size for the cast iron manhole cover and frame.

Footrest

C.I. foot rests or M.S. Square rods of 20mm shall be embedded in masonry. They shall be fixed 225mm apart and projecting 125mm from the wall face.. Foot rest shall be painted with bitumen as directed.

2.0 CUTTING HOLES, CHASES, ETC. REPAIRING THE SAME

Holes and chases to be cut into walls, slabs, etc.. must be of the minimum size and extent required to run the service and in no case superfluous cutting is to be resorted to. After the services are laid, the chases and holes must be made good in cement concrete with suitable finish. These repairs must be done very carefully so that the finished surface is uniform and harmonious with the rest of the adjoining surface. No extra claim will be entertained in this respect.

3.0 CAST IRON MANHOLE COVERS AND FRAMES

3.1 Unless otherwise mentioned the covers and frames shall obtain from approved manufacture and shall be of approved makes and brands as listed. Heavy duty covers etc. under heavy vehicular traffic condition and capable of bearing wheel loads up to 11.25 tones are to be used, medium duty under light type wheel traffic load; light duty for domestic premises use or other places where they are not subjected to wheel traffic loads.

Covers and frames shall be cleanly cast, double water seal type and they shall be free from air and sand holes, cold shuts and wrapping which are likely to impair the utility of the casting All casing shall be free from voids whether due to shrinkage, gas inclusion or other causes. The cover shall be gas tight and water tight with proper seal arrangement, but can be easily opened and closed and it shall be fitted in the frame in workmanship like manner. The cover used for sewer line should bear sewer engraves on top of casting. Similarly for storm line it shall be marked 'storm`. Size and dimensions are given below with weight. Covers shall have raised chequered design to provide and adequate non-slip grip. The covers and frames shall be coated with a material having a base or with black bituminous composition. The coating shall be smooth and tenacious. It shall not flow when exposed to temperature of 60 degree centigrade and shall not be so brittle as to chip off at a temperature of 0 degree centigrade. The frame of manhole cover shall be firmly

embedded to correct alignment and levels in R.C.C. slab or plain concrete as the case may be.

Type Grade	Overhead Size in cm.	Clear opening In cm.	Weight of cover in Kg.	Weight of frame in Kg.	Test load in tonne
HD Double	78 x 76	50	118	111	35
Triangular		56	140	115	35
HDCircular	76 dia,	50 dia.	118	111	35
	81 dia,	50 dia.	140	115	35
HDCircular	71 dia.	50 dia.	58	58	5
	76 dia.	56 dia	64	64	5
HD Rectangular	84 x 68.5	61 x 45.5	80	64	5
LDRectangular	75 x 56 or	45.5 x 61	29	23	
Circular	76 dia.	45.5 dia.	29	23	

4.0 GULLY PIT

To be of the standard size 1.06 m x 0.63 m and to be built in cement mortar (3:1) as specified in strict accordance with the drawings. The internal sides and the floor are to be finished with 12mm cement plaster to be fitted with a 150 mm C.I. overflow pipe with hinged cover and handle 0.90 x 0.45 C.I. gully grid of the standard weight, 15 cm siphon. The gully grid and frame are to be of 116 kg.

5.0 S.W. Gully Trap

S.W. Gully trap of specified sizes and quality shall be fixed 15 cm. thick cement concrete 1:3:6 bedding and the gully outlet of the branch drain shall be joined similar to joining of S.W. pips. A brick masonry chamber 30 cm x 30 cm internally shall be constructed in half brick masonry with 1:6 cement mortar and space between the trap and the wall filled up with cement concrete 1:4:8 and the upper portion of the chamber finished internally with 1:3 cement mortar and finished with neat cement, the corners and the bottom of the chamber shall be rounded off so as to slope towards the grating. In addition the chamber shall have a C.I. grating with frame 30 cm. x 30 cm. (inside) with machined seating faces, fixed on the top of the brick with cement concrete 1:2:4 and rendered smooth. The weight off grating shall not be less than 4.53 kg. and that at frame 2.72 kgs.

Notes: All other materials not specified shall be got approved by the BRBNMPL prior to supply/installation. The brand name of the item proposed to be supplied/installed shall be mentioned by the tenderer.

Section VIII: Quality Control Requirements/Declaration by the tenderer

Tender Enquiry No. – **084/MYS/IFP/2018-19**

Tender Document for Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru.

[Supplier/Bidders shall fill the following format and submit along with bid]

1. It is confirmed that I/We shall carry out the works as per Technical specification and tender conditions. Necessary warranty and test certificates for desired materials shall be submitted along with bills.
2. I /we, also confirm that No material without conforming to the Specifications in the Contract will be used for the Works without prior written approval and instruction of the BRBNMPL Officers in charge.
3. Price BID been submitted as per given format *(Section XI: Price Schedule –Part-III Bid) in separate sealed envelope.*
4. DD for EMD amount, Cost of tender document, complete set of signed tender document & necessary proof documents for eligibility in tender participation are attached with Part-I Tender Form.
5. Payment terms are accepted as per tender conditions.
6. I have the proof of following mandatory documents and enclosed along with tender documents.
   a) GSTIN No.
   b) PAN No.
   c) Requisite work experience (work order copies and work completion certificates as per eligibility criteria)
   d) Work credential with financial turnover required to participate in this tender as per eligibility criterion (certified by CA)
7. We have gone through the other tender conditions mentioned in Section-II: (General Instructions for Tenderer (GIT) & Section-IV General Conditions of Contract (GCC)) of this tender downloaded from BRBNMPL website (https://www.brbnmpl.co.in) & we abide to follow above sections as a part of this tender.
8. It is also confirmed that our firm is not black listed /debarred from tendering process from BRBNMPL or any PSU/Govt. departments.

Date: / / 2018
Place:

For and on behalf of

[Signature with Name & date]

Duly authorized to sign tender for and on behalf of Company Seal

Section IX: Qualification/ Eligibility Criteria

For Part-I: Technical Bid Criteria -

1. **Work Experience:** The agency/contractor should have experience in similar nature of works**.** Also the bidder should be currently in business and in sound financial condition. **Similar nature of works means experience in Construction of Commercial or Industrial or Residential Building or Institutional works etc. Sub-Contracted works will not be considered.**

Bidder should have work experience as below:

Three similarly completed works each costing not less than the amount of value of 40% of estimated value **(i.e., Rs. 38.10 lakhs)** in the last 7 years up to 31/09/2018.
OR
Two similarly completed works each costing not less than the amount of value of 50% of estimated value **(i.e., Rs. 47.625 lakhs)** in the last 7 years up to 31/09/2018.
OR
One similarly completed work each costing not less than the amount of value of 80% of estimated value **(i.e., Rs. 76.20 lakhs)** in the last 7 years up to 31/09/2018.

Work Completion certificate indicating Name of works, Work order no., date, Value of works order placed, actual value of work completed and the time period for the completion of the work (scheduled and actual) duly attested copies for each of the works should be submitted along-with the Tender Part – I. If required so the Bidder has to produce the original documents for verification by BRBNMPL, failing which the bidder will be disqualified. The originals of all the above-mentioned documents will be returned back after verification. The completion certificates of works issued by officers of rank below that of Executive Engineer or equivalent in case of CPWD/ PWD or any Government Department and Asst. General Manager or equivalent level of any commercial Bank would not be entertained. Total value of work done, date of completion of work and the nature of the work should be clearly mentioned in the completion certificate without which the application/tender will not be accepted.

2. **Financial Standing**:
   i. Audited Financial Reports(Trading and Profit & Loss Account, Balance Sheet and Schedule of Asset & Liabilities) & financial turnover certified by CA for previous THREE years i. e. for the Financial Year 2014-15, 2015-16 and 2016-17 ending on Mar 2015, Mar 2016 and Mar 2017.
   ii. Proof of Average annual financial turnover of firm during the last 3 years ending 31.03.2017 should be 30% (i.e., Rs. 28.575 lakhs) of estimated value or more.
   iii. CA certified turnover as per the format enclosed at Section XX – Proforma for Financial Certificate.
   iv. The bidder should not have suffered financial loss for more than one year during the last 3 years ending 31/03/2017.
   v. The Net Worth of the firm should not have eroded by more than 30% in the last 3 years ending 31/03/2017.

3. The bidder should never have been blacklisted from BRBNMPL.

4. **Documentary Evidence:**
   a. Proof of Registration with GST, PAN, ESIC and EPF Registration etc., as applicable.

   b. An affidavit on stamp paper of Rs. 100/- (Non – Judicial) stating ***"In case any ambiguity is noticed in the Documents (list out documents) submitted at any stage, we will be entirely responsible and liable for any action as deemed fit under the Law".***

   c. Power of Attorney / Authorization with the seal of the company in the name of the person signing the Tender Documents. Proprietorship firm need not submit authorization, if proprietor himself signed on all documents.

   d. Status of Firm (Partner/proprietor / Limited etc.) with proof. In case of Proprietorship firms, Affidavit in this regard to be submitted.

   e. Undertaking regarding blacklisting by BRBNMPL or any Govt./semi Govt body and details of Civil and criminal cases and other legal dispute proceedings including arbitration proceedings, if any, pending against the tenderer or where the tenderer is involved and also closed cases during the last five years.

   f. Duly filled in & authenticated NEFT Form for credit clearing towards return of EMD and Payment as per Annexure-A. Firms working in BRBNMPL, Mysore or NEFT submitted earlier, need not to submit again.

Full Tender Document along with enclosures shall be neatly numbered (Page No.) and duly signed with seal by the Authorized Person of the firm.

Section X: Tender Form

Proforma of Techno-Commercial Bid – Tender Document for Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru.

Company Name:

To,
The General Manager,
BRBNMPL, Note Mudran Nagar
Mysuru - 570 003.

Dear Sir,

SUB: Part-I: Proforma of Techno-Commercial Bid for Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru.

Ref: Your Tender Enquiry No: **TENDER NO: 084 / MYS/ IFP/ 2018 - 19**

With reference to Tender enquiry cited above, we are pleased to enclose the following as our technical bid for your kind consideration.

1. Our company's profile
    a. Name of the firm : _____
    b. Status of the Firm (Proprietorship/Partnership/Company etc.): _____
    c. GST No.: _____ (Enclose Copy).
    d. Income Tax P.A.N. No. _____(Enclose Copy).
2. We confirm that we have fulfilled eligibility criteria required by BRBNMPL and supported documents are enclosed herewith.
    a. Proof of Eligibility criteria & Experience.
    b. List of customers where similar kind of work has been done. Contact person name, designation & telephone no. work completion certificates etc.
    c. Audited balance sheet for previous Three years i. e. for the financial year ending March 2015, March 2016 & March 2017.
3. We have enclosed a) in a separate envelope DD No……dated ……of amount as mentioned in the tender form Payable at Mysuru towards the payment of EMD amount.
4. Cost of Tender form Rs. 500/- (if down loaded from web site) is also enclosed as per details DD No. ……dtd ……..
5. We confirm that the Price bid is quoted exactly as per your format and is inclusive of material, labour and all statutory levies, duties, service tax & all other charges as per Scope of work. Price break up is given as per the format of BOQ (Bill of Quantities).
6. We confirm that we will abide by all the tender terms & conditions and we do not have any counter conditions. In case any counter condition is put the tender is liable to be rejected. As required, we enclose herewith the complete set of copy of tender documents (including terms & conditions) duly signed by us as a token of our acceptance along with EMD and tender form cost.
7. We also confirm that the undersigned is duly authorized and have the competence to sign the contract for and on behalf of the firm.
8. We further confirm that, if our tender is accepted, we shall provide you with a performance security of required amount in an acceptable form in terms of GCC clause 6, read with modification, if any, in Section V — "Special Conditions of Contract", for due performance of the contract.
9. If our tender is accepted, we undertake to supply the goods and perform the services as mentioned above, in accordance with the delivery schedule specified in the List of Requirements and other tender conditions mentioned in Section-II :(General Instructions for Tenderer (GIT) &

Section-IV General Conditions of Contract (GCC). (*Please Refer website: https://www.brbnmpl.co.in*)

10. We agree to keep our tender valid for acceptance for a period up to **120 days** extendable up to another 30 days as required in the GIT clause 19, read with modification, if any in Section-Ill — "Special Instructions to Tenderers" or for subsequently extended period, if any, agreed to by us. We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.
    We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

Dated this_____day of _____ For & on behalf of

(Signature with date)
(Name and designation)

Duly authorized to sign tender for and on behalf of

Thanking you.

Yours faithfully, Seal

Signature with date Name:

Note: Techno-commercial bid without Copies of documents mentioned above, EMD amount, Tender Form cost & Copy of complete set of tender documents duly signed with seal affixed, is liable to be rejected.

Section XI: Price Schedule –Part-II Bid

Proforma of Price Bid for Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru.

From:
……..
……

……

To:
The General Manager, BRBNMPL,
MYSURU – 570 003.

Dear Sir,

SUB: Tender Notice for Construction of Ink Vessel Washing, Packing and Toilet Block for Ink Factory at BRBNMPL, Mysuru.

REF: Your Tender No: 084/MYS/IFP /2018-19

We received your tender enquiry cited above and we are pleased to submit the following as our price bid for your kind consideration.

ITEMWISE PRICE BID (B.O.Q.):

Item No	Description of Works	Unit	Quantity	Rate in Rs.	Amount in Rs.
	SECTION-A (CIVIL WORKS)				
1	Earth work for lowering and levelling the ground other than foundation works by mechanical means in all types of soils upto 3.00 depth, including providing shoring strutting and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, filling back the excavated earth to the extent required &utilising/transporting the remaining earth upto 1.00 km lead. Including the cost of labour& HOM of machineries, as per drawing and technical specification.	Cum	90.00		
1.a	Earth work excavation by manual means for foundation of buildings, culverts, water supply and sanitary lines and electrical conduits etc. either in pits or trenches1.5m and above in width in ordinary soil not exceeding 1.5m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from the edges of excavation with lease up to 50m including breaking of clods including cost of labour & HOM of machineries, as per drawing and	Cum	30.00		

	technical specification.				
1.b	Providing and injecting chemical emulsion for Pre-constructional Anti-termite Treatment, creating continuous chemical barrier under and around the column pits, walls, trenches, basement excavation, top surface of the plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surrounding of pipes and conduits, with chloropyriphos emulsifiable concentrates of 20% concentration, including cost of chemical, diluting in water to one percent concentration, labour, HOM of equipments, complete as per specification including warranty for ten years from the date of completion of the work from the specialised agency. (Plinth area of the building at ground floor only shall be measured)	Cum	300.00		
2	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @240kgs, with 20mm and down size graded granite metal coarse aggregates @0.878cum and fine aggregates @0.53cum machine mixed, concrete laid in layers not exceeding 15cms.thick, well compacted, in foundation, plinth and sills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications.	Cum	43.00		
3	Providing and laying in position reinforced cement concrete of design mix M20 with OPC cement @ 320kgs, with 20mm and down size graded granite metal coarse aggregates @0.69 cum and fine aggregates@0.460 cum, with super plasticisers @ 3 litres confirming to IS9103-1999 Reaffirmed-2008, machine mixed, concrete laid in layers not exceeding 15 cm thick, vibrated for all works in foundation for footings, plinths beam etc., including cost of all materials, labour, HOM machinery, curing, complete but excluding cost of reinforcement as per specifications.	Cum	19.00		

4	Providing and laying in position reinforced cement concrete of mix M20 with OPC cement @ 320kgs, with 20mm and down size graded granite metal coarse aggregates @0.69 cum and fine aggregates@0.46 cum, with super plasticisers @ 3 litres confirming to IS9103-1999 Reaffirmed-2008, machine mixed, concrete laid in layers not exceeding 15 cm thick, vibrated for all works in ground floor level for roof slabs, staircase, tie beams, columns, etc., including cost of all materials, labour, HOM machinery, curing, complete but excluding cost of reinforcement as per specifications.	Cum	83.00		
4a	Same as above for First Floor	Cum	15.00		
5	Providing and removing, centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, columns, roof slab, tie beam, plinth beam, stair case including cost of all materials, labour, complete as per specifications.				
a	For Column Footing	Sqm	35.00		
b.i	For Column	Sqm	110.00		
b.ii	Same as above for First Floor	Sqm	25.00		
c	For Plinth Beam	Sqm	190.00		
d.i	For Tie Beam	Sqm	617.00		
d.ii	Same as above for First Floor	Sqm	53.00		
e	For Staircase	Sqm	20.00		
f.i	For Roof Slab	Sqm	340.00		
f.ii	Same as above for First Floor	Sqm	70.00		
6	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. TMT Bars Fe 550	Qtl.	119.00		
6.a	Same as above for First Floor	Qtl	18.50		
7	Filling available excavated earth (excluding rock) in sides of	Cum	130.00		

	foundations upto plinth in layers not exceeding 20 cm. in depth, compacting each deposited layer by ramming after watering with a lead upto 50 m and lift upto 1.5 m including cost of all labour complete as per specifications.				
7a	Earth brought from outside for filling in layers not exceeding 20 cm in depth, compacting each deposited layer by ramming after watering with all lead and lift including cost of labour etc. complete as per standard specification.	Cum	100.00		
8a.i	Providing and constructing load bearing wall with solid concrete blocks of size 400x200x200 mm with having block density not less than 1800kg/m3 having a minimum average compressive strength of 5.00 N/mm2 confirming to IS 2185 (Part 1):2005 and constructed with CM 1:4, as per IS 2572:2005 including cost of all materials labour charges, scaffolding, curing, hire charges of machineries etc., complete as per specifications.	Sqm	440.00		
8.a.ii	Same as above for First Floor	Sqm	110.00		
8.b.i	Providing and constructing load bearing wall with solid concrete blocks of size 400x150x200 mm with having block density not less than 1800kg/m3 having a minimum average compressive strength of 5.00 N/mm2 confirming to IS 2185 (Part 1):2005 and constructed with CM 1:4, as per IS 2572:2005 including cost of all materials labour charges, scaffolding, curing, hire charges of machineries etc., complete as per specifications.	Sqm	96.00		
8.b.ii	Same as above for First Floor	Sqm	150.00		
8c	Providing and constructing granite/trap/basalt size stone masonry in foundations with cement mortar 1:6, stone hammered dressed in coures not less than 20 cm height, bond stones at 2m apart in each course including cost of materials labour, curing complete as per specifications	Cum	20.00		

9	Providing 12mm thick cement plaster in single coat with cement mortar 1:6, to inside brick masonry including rounding off corners wherever required smooth rendering, Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications.	Sqm	1025.00		
9a	Same as above for First Floor	Sqm	226.00		
10	Providing 12mm thick cement plaster in single coat with cement mortar 1:4, to outside brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications.	Sqm	365.00		
10a	Same as above for First Floor	Sqm	365.00		
11	Providing 12mm thick cement plaster in single coat with cement mortar 1:3, to ceiling including rounding off corners wherever required smooth rendering, including providing and removing scaffolding, cost of materials, labour, curing complete as per specifications.	Sqm	325.00		
11a	Same as above for First Floor	Sqm	52.00		
12	Providing floating coat of cement to plastering and finishing smooth, including cost of materials, labour, curing complete as per specifications.	Sqm	660.00		
12a	Same as above for First Floor	Sqm	140.00		
13	Providing and applying one coat distemper primer of approved brand on wall surface after thoroughly brooming the surface to remove all dirt, dust, mortar drops and other foreign matter including preparing the surface, even and sand paper smooth, cost of materials, labour, complete as per specifications.	Sqm	1715.00		
13a	Same as above for First Floor	Sqm	643.00		
14	Providing applying two coats of wall putty to inside plastered walls and ceiling using white cement putty. scrapping and levelling the surface using steel blade and preparing the surface even and smooth by using different grade sand papers, including cost of all materials, cost of labour and scaffolding etc., complete as per the specification.	Sqm	1715.00		

14a	Same as above for First Floor	Sqm	643.00		
15	Providing and applying painting in two coats with plastic emulsion paint of approved brand on wall surface to give an even approved shade after thoroughly brushing the surface, free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications.	Sqm	1350.00		
15a	Same as above for First Floor	Sqm	278.00		
16	Providing and finishing external walls in two coats with weather guard waterproof paint of approved brand(ultima of Asian Paints or Equivalent)) and shade to give an even shade after thoroughly brooming the surface to remove all dirt and loose powdered material, free from mortar drops and other foreign matter cost of materials, labour, complete as per specifications.	Sqm	365.00		
16a	Same as above for First Floor	Sqm	365.00		
17	Providing and applying enamel metal paint two coats (including priming coat) over new steel/ wood or other metal/ wood surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications	sqm	105.00		
17a	Same as above for First Floor	Sqm	55.00		
18a.i	Flooring with vitrified tiles (Size-60cmx60 cm, minimum basic value should be @ Rs. 800/m2) over a bed of C.M. 1:6, (1 Cement : 6 course sand) 20mm thick and cement grouted and fixing the tiles on it with a minimum joint space using joint filler of approved quality and colour etc. complete.	Sqm	315.00		
18.a.ii	Same as above for First Floor	Sqm	50.00		
19	Providing Ceramic tiles of approved make, shade and size for toilet flooring, laid on a bed of 20mm thick cement mortar 1:4 mix, flush pointing with white cement using colour pigment, including cost of materials, labour, curing, complete as per specifications. Ceramic Tiles of	Sqm	58.00		

	size 30x30 cm 6mm thick.(basic price Rs. 550/m2)				
19a	Same as above for First Floor	Sqm	8.00		
20	Dadoing walls with best quality premium coloured/white tile of size-20cmx30cm,or nearest size minimum basic value should be @ Rs.550 /m2) over a bed of cement mortar 1:3, 9 mm thick add necessary cement grout and fixing the tiles to correct line and levels etc complete.	Sqm	165.00		
20a	Same as above for First Floor	Sqm	50.00		
21	Supplying and Fixing granite slabs 18 mm thick with a base price of Rs. 2200/m² over a bed of CM 1:4, 20 mm thick and cement grouted and fixing the slab after removing the existing plaster finish including rounding and polishing the edge.	Sqm	21.00		
22	Waterproofing of RCC Terrace / podium slab / toilet / utilities / water retaining structure by preparing teh surface by chipping and cleaning and grouting of Honey comb, voids, cracks / construction joints with cement slurry (1 kg cement added in 10 ltr of water) added with 100gm of inorganic accelerator, followed by spraying of liquid biological modified alkaline earth silicates @ 0.40 ltr per sqm on whole surface to reduce the micro porosity and allowing it to dry, curing the surface for the silicates to penetrate deeper into the concrete and spraying waterproofing impregnate liquid containing silane and silanol linear copolymer @ 0.50 ltr per sqm and finally applying polymer slurry made out of cross linked acrylic / styrene / butadiene & cement in the ratio of 1:0.1, @ 0.50kg/sqm on the whole surface, including all labour charges tools and equipment, all complete as per the specification.	Sqm	470.00		
22a	Same as above for First Floor	Sqm	380.00		
23	Providing and fixing Stainless steel 304 grade for staircase railing, balconies, ramps, with hand rail 50mm dia 16 gauge hollow pipe welded to vertical hollow 50mm dia pipe of 16 gauge, stainless steel vertical pipe spaced at 1.20m regular	Sqm	11.00		

	intervals, and 5 Nos of 25mm dia Stainless steel hollow horizontal pipe are welded to vertical 50mm dia hollow pipe. The entire assembly is fixed to staircase concrete by using expansion bolts by drilling concrete etc., complete including cost of materials, labour, HOM of machineries and electrical charges, etc., complete as per specifications.				
24	Providing, fabricating, assembling and fixing in position aluminium doors using following aluminium mat finish or glossy finish, outer frame plain section 101.6x44.45mm thickness 3.18mm, section weight 2.404kg/m, door shutters vertical section 44.62x44.45mm thickness 3.18mm, section weight 1.505kg/m, top section 47.62x44.45mm thickness 3.00mm, section weight 1.426kg/m bottom section 114.3x44.45 thickness 3.18mm section weight 2.646kg/m, door central section 49.91x44.45mm thickness 3.00mm, section weight 1.495kg/m glazing clips 19x17.3x11mm thickness 0.9mm section weight 0.124kg/m; aluminium sections cut to length joint metred corners grinded, the shutters pivoted opening arrangement with heavy duty aluminium alloy automatic door closures floor mounted, providing and fixing standard approved accessories such as aluminium handle for full width or length, tower bolts, lock, pivots; P.V.C. or rubber gasket with 5.5m thick plain glass for top and bottom panel; aluminium sections treated for removal of any rust and prevention of further rust formation, and coated with greasy materials for non-adherence of mortars or any other sticky materials; the assembled frame fitted with the corner angles, strips and fitted with screws, rawl plugs or teakwood gutties to R.C.C. columns or masonry on sides, beams and flooring in bottom, including cutting, chiselling and making good with cement mortar to match the surface; all the frames thoroughly cleaned free from rust, scale, or dirt including	Sqm	8.00		

	cost of materials, fixtures, labour and HOM of machinery, complete as per specifications using aluminium section powdered coated to a minimum of 60-70 microns with exterior durable pure polyester grade powder of approved quality.				
24a	Same as above for First Floor.	Sqm	13.00		
25	Supplying and fixing 30mm thick PUF filled FRP door shutters on PVC solid frames of size 50x47mm with 5 mm thick including square including 1 no. aldrop, tower bolt, 4 nos 75 mm brass butt hinges with screws etc complete.	Nos.	12.00		
25a	Same as above for First Floor.	Sqm	10.00		
26	Providing and fixing in position aluminium windows and ventilators as per approved drawings with sliding shutters using double track window frame section of size 61.85x31.75mm. with 1.2mm thick, bottom section weight 0.695kg/m; sides and top sections 1.3 mm. thick weight 0.659 kg/m; and shutter comprising top and bottom section of size 40mmx18mm, 1.25mm thick 0.417kg/m; shutter outer side 40mmx18mm, 1.25mm, thick weight 0.417 kg/m, shutter interlock section 40mmx26.7mm, 1.1mm thick, weight 0.469 kg/m. the shutters mounted on nylon rollers with approved quality of fixtures such as aluminium handles tower bolts etc., and providing and fixing 5.5mm, thick plain glass for shutters fitted with rubber beading aluminium sections including cutting to required length, joints mitred subdividing the frame tenoned and rivetted in the assembled frame stiffened with end clips at corners angles etc., and fixed to the walls, lintels, floor beams/sills as the case may be with necessary steel screws, rawl plugs, or teak wood gatties including cutting masonry or concrete and making good the original surface using cement mortar, aluminium sections pre-treated for removal of any Specification using aluminium section powdered coated to a minimum of 60-70 microns with	Sqm	42.00		

	exterior durable pure polyester grade powder of approved quality.				
26a	Same as above for First Floor	Sqm	12.00		
27	Providing and fixing M.S. grill work for windows and ventilators weighing 21kg/sqm using M.S. flats, or M.S. square rods, or combination of M.S. flats and square rods as per approved design, drawing including cutting steel sections and welding the same to required pattern with a coat of red lead primer cost of materials, fixtures, labour and HOM of machinery, complete as per specifications.	Kg	1120.00		
27a	Same as above for First Floor	Kgs	180.00		
28	Supplying and fixing flat iron holdfast of size 350x50x6mm for doors with necessary screws.	Nos.	8.00		
28a	Same as above for First Floor	Nos.	15.00		
29	Providing and fixing in position collapsible steel shutters with single or double leaf with vertical channel 20mm x 10mm x 2 mm braced with flat iron diagonals 20mm x 5mm size, with top and bottom rails of T iron sections of 40 x 40 x6 mm with 38 mm dia steel pulleys complete with bolt and nuts, locking arrangements, stoppers, handles on both sides with 7.5 cm openings at 10cms. c to c applying a priming coat of red lead paint. cost of materials, labour, HOM of machinery, complete as per specifications. size of gate 2.4m x 1.4 m.	Sqm	15.00		
30	Dismantling the existing brick masonry in cement mortar including plastering and removing the debris and disposing the materials away from the site	Cum	5.00		
31	Dismantling of flushing cistern of all types (C.I., PVC, vitreous china) including stacking of useful materials near the site and disposal of unserviceable materials from 7th floor to ground floor and disposal the waste materials away from the site	Nos.	2.00		
32	Dismantling and removing the existing wash basin from 7th floor to ground floor without any damage and stacking the materials for reuse.	Nos.	2.00		
33	Dismantling and removing the	Nos.	2.00		

	existing doors, windows (steel or wood) with or without ventilators including removal of shutters, hinges, holdfast and all other fittings from 7th floor to ground floor and disposal the waste materials away from the site				
34	Providing and laying cement concrete of 1:2:4 (1 cement, 2 sand, 4 graded stone) with 6 mm nominal size aggregate for providing required slope in the roof, including watering, curing, etc complete.	Cum	17.00		
35	Supplying and Fixing granite slabs 18 mm thick with a base price of Rs 2200/m² over a bed of CM 1:4, 20 mm thick and cement grouted and fixing the slab after removing the existing plaster finish including rounding and polishing the edge.	Sqm	4.00		
36	Supplying and fixing wall mounded concealed type (basic price of tank and closet Rs. 20000/No) European W.C. pan parryware or equivalent make with flush valve P-trap, angular cock including all necessary fitting etc complete.	Nos.	10.00		
37	Providing and fixing white vitreous china clay Water Closet Orissa pattern of size580X440mm with integral type footrests, 100mm S or P trap, 10 litre low level, P.V.C. flushing cistern (all are approved make) with fittings, CI/MS brackets, 32mm diameter flush pipe fittings and clamps, overflow arrangements with special and 25mm mosquito proof coupling of approved design, painting of fittings and brackets, cutting and making good the wall and floor wherever required including cost of materials, labour complete as per specifications	Nos.	1.00		
38	Supplying and fixing counter top wash basin (parryware or equivalent make, basic price of wash basin Rs. 9000/No) rates including cost of pillar cock quarter turn, bottle trap are of cap tree or jagur, waste coupling, waste pipe, angle cock with all necessary fittings etc. complete.	Nos.	18.00		
39	Supplying and fixing urinals with sensor (parryware or equivalent	Nos.	6.00		

	make, basic price of Rs.12900/No) flushing etc such as flushing valve, C.P tube, spreader angle cock, urinals waste coupling etc complete				
40	Supply & fixing Urinal division plate (parryware or equivalent make,	Nos.	5.00		
41	Supplying and fixing CP health faucet 20 mm jaquar or crab tree including angle valve (basic price of health faucet Rs.1350/No).	Nos.	10.00		
42	Supplying and fixing 150mm SW gully trap including fixing in position.	Nos.	10.00		
43	Supplying and fixing 150 mm stainless steel grating	Nos.	10.00		
44	Supplying and fixing Two in One tap jaquar or crab tree (basic price of Rs.1370/No)	Nos.	26.00		
45	Supplying and fixing 24" towel rod (basic price of Rs.1750/No) of approved quality.	Nos.	12.00		
46	Supplying and fixing soap dish of approved quality including fixing in position. (basic price of Rs.1407/No)	Nos.	12.00		
47	Providing & fixing 750mm x450mmx 4mm bevelled edge mirror of superior glass mounted on 6mm thick A.C. sheet or plywood sheet and fixed to wooden plug with C.P. brass screws and washers.	Nos.	18.00		
48	Providing and fixing 110 mm PVC pipe to correct line and levels from inspection chamber to the waste water line.	RM	35.00		
49	Supply and fixing 110 mm dia PVC pipe 6 gauge of approved quality confirming to ISI mark with special such as tees bends elbows check nuts etc. including cutting masonry or concrete floors sunshade etc where ever necessary for taking connection fixing the pipe to walls with iron clamps and screws to teak wood plugs imbedded in cement mortar including sparer sockets scaffolding whereever necessary etc complete.	RM	35.00		
50	Supply and fixing75 mm dia PVC pipe using 6 gauge of approved quality confirming to ISI mark for waste water line including cutting masonry or concrete floors sunshade etc where ever necessary for taking	RM	50.00		

	connection fixing the pipe to walls with iron clamps and screws to teak wood plugs imbedded in cement mortar including spare sockets scaffolding where ever necessary etc complete.				
51	Supplying laying and jointing 50mm nominal dia. P.V.C. 15 gauge of approved quality and ISI mark pipe and specials such as tees, bends, elbows, check nuts etc. with clamps including cutting and making good the walls floors etc. complete.	RM	30.00		
52	Supplying laying and jointing 32mm nominal dia. P.V.C. 15 gauge of approved quality and ISI mark pipe and specials such as tees, bends, elbows, check nuts etc. with clamps including cutting and making good the walls floors etc. complete for water line pipe.	RM	25.00		
53	Supplying laying and jointing 20mm nominal dia. P.V.C. pipe 15 gauge of approved quality and ISI marks and specials such as tees, bends, elbows, check nuts etc. with clamps including cutting and making good the walls floors etc. complete for urinals & closet rooms.	RM	25.00		
54	Supply and fixing 160mm dia PVC pipe 6 gauge of approved quality confirming to ISI mark with special such as tees bends elbows check nuts etc. including cutting masonry or concrete floors sunshade etc where ever necessary for taking connection fixing the pipe to walls with iron clamps and screws to teak wood plugs imbedded in cement mortar including sparer sockets scaffolding where ever necessary etc complete.	RM	20.00		
55	Constructing manhole of size 60x60x75 cm inside with reinforced cement concrete M20, 10 cm thick with nominal reinforcement for side walls and bottom and finished with cement mortar 1:4 12 mm thick including a neat cement finishing coat and the top with CI manhole cover 60x60 cm as per standard design.	Nos.	2.00		
	Total Civil works				

	GST @ 18.00%				
	Total amount or Civil Works including GST (A)				
	SECTION -B (Electrical Works)				
56	**DISTRIBUTION BOARDS** **PDB** Supply erection testing and commissioning of wall mounted type double door dust and vermined proof 4 way TPN MCCB VDB with cable termination box concealed on wall comprising the following. (All MCB'S are 10 KA) INCOMING SIDE - 80 A TPN MCCB with O/C, E/F & SHUNT TRIP, 80 ATPN Busbar as per ISS OUT GOING, 6 - 32 A MCB - 12 nos	Nos	1.00		
57	CABLE LAYING AND TERMINATIONS. Supply laying and dressing of 1.1 KV grade PVC insulated armoured UG cable concealed or on wall /ceiling /trench/cable rack, with clamps etc including back filling of trenches if necessary. 4 core 10 sq mm AYFY (Aluminium conductor) for PDB	Mtr	60		
58	End termination of the above cables using single compression type cable glands and heavy duty tinned copper crimping type cable sockets including cable earthing. 4core 10 /16 sq.mm al cable	No.	2		
59	Supply and laying following earth strips / wires No 10 SWG copper conductor (2 runs along with cables to PDBs) from earth bus .	Mtr	80		
60	Supply all materials and providing one earth bench 25 x 3mm of 30cms long with necessary holes for earthing connections.	No.	1		
61	**WIRING FOR LIGHT, FAN, PLUG SOCKETS etc**.				
61.1	Supply all materials and wiring through wall floor etc, concealed/surface as per colour code with 1.5sq mm P V C insulated FRLS stranded copper wire for the points and 1.5 sq mm P.V.C. insulated green colour FRLS	No.	19		

	stranded copper wire as continuous earth for points, with independent earth wire for each circuit, through ISI grade 20 / 25 mm PVC conduit,(Medium Grade) including cost of circuit wiring with all accessories as per IS 9537 part II and installation of factory made MS boxes, 2 plate model modular switches and three plate ceiling rose / connectors etc of approved make for light/ exhaust fan/ calling bell etc .Number of cables in conduit should be limited to the IS standards and as per the conditions laid down in the tender DB etc. PVC bush to be provided in the conduits in switch boxes / DB to protect the insulation. The cost includes chipping the floor/wall etc and re-plastering etc, if required. The average length of light/calling bell point from switch board.				
61.2	Same as item no 4.01 above but for 2 lights controlled by one switch	No	12		
61.3	Same as item no 4.01 above but for 3 lights controlled by one switch	No	4		
61.4	Wiring Same as item no 4.01 above using 3 runs 1.5 sq mm PVC insulated stranded copper wire for 6 A 3 pin plug points (Raw Power) at independent locations and on tables.	Mtr	250		
61.5	Supply and installation of 6A 3 pin plug with switch in combined position in the existing lighting switch boards switch boards with all accessories.	No	5		
61.6	Supply all materials and installation of 2 plate modular 6 A 3 pin plug with switch and indicator at separator location. Including the cost of chipping re-plastering etc if required(raw power)	No	7		
61.7	Supply all materials and installation of 2 plate modular 6/16A 5pin plug with switch and indicator. Including the cost of chipping re-plastering etc if required.(raw power and on wall/ Partitions and record room power).	No	9		
61.8	Supply all materials and wiring through wall / floor etc. recessed/surface as per colour code with 2 runs of 1.1 KV grade 2.5 sqm	Mtr	500		

	PVC insulated FRLS copper wire for phase and neutral and 1.5sq.mm green colour for earth through ISI marked 20 mm PVC conduit with all accessories for 16/6 A (5pin)power plug socket. . Including the cost of chipping re-plastering etc if required.The rate includes the cost of complete wiring from DB to the point.				
61.9	Supply all materials and providing 16A 3pin plug top connected with 3 core 2.5sqmm flexible pvc insulated cu cable of length 2m for providing input supply to locker room switch board from the out side power socket.	No	1		
62	SUPPLY AND INSTALLATION OF LIGHT FITTINGS, CEILING FAN, EXHAUST FAN ETC. Supply installation giving electrical connection testing and commissioning of the following light fittings including the cost of materials for fitting connection through 20 mm flexible metal conduit. The light fittings should be the approved make and approved model as per the list attached. The scope includes the cost of control gears, fixing frames on ceiling and accessories complete. The warrantee period and date of all fittings should be neatly written with enamel paint on each fitting as per the direction of officer in charge. The warrantee certificate along with details should be handed over to bank on completion of work.				
62.1.	Supply and installation LED down Lights with pressure die cast body with recess mounted fittings with fixing frame and All accessories and driver etc . 10/12W, Recess Mounted (1000 Lumens and with 5years warrantee.) Make, Philips, LT, Osram(The model should conform to the specification)				
62.1.a	Supply	No	13		
62.1.b	Installation	No	13		
62.2	LED Batten 21 w 4ft - high quality diffuser suitable for wall mounting with all accessories. Philips TMC 501P2XT22WP3242				

62.2.a	Supply	No	26		
62.2.b	Installation	No	26		
	Supply and installation of 300mm Continuous Duty exhaust fan 900rpm for toilet with 2 year warrantee.				
62.3.a	Supply	No	15		
62.3.b	Installation	No	15		
	Supply and installation of 1200mm ceiling fan with double ball bearing with 5star rating with 5 year warrantee				
62.4.a	Supply	No	4		
62.4.b	Installation	No	4		
	Supply at site and installation of heavy duty wall fan of approved make with all accessories. Installation includes the cost of materials for fitting, giving electric connection, and all necessary civil works.				
62.5.a	Supply	No	8		
62.5.b	Installation	No	8		
63	Supply all materials and providing identification on panels, DB's, DB outgoing MCB's, Switch boards, UPS, Lights, fans arrangements etc. using paint & stencils as per direction of Authorities including supply and providing of framed laminated schematic diagram of the installation.	LS	1		
64	Dismantling and Removal of existing light fittings, fans, DBs, switch boards and its wirings etc all these wirings and fittings to be removed and fitting the same to the ground floor as per the direction of the authorities.	LS	1		
	Total Electrical Works				
	i) GST for supply				
	ii) GST for installation				
	Total amount for Electrical Works including GST (B)				
Total Work Value for Civil and Electrical Works (A+B)					

(Rs in words: ……)

1. We confirm that the quoted price is inclusive of all statutory levies, GST & other taxes, duties, packing, forwarding, freight, handling, loading, unloading & insurance charges for delivery at your Site/Press and is firm.
2. We confirm that there would not be any price escalation during the supply & fixing period
3. We confirm that we will abide by all the tender terms & conditions of tender, above

scope of work and we do not have any counter conditions.

4. We confirm that tendered item will be supplied as per specification and tender conditions.

Thanking you,
Yours faithfully, Seal of the Firm:

(……)
Name & Signature with date

Section XII: Questionnaire /Checklist

The Tenderer should furnish specific answers to all the questions/ issues mentioned below. In case a question / issue do not apply to a tenderer, the same should be answered with the remark ―not applicable". Wherever necessary and applicable, the tenderer shall enclose certified copy as documentary proof/ evidence to substantiate the corresponding statement.

In case a tenderer furnishes a wrong or evasive answer against any of the under mentioned question / issues, its tender will be liable to be ignored.

Sl No	Item Description	Yes/ No	Deviation /Remarks
01.	Brief description of goods and services offered as per tender and scope of work?		
02	Offer is valid for acceptance up to 120 days (additional 30 days if required) after opening of tender		
03	A copy of Permanent Income Tax A/ C No (PAN) card attached (Please attach certified copy of your latest/ current Income Tax clearance certificate issued by the above authority)		
	A copy of GST Registration Certificate attached ?		
04	Are you currently registered with the Directorate General of Supplies & Disposals (DGS&D), New Delhi, and/ or the National Small Industries Corporation (NSIC), New Delhi, and/ or the present BRBNMPL and/ or the Directorate of Industries of the concerned State Government for the goods quoted? If so, indicate the date up to which you are registered and whether there is any monetary limit imposed on your registration.		
05	Are you currently registered under the Indian Companies Act, 1956 or any other similar Act? Please attach certified copy(s) of your registration status etc. in case your answer(s) to above queries is in affirmative.		
06	Please indicate name & full address of your Banker(s)		
07	Please state whether business dealings with you currently stand suspended/ banned by BRBNMP/any Ministry / Dept. of Government of India or by any State Govt.		
08	Did you Enclosed following Documents/Attachments; (a) DD for EMD /Tender fee are attached with tender documents and proof of documents for eligibility in Part-I bid envelop? (b) Did you put price bid document in separate second envelop and sealed properly? (c) Did you put above two envelop in to an third envelop written tender No, name of work, Addresses etc.? (d) Did you attached copies of Work completion certifications and Audited balance sheet for last 03 years certified by CA as per eligibility criterion mentioned section Section-IX & Section: XX		

……
(Signature with date)
(Full name, designation & address of the person duly authorized sign on behalf of the tenderer)

For and on behalf of
……

(Name, address and stamp of the tendering firm)

SECTION XV: Bank Guarantee Form for Performance Security.

Insert Bank's Name, and Address of Issuing Branch or Office)

Beneficiary (**BHARATIYA RESERVE BANK NOTE MUDRAN PRIVATE LIMITED,
A/c No.: 10562408040, IFSC Code: SBIN0003130, Type of A/c: Cash Credit,
Address of the Bank: State Bank of India,
PB NO.204, Mothikhana Bldg, New Sayyaji Rao Road, Mysuru-570024,
Phone No.: 0821-2437650 / 605)**

Date: ----------

Performance Guarantee No. _____

WHEREAS ……. (name and address of the Contractor) (hereinafter called "the Contractor") has undertaken, in pursuance of contract no ……. dated ……. to construction (UPVC Works) (description of goods and services) (herein after called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that the Contractor shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract:

AND WHEREAS we have agreed to give the Contractor such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the Contractor, up to a total of_____(amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the Contractor to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding me said debt from the Contractor before presenting us with the demand. We further agree that no change or addition to or other modification of the terms of the contract to be performed thereunder or of any of the contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

We undertake to pay BRBNMPL up to the above amount upon receipt of its first written demand, without BRBNMPL having to substantiate its demand.

This guarantee will remain in force for a period of sixty days after the after the completion of all contractual obligations and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the authorized officer of the Bank) Name
and designation of the officer
Seal, name & address of the Bank and address of the Branch

Name and designation of the officer
Seal, name & address of the Bank and address of the Branch.

Section XVI: Contract Form

(Address of BRBNMPL's office issuing the contract) Contract

No ..... dated…….

This is in continuation to this office' Notification of Award No. …….. dated …….

1. Name & address of the Contractor: ……..
2. BRBNMPL's Tender document No. …….. dated …….. and subsequent Amendment No. …….. dated ……. (if any), issued by BRBNMPL
3. Contractor's Tender No. …….. dated …… and subsequent communication(s) No…… dated ……..... (If any), exchanged between the contractor and BRBNMPL in connection with this tender
4. In addition to this Contract Form, the following documents etc, which are included in the documents mentioned under paragraphs 2 and 3 above, shall also be deemed to form and be read and construed as part of this contract:
    a. General Conditions of Contract;
    b. Special Conditions of Contract;
    c. List of Requirements;
    d. Technical Specifications;
    e. Quality Control Requirements;
    f. Tender Form furnished by the supplier;
    g. Price Schedule(s) furnished by the supplier in its tender;
    h. Manufacturers' Authorisation Form (if applicable for this tender);
    i. BRBNMPL's Notification of Award

Note: The words and expressions used in this contract shall have the same meanings as are respectively assigned to them in the conditions of contract referred to above. Further, the definitions and abbreviations incorporated under Section - V - 'General Conditions of Contract' of BRBNMPL's Tender document shall also apply to this contract.

5. Some terms, conditions, stipulations etc. out of the above-referred documents are reproduced below for ready reference:
    a. Brief particulars of the goods and services which shall be supplied / provided by the supplier are as under:

Schedule No.	Brief description of goods / services	Accounting unit	Quantity to be supplied	Unit Price (In Rs.)	Total price

Any other additional services (if applicable) and cost thereof:

i. Total value (in figure) (In words)
ii. Delivery schedule
iii. Details of Performance Security
iv. Quality Control
    a. Mode(s), stage(s) and place(s) of conducting inspections and tests.
    b. Designation and address of BRBNMPL's inspecting officer
v. Destination and despatch instructions
vi. Consignee, including port consignee, if any
vii. Warranty clause
viii. Payment terms
ix. Paying authority

……..
(Signature, name and address of BRBNMPL's authorized official) For
and on behalf of
Received and accepted this contract

(Signature, name and address of the supplier's executive duly authorized to sign
on behalf of the supplier)
For and on behalf of

(Name and address of the supplier)
……
(Seal of the supplier) Date:
Place:

Section XVII: Letter of Authority for attending a Bid Opening

(Refer to clause 24.2 of GIT)

The General Manager

Unit Address

Subject: Authorization for attending bid opening on_____(date) in the Tender of _____

Following persons are hereby authorized to attend the bid opening for the tender mentioned above on behalf of_____(Bidder) in order of preference given below:

Order of Preference	Name	Specimen Signatures
I.		
II.		
Alternate Representative		
Signature of Bidder or Officer authorized to sign the bid Documents on behalf of the bidder		

Note:

1. Maximum of two representatives will be permitted to attend bid opening. In cases where it is restricted to one, first preference will be allowed. Alternate representative will be permitted when regular representatives are not able to attend.

2. Permission for entry to the hall where bids are opened may be refused in case authorization as prescribed above is not produced.

Signature and Stamp of Bidder

Date: / / 2018

Section XIX: Proforma of Bills for Payment

(To be submitted by contractor's on their letter Head)

Name and Address of the Firm:

Invoice / Bill No. & Date	
PAN No.	
GSTIN No.	

Bill No: Dated :…….

To:
The General Manager
B.R.B.N.M. Pvt. Limited,
Note Mudran Nagar, Mysuru-570 003.

Sub: Submission of Bill for payment

Si. No.	Work Order No: & Date	Item Description	Quantity	Rate (Rs.)	Amount (Rs.)	Amount in Words
1						
Total (Including all taxes) - A separate Abstract Sheet with detail measurement sheet is to be attached along with this bill.						

2.	Work order amount: Rs.
3	Type of bill:
4	Area of work:
5	Starting date of work :
6	Schedule date of completion:
7	Actual date of completion:
8	Reasons for delay (if any):
11	Liquidated damage (if any): (For any delay beyond specified schedule time period)
12	DLP Period:
13	EMD :
14	Security Deposit:
15	Any other details/Remarks:

I hereby certify that the payment being claimed is strictly in terms of the contract and all the obligations on the part of the supplier for claiming that payment has been fulfilled as required under the contract.

Signature and Stamp of Contractor

Section XX: Proforma of Financial Turnover Certificate

Certificate

(To be issued by practicing Chartered Accountant with membership No. on the letter head)

To whom so ever concern

Dear Sir,

Sub: Certificate for turnover and others as per tender conditions.

This is to certify that M/s._____(Agency Name & Address) are in the business of contracts execution for last 03 completed years (considered up to 31st March 2017 of last financial year). Their performance report as required under tender conditions for the last 3 years is as follows.

Financial Years	Annual Turnover	Profit / (- Loss) for the year	Net worth as on year end
2014-15			
2015-16			
2016-17			
Total			

The above information is based on the audited accounts.

Place:

Date:

Seal Signature of CA with Membership No.

****

Annexure-A

Form No. E-5 Appendix – VIII

NATIONAL ELECTRONIC FUND TRANSFER

Model Mandate Form

(Investor / customer's option to receive payments through Credit Clearing Mechanism)

Name of the Scheme and the periodicity of payment

No.

1	Investor / Customer's Name		
2	Particulars of Bank account		
	A	Name of the Bank	
	B	Name of the branch	
		Address	
		Telephone No	
		Whether Bank branch is NEFT enabled	
	C	Code number of the bank and branch appearing on the MICR Cheque issued by the bank	
	D	Type of the account (SB, Current or Cash Credit)	
	E	Ledger and Ledger Folio number	
	F	Account number (as appearing on the Cheque book)	
	G	**RTGS / IFSC Code No.**	
	(In lieu of the bank certificate to be obtained as under, please attach a blank cancelled cheque or photocopy of a cheque or front page of your Savings bank passbook issued by your bank for verification of the above particulars)		
3	Date of effect		

I 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, I would not hold the user institution responsible. I have read the option invitation letter and agree to discharge the responsibility expected of me as a participant under the scheme.

(……)

Signature of the Investor / Customer

Date:

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

Bank's Stamp

Date:

(……)

Signature of the authorized official of the Bank

ENARC CONSULTANTS *ARCHITECTS AND ENGINEERS* M. G. Road, Thrissur - 1. Tel. : +91 (487) 2441901 Fax : +91 (487) 2442011 E-mail : office@enarc.net.in	PROPOSED BUILDING FOR BHARATIYA RESERVE BANK NOTE MUDRAN (P) LIMITED - INK PROJECT **GROUND FLOOR PLAN**	Drawn By Architect	GINISH K G Praveen.P B. Arch.[Reg], A.I.I.A, A.I.I.I.D	Chief Architect Ar. K. RAMAKRISHNAN B.Sc.(Engg), F.I.E, C. Eng (I), F.I.V , F.I.I.A. (Regd), A.I.I.I.D	Date : 07 -08 -2018 Revision Date: Sheet No : 01 Scale : N T S All Dimensions are in CMs.